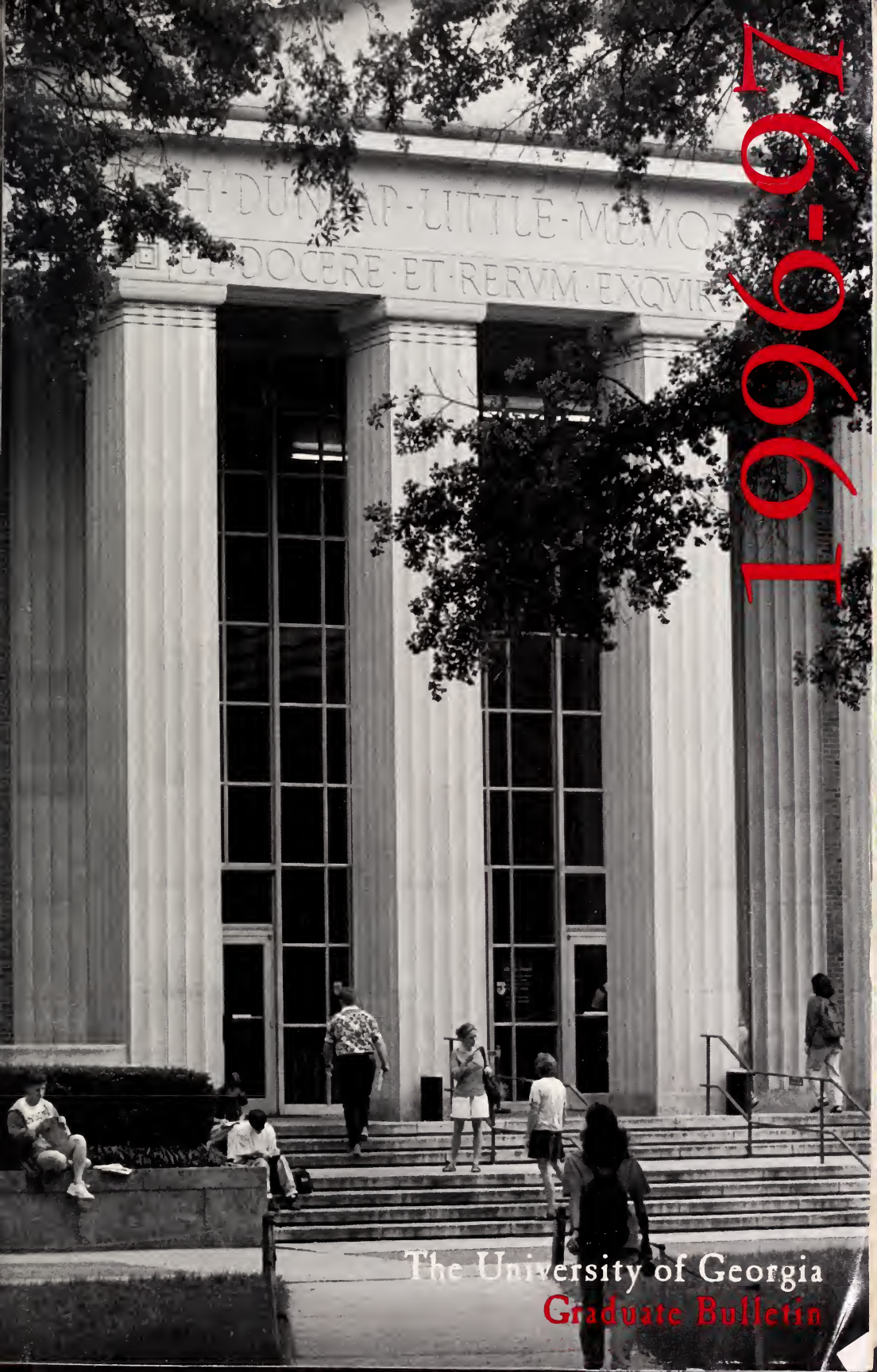




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76-9661

The University of Georgia
Graduate Bulletin

Directory

Note:

All numbers are in area code 706.

Graduate School:

Boyd Graduate Studies Research Center;
Graduate Admissions; 542-1787
Graduate Records Office; 542-4806
Graduation Office; 542-4803
Business Office; 542-4798

Bookstore, University:

Sanford Drive; 542-3171

Career Planning and Placement:

Clark Howell Hall; 542-3375

Fees Payment:

Business Services Building; 542-1625

Financial Aid:

220 Academic Building; 542-6147

Graduate Student Association:

517 Boyd Graduate Studies Research
Center; 542-4792

Health Service:

Gilbert Health Center; 542-1162

Housing Office:

Russell Hall; 542-1421

International Services and Programs:

210 Memorial Hall; 542-1557

Libraries:

Main Library, North Campus; 542-7501
Science Library, Boyd Graduate Studies
Research Center; 542-4535

Parking Services:

Perimeter Parking Lot; 542-7275

Registrar:

105 Academic Building; 542-4040

Student Activities:

Tate Student Center; 542-7774

Student Affairs, Office of the Vice**President for:**

201 Academic Building; 542-3564

Tate Student Center:

Information; 542-3816

If you have a disability and need assistance in order to obtain this bulletin in an alternative format, please contact the Office of Graduate Admissions at (706) 542-1739.

The University of Georgia
A Unit of the University System of Georgia

Graduate Bulletin

Pursuant to directives of the President of this institution, the University of Georgia continues its affirmative implementation of equal opportunity to employees, students, covered contractors and vendors, and applicants for employment, admission, or contractor/vendor status. The University of Georgia will act in matters of employment, admissions, programs, and services free of prohibited bias with regard to race, creed, color, sex, national origin, religion, age, veteran status, or disability. Further, the University of Georgia will not maintain racially segregated facilities.

Continuation of the above policies is consistent with applicable provisions of the Civil Rights Act of 1964, the Education Amendments of 1972, Executive Order 11246, Revised Order 4, the Vietnam Era Veterans Readjustment Act of 1974, the Rehabilitation Act of 1973, and The Americans with Disabilities Act of 1990, as revised and/or amended, with implementing regulations. Accordingly, this institution will not discriminate in employment, admissions, programs, or services with regard to any position for which the applicant, employee, or student is qualified and will make reasonable accommodation for physical and mental limitations.

The Affirmative Action Plan implementing the above body of law, regulation, and policy is administered by Claude-Leonard Davis, Director of the UGA Equal Opportunity Office at 3 Peabody Hall, Athens, Georgia 30602-1622. Telephone inquiries concerning this Plan may be directed to (706) 542-7912. Copies of this Plan are available for inspection in the Equal Opportunity Office and in the UGA Main Library during normal weekday working hours.

While every effort is made to provide accurate and current information, the University reserves the right to change, without notice, statements in the bulletin concerning rules, policies, fees, curricula, courses, calendar, or other matters. Students enrolled at the University agree to comply with the University's rules and regulations and to accommodate to any changes necessary. Further, the statements set forth in this bulletin are for informational purposes only and should not be construed as the basis of a contract between a student and the institution.

1996-97
76-9661

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Academic Calendar 1996-1997

1996

Summer Quarter

Residence Halls Open June 16, Su
Late Registration June 18, Tu
4th of July Class Recess July 4-5, Th-F

Long Session

Note: Classes meet for *75 minutes daily*

Classes Begin June 19, W
Drop/Add June 19-21, W-F
Midpoint of Session July 15, M
Olympic Recess Begins July 29, M
Classes Resume Aug. 5, M
Classes End Aug. 13, Tu
Final Exams Aug. 14-16, W-F

First Short Session

Note: Classes meet for *150 minutes daily*

Classes Begin June 19, W
Drop/Add June 19-21, W-F
Midpoint of Session June 28, F
Classes End July 12, F
Final Exams July 15-16, M-Tu

Second Short Session

Note: Classes meet for *150 minutes daily*

Late Registration July 16, Tu
Classes Begin July 17, W
Drop/Add July 17-18, W-Th
Midpoint of Session July 26, F
Olympic Recess Begins July 29, M
Classes Resume Aug. 5, M
Classes End Aug. 14, W
Final Exams Aug. 15-16, Th, F

1996

Fall Quarter

Residence Halls Open Sept. 16, M
Graduate Student Orientation Date and time to be announced
Late Registration Sept. 18, W
Classes Begin Sept. 19, Th
Drop/Add Sept. 19-20, 23, Th-F, M
Midpoint of Quarter Oct. 23, W
Thanksgiving Recess Nov. 25-Dec. 1, M-F
Classes Resume Dec. 2, M
Classes End Dec. 4, W
Final Exams Dec. 5-6, 9-10, Th-F, M-Tu

1997**Winter Quarter**

Residence Halls Open	Jan. 2, Th
Late Registration	Jan. 6, M
Classes Begin	Jan. 7, T
Drop/Add	Jan. 7-9, T-Th
Holiday	Jan. 20, M
Midpoint of Quarter	Feb. 11, T
Classes End	Mar. 17, M
Final Exams	Mar. 18-21, T-F

1997**Spring Quarter**

Residence Halls Open	Mar. 26, W
Late Registration	Mar. 28, F
Classes Begin	Mar. 31, M
Drop/Add	Mar. 31-Apr. 2, M-W
Midpoint of Quarter	May 2, F
Classes End	June 6, F
Final Exams	June 9-12, M-Th
Commencement	June 14, Sa

1997**Summer Quarter**

Residence Halls Open	June 18, W
Late Registration	June 20, F
Holiday (No classes)	July 4, F

Long Session

Note: Classes meet for *70 minutes daily*

Classes Begin	June 23, M
Drop/Add	June 23-25, M-W
Midpoint of Session	July 17, Th
Classes End	Aug. 12, T
Final Exams	Aug. 13-15, W-F

First Short Session

Note: Classes meet for *140 minutes daily*

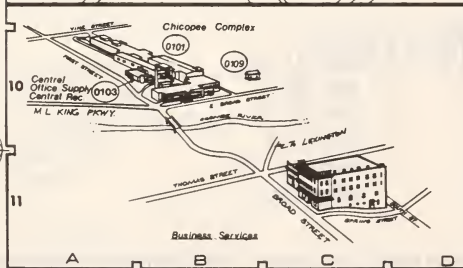
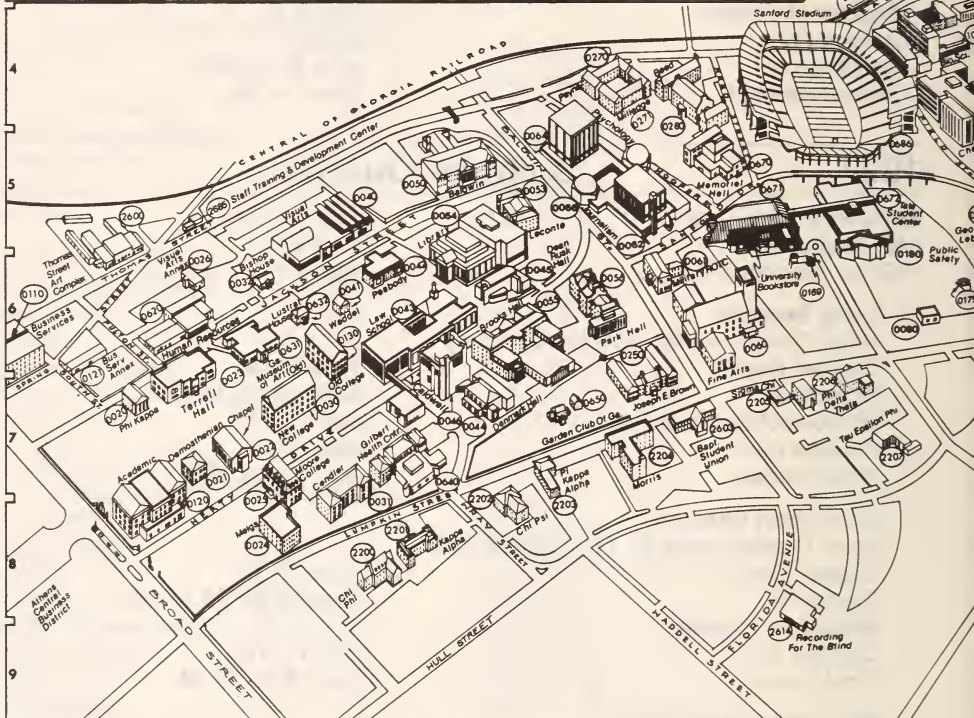
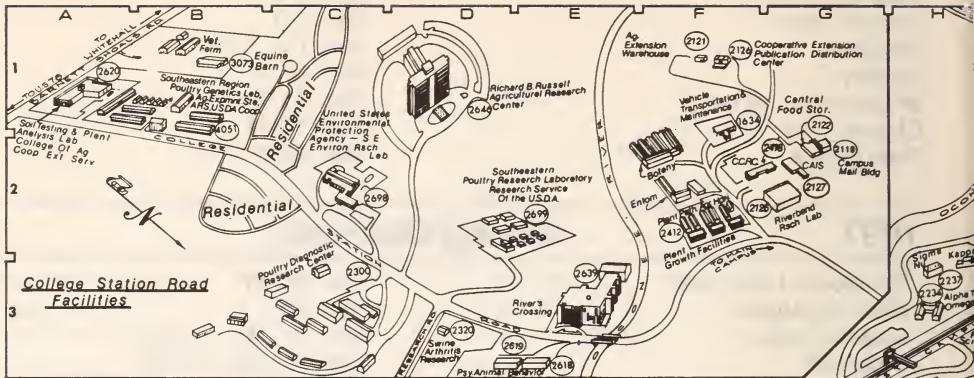
Classes Begin	June 23, M
Drop/Add	June 23-25, M-W
Midpoint of Session	July 3, Th
Classes End	July 17, Th
Final Exams	July 18, 21, F, M

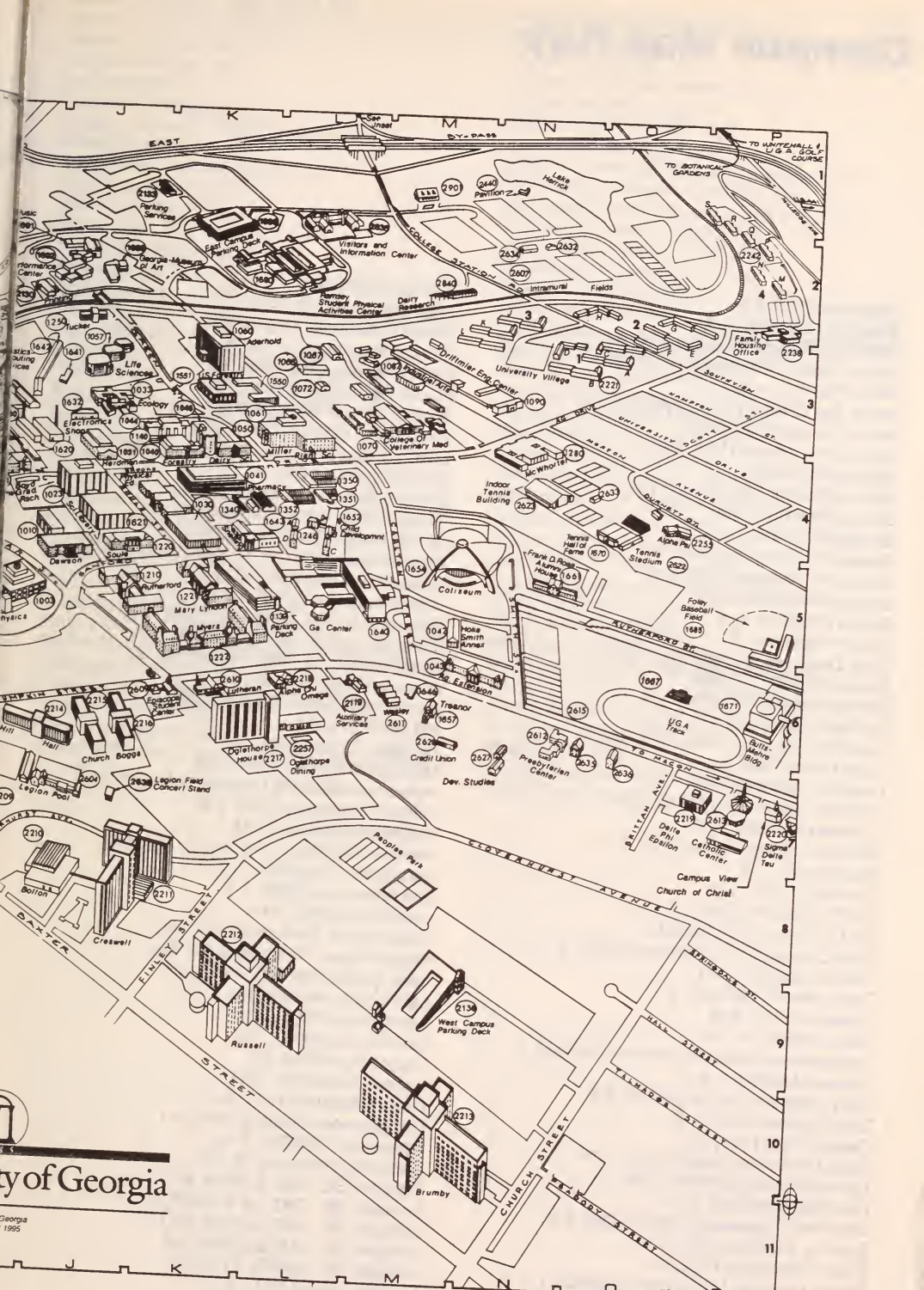
Second Short Session

Note: Classes meet for *140 minutes daily*

Late Registration	July 21, M
Classes Begin	July 22, T
Drop/Add	July 22, T
Midpoint of Session	Aug. 1, F
Classes End	Aug. 14, Th
Final Exams	Aug. 15, F

Note: This Calendar is correct as of the date of this publication. The Calendar may be subject to change during the next year. Please refer to the Schedule of Classes and/or other special announcements that may be forthcoming.





University of Georgia

Georgia
1995

Campus Map Key

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Alpha Epsilon Pi Fraternity/2232, 2-I
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Alpha Tau Omega Fraternity/2234, 3-H
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Automotive Center/1634, 2-F
Baldwin Hall/0050, 5-D
Baptist Student Union/2603, 7-F
Barrow Hall/1021, 4-I
Baseball Stadium/1685, 5-P
Benson Building/1646/6-M
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Bishop House/0032, 6-B
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Clark Howell Hall/0290, 6-H
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The University System of Georgia

The University System of Georgia includes 34 state-sponsored, public institutions located throughout Georgia—6 universities, 13 senior colleges, and 15 two-year colleges.

A 15-member constitutional Board of Regents—one from each of the state's 11 Congressional Districts and five from the state-at-large—governs the University System, which was established in 1932. Board members are appointed by the Governor, subject to state senate confirmation, for seven-year terms.

The Chairperson, the Vice Chairperson, and other officers of the Board are elected by its membership. The Chancellor, who is not a Board member, is the chief executive officer of the Board and chief administrative officer of the University System.

The overall programs and services of the University System are offered through three major components: Instruction, Public Service/Continuing Education, Research.

Board of Regents' policies for government, management, and control of the University System and the Chancellor's administrative actions provide institutions a high degree of autonomy. The President is the executive head of each institution and is recommended by the Chancellor and appointed by the Board.

The University System Advisory Council, with 34 committees, engenders continual dialogue on major academic and administrative matters and makes recommendations to the Chancellor, who transmits them to the Board as appropriate, regarding academic and administrative operations in the System. The Council consists of the Chancellor, the Vice Chancel-

lor, and all Presidents as voting members. It includes other officials of institutions as nonvoting members. The Council's 21 academic and 13 administrative committees are composed of institutional representatives, typically one from each unit, and deal with matters of System-wide application.

Matriculation fees and nonresident tuition fees for students at all institutions are established by the Board of Regents. All students pay matriculation fees while out-of-state students pay nonresident tuition in addition. Other fees for student services and activities are established by institutions, subject to Board of Regents' approval. Non-mandatory fees established by institutions are subject to approval of the Board of Regents' office.



Institutions of the University System of Georgia

Universities

- Athens
The University of Georgia
- Atlanta
Georgia Institute of Technology
Georgia State University
- Augusta
Medical College of Georgia
- Statesboro
Georgia Southern University
- Valdosta
Valdosta State University

Senior Colleges

- Albany
Albany State College
- Americus
Georgia Southwestern College
- Augusta
Augusta College
- Carrollton
West Georgia College
- Columbus
Columbus College
- Dahlonega
North Georgia College
- Fort Valley
Fort Valley State College
- Marietta
Kennesaw State College
Southern College of Technology
- Milledgeville
Georgia College
- Morrow
Clayton State College
- Savannah
Armstrong State College
Savannah State College

Two-Year Colleges

- Albany
Darton College
- Atlanta
Atlanta Metropolitan College
- Bainbridge
Bainbridge College
- Barnesville
Gordon College
- Brunswick
Brunswick College
- Cochran
Middle Georgia College
- Dalton
Dalton College
- Decatur
DeKalb College
- Douglas
South Georgia College
- Gainesville
Gainesville College
- Macon
Macon College
- Rome
Floyd College
- Swainsboro
East Georgia College
- Tifton
Abraham Baldwin Agricultural College
- Waycross
Waycross College

University System of Georgia
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Atlanta, Georgia 30334-1450

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*Position vacant at time of publication

The University of Georgia

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Hubert B. Parker, *Associate Vice President and Controller*

Vice President for Legal Affairs

Bryndis W. Roberts, *Vice President*
Susan L. Jones, *Associate Vice President*
S. Elizabeth Bailey, *Assistant Vice President*
Arthur H. Leed, *Assistant Vice President*

Vice President for Student Affairs

Dwight O. Douglas, *Vice President*
Daniel A. Hallenbeck, *Associate Vice President*

Registrar

Bruce T. Shutt, *Registrar and Associate Vice President for Student Affairs*
William C. Marshall, *Associate Registrar*
Gary D. Moore, *Associate Registrar*

Admissions (Undergraduate)

Nancy G. McDuff, *Director*
John W. Albright, *Associate Director*
Eileen A. Canty, *Associate Director*

Libraries

William Gray Potter, *Director*

Colleges and Schools

College of Arts and Sciences (1801)

School of Art

School of Music

Wyatt W. Anderson, *Dean*

College of Agricultural and Environmental Sciences (1859)

Gale A. Buchanan, *Dean*

School of Law (1859)

Edward D. Spurgeon, *Dean*

College of Pharmacy (1903)

Stuart Feldman, *Dean*

Daniel B. Warnell School of Forest Resources (1906)

Arnett C. Mace, Jr., *Dean*

College of Education (1908)

Russell H. Yeany, Jr., *Dean*

Graduate School (1910)

Gordhan L. Patel, *Dean*

C. Herman and Mary Virginia Terry

College of Business (1912)

J.M. Tull School of Accounting (1977)

Albert W. Niemi, Jr., *Dean*

Henry W. Grady College of Journalism and Mass Communication (1915)

John Thomas Russell, *Dean*

College of Family and Consumer Sciences (1933)

Sharon Y. Nickols, *Dean*

College of Veterinary Medicine (1946)

David P. Anderson, *Dean*

School of Social Work (1964)

Bonnie L. Yegidis, *Dean*

School of Environmental Design (1969)

Kerry J. Dawson *Dean*

Administrative Officers of the Graduate School

Gordhan L. Patel, A.B., Ph.D., *Dean*

Donald R. Lowe, B.M.E., M.M.E., D.M.A.,
Associate Dean

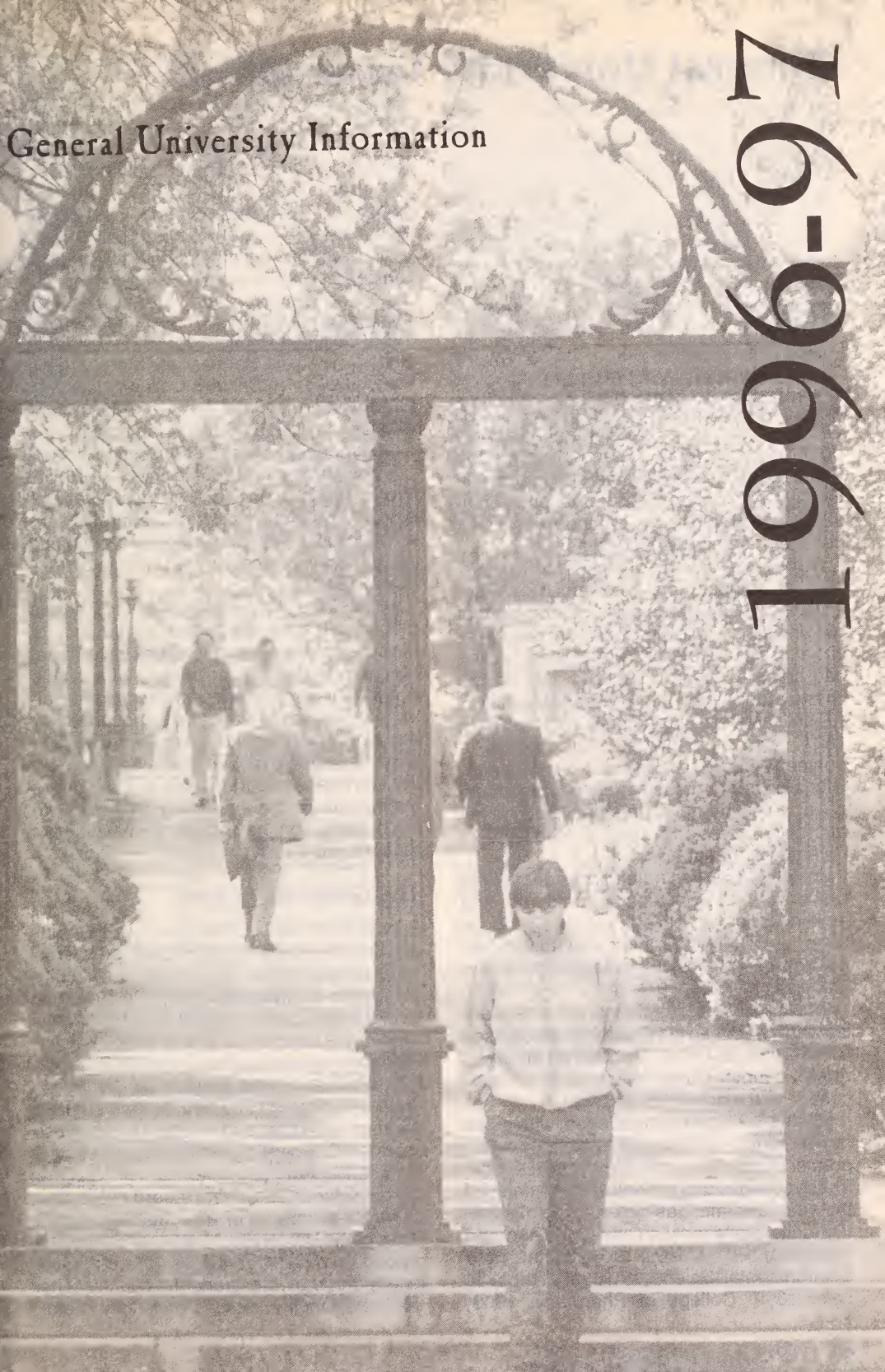
Marjorie Gordon, B.A., M.A., Ph.D.,
Assistant Dean

Mary Ann Keller, A.B.J., *Director of Graduate Admissions*

Sherri L. Ledford, B.A.,
Graduate Program Administrator

General University Information

1996-97



General University Information

History

The University of Georgia

When The University of Georgia was incorporated by an act of the General Assembly on January 27, 1785, Georgia became the first state to charter a state-supported university. In 1784 the General Assembly had set aside 40,000 acres of land to endow a college or seminary of learning.

At the first meeting of the board of trustees, held in Augusta on February 13, 1786, Abraham Baldwin was selected president of the University. Baldwin, a native of Connecticut and a graduate of Yale University who had come to Georgia in 1784, drafted the charter adopted by the General Assembly.

The University was actually established in 1801 when a committee of the board of trustees selected a land site. John Milledge, later a governor of the state, purchased and gave to the board of trustees the chosen tract of 633 acres on the banks of the Oconee River in northeast Georgia.

Josiah Meigs was named president of the University and work was begun on the first building, originally called Franklin College in honor of Benjamin Franklin and now known as Old College. The University graduated its first class in 1804.

The curriculum of traditional classical studies was broadened in 1843 to include courses in law, and again in 1872 when the University received federal funds for instruction in agriculture and mechanical arts.

Thirteen schools and colleges, with auxiliary divisions, carry on the University's programs of teaching, research and service. These colleges and schools and the dates of their establishment as separate administrative units are: Franklin College of Arts and Sciences, 1801; College of Agricultural and Environmental Sciences, 1859; School of Law, 1859; College of Pharmacy, 1903;

D. B. Warnell School of Forest Resources, 1906; College of Education, 1908; Graduate School, 1910; C. Herman and Mary Virginia Terry College of Business, 1912; Henry W. Grady College of Journalism and Mass Communication, 1915; College of Family and Consumer Sciences, 1933; College of Veterinary Medicine, 1946; School of Social Work, 1964; School of Environmental Design, 1969. The Division of General Extension, now the Georgia Center for Continuing Education, was incorporated into the University in 1947.

In 1931 the General Assembly of Georgia placed all state-supported institutions of higher education, including The University of Georgia, under the jurisdiction of a single board. This organization, known as the University System of Georgia, is governed by the Board of Regents. The Board of Regents' executive officer, the chancellor, exercises a general supervisory control over all institutions of the University System, with each institution having its own executive officers and faculty.

The Graduate School

Prior to the formal establishment of the Graduate School, courses of postgraduate status were offered under the control of a faculty committee on graduate studies. In 1910, the formal organization of graduate studies into a Graduate School was authorized. Dr. Willis H. Bocock served as the Graduate School's first dean and was succeeded by R. P. Stephens, George H. Boyd, Gerald B. Huff, Thomas H. Whitehead, Hardy M. Edwards, Jr., John C. Dowling, and the present dean, Gordhan L. Patel.

The Graduate School coordinates the graduate programs of all schools and colleges of the University. Matters of policy and procedure are determined by the graduate faculty through the graduate council. The graduate faculty consists of faculty mem-

bers appointed by the President on the basis of productive research, effective teaching, and other creative activities. The policies adopted by the graduate council are administered by the dean of the Graduate School.

The traditional degrees, Master of Arts and Master of Science, are offered in 26 and 36 disciplines, respectively. The Doctor of Philosophy degree is offered in 69 disciplines. The University also offers professional master's degrees in 22 areas, the Specialist in Education degree, and professional doctoral degrees in education, music, and public administration.

Purpose

The University of Georgia, a land-grant and sea-grant university, is the state's oldest, most comprehensive, most diversified institution of higher education. Its constituencies are numerous, and the scope of its programs in graduate, professional, and undergraduate education is the most extensive in the state. As Georgia's leading institution of higher learning, the University has the following major purposes:

- To disseminate knowledge through teaching in the academic disciplines and fields of professional study that make universities distinctive; related to this purpose are programs and other opportunities for students' intellectual, professional, and personal development.
- To advance knowledge through research, scholarly inquiry, and the creative arts; related to both teaching and research is the conservation and enhancement of the state's and the nation's intellectual, cultural, and environmental heritage.
- To provide service to the public through consultation, technical assistance, short-term instruction, training, and other opportunities for continued learning, growth, and development.

To fulfill its multiple purposes and commitments, The University of Georgia defines its instructional, research, and public service missions as broadly as possible, with an explicit commitment to excellence in all of its missions. Since the quest for knowledge is universal, a global perspective is necessary to provide students with educational opportunities consistent with the international dimensions of their future careers and personal lives.

Teaching

Traditionally, teaching is the essential mission of American universities. Through its thirteen colleges and schools, The University of Georgia offers programs of general, advanced, and specialized study in virtually all traditional academic disciplines and in various professional and applied fields. As a public, state-supported, land-grant and sea-grant institution, the University has a commitment (a) to excel in undergraduate, professional, and graduate instruction; (b) to offer programs of instruction in a comprehensive range of liberal, general, specialized, and international studies; and (c) to provide the facilities, resources, and environmental conditions that promote critical thinking and analytical problem-solving. If the University has a single, overriding reason for being, it is learning, a cooperative human endeavor that encompasses teaching, research, and service and that involves the entire University community.

The University's role and responsibilities in formal classroom instruction are complemented by co-curricular programs and activities that foster the personal, social, and intellectual development of its students and its other constituencies. The University offers programs and services related to housing, health, admissions, recreation, counseling, career placement, student organizations, and activities for minority and international students. Such activities, which contribute to the development of personal and interpersonal competence, enrich students' campus experiences and thereby help prepare them to lead useful, productive, and satisfying lives.

Research and Scholarship

As a major graduate/research institution, The University of Georgia engages in research and scholarly inquiry within most recognized fields of advanced or specialized study. To contribute to a better understanding of our world, to preserve our environmental heritage, and to educate and prepare future generations of scientists and scholars, the University uses its resources and expertise in the investigation of problems related to all areas of human endeavor. To preserve the intellectual and cultural heritages of the region and the nation, the University assumes responsibility for the preservation, maintenance, and expansion of collections in its

libraries and museums. To advance knowledge through the arts, the University encourages and supports student and faculty creativity in music, drama, poetry, fiction, dance, and the visual arts. The University also encourages international communication and collaboration in research and other scholarly endeavors. The continuing vitality of the University's programs of instruction, with the many services to constituencies, depends upon this strong commitment to scholarship and to basic and applied research in diverse academic disciplines.

Public Service

The University's public service mission is a commitment to the citizens of Georgia and to the broader communities of the nation and the world. The University brings its scientific, scholarly, and technological expertise to bear on societal problem-solving, economic development, and cultural advancement. The University's cooperative extension, in-service, and continuing education programs help citizens to develop the knowledge and skills they need to improve their work, their personal lives, and their communities. Through its institutes, centers, and other service programs, the University provides professional and technical assistance to state and local governments, business corporations, small businesses, and civic or community organizations. And by supporting the involvement of individual faculty members in national and international organizations, the University assists others in solving problems of common concern to the nation and to humankind. In its service mission the University has many responsibilities for leadership in the formation and implementation of public policies that affect the quality of life. The University thus strives to interpret and respond to political, economic, and technological developments in society.

"To teach, to serve, and to inquire into the nature of things" is the University's motto. The conservation and enhancement of the state's and the nation's intellectual, cultural, and environmental heritage is inherent in the advancement, dissemination, and application of knowledge and is essential to the University's role as an institution of higher learning. In keeping with its interdependent missions in instruction, research and scholarly inquiry, and public service, the University dedicates its resources and talents to cultural innovation and progress.

Accreditation

The University of Georgia is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools to award associate, bachelor's, master's, the Specialist in Education, and doctoral degrees. In addition, a number of the University's 13 colleges and schools are further accredited by appropriate educational associations.

Admission

Correspondence concerning admission to the Graduate School should be addressed to the Office of Graduate Admissions, The University of Georgia, Athens, Georgia 30602-7402. Inquiries about facilities for advanced study and research, programs of study, and specific departmental requirements should be addressed to the appropriate department.

Requirements

Persons holding a bachelor's degree from any institution accredited by the proper regional accrediting association are eligible to apply for admission to the Graduate School. Applicants should have ranked in the upper half of their undergraduate class and should have completed the equivalent of an undergraduate major in the field in which they propose to study. Applicants are responsible for providing for the submission of all application materials required for admission. These items include but are not limited to: the general application for admission, a \$30 application-processing fee, transcripts, entrance test scores, letters of recommendation, and any supplemental material required by the department. The application-processing fee is non-refundable and will not be credited toward the matriculation fee. Materials submitted in support of an application will not be returned.

Applications and supporting credentials from domestic students must be received in the Office of Graduate Admissions by the following deadlines: Fall quarter, August 1; Winter quarter, November 15; Spring quarter, February 15; and Summer quarter, May 1. Applicants are urged to apply as early as possible up to one year in advance of the desired matriculation date. All applicants should consult with the graduate coordinator

of the specific program for which they are making application to ascertain if the program adheres to an earlier application deadline. For information concerning deadlines for international applications, refer to the section entitled International Applicants.

Each completed application, with supporting materials, is referred to the department in which the applicant proposes to study, where it is considered by the faculty of that department. No applicant will be admitted without the recommendation of an academic unit. Final consideration is given by the dean of the Graduate School. Denial of admission may be appealed according to the policy outlined in the section entitled Appeals.

Applicants may not register unless they have been notified of their acceptance to the Graduate School by the Office of Graduate Admissions. All students must be admitted prior to their registration.

An applicant is admitted for a specific quarter. Admission is valid only when the person registers for the specified quarter. The applicant, however, may request the Office of Graduate Admissions to defer his/her registration to another quarter provided that the application has not been on file for longer than six months. If the application has been on file longer than six months, a new application must be submitted.

Entrance Tests

Entrance test scores appropriate for each application must be sent to the Office of Graduate Admissions directly by the responsible testing agency. All test scores are subject to a five-year time limitation.

Scores on the verbal and quantitative sections of the General Test of the Graduate Record Examinations (GRE) are required for admission as a prospective candidate for most graduate degrees. The Miller Analogies Test (MAT) may be used in lieu of scores on the GRE for admission to most Master of Education and Specialist in Education degree programs. The GMAT is required for applicants seeking admission as prospective candidates for the Master of Business Administration and the Master of Accountancy degrees. Applicants for the Master of Marketing Research degree may submit either the GMAT or the GRE. The Master of Arts and Doctor of Philosophy programs in business administration accept the GMAT or the GRE. The Master of Arts and Doctor of Philosophy

programs in economics require the GRE. In all cases, applicants should consult the departments for specific information.

The Graduate Record Examinations and the Graduate Management Admission Test are offered several times a year at numerous testing centers in the United States and abroad. Advance registration is required. Registration forms and detailed information on the availability and character of each examination may be obtained from the Office of Graduate Admissions or by writing to the Educational Testing Service, Princeton, New Jersey 08541-6000. The Miller Analogies Test is given at various colleges and universities as approved by The Psychological Corporation. Residents of Georgia must take the MAT at a testing center in Georgia. For information concerning the test as given at The University of Georgia, contact the Office of Testing and Evaluation, Clark Howell Hall, (706) 542-3183. For information concerning other approved testing centers, contact The Psychological Corporation, 555 Academic Court, San Antonio, Texas 78204-2498.

Retention of Records

Applications and supporting documents for those who were denied admission, who were accepted but failed to matriculate, or who did not complete the application procedure are retained in the Office of Graduate Admissions for a period of one year, after which they are discarded.

Applications submitted without the application fee are not processed. Such applications are retained for one year. Transcripts, test scores, and any other information submitted without an application are retained for a period of one year.

Immunization Requirements

All new students attending University System of Georgia institutions must show proof of immunization for measles, mumps, and rubella. Immunity may be verified by proof of (a) having had the disease, (b) having had the required immunizations, or (c) having had laboratory evidence of immune titer. In compliance with this policy, all new students must complete a University Health Service Report of Medical History form which will be sent by the Office of Graduate Admissions at the time of acceptance. This form should be returned to the Gilbert Health Center at least two weeks prior to registration. Questions

related to the certificate of immunization and/or the immunization policy should be directed to: University Health Services, Gilbert Health Center, The University of Georgia, Athens, GA 30602-1755; telephone (706) 542-1162.

International Applicants

Since several months may be required to process an application from abroad, foreign nationals are urged to submit complete application materials as early as possible, but no more than one year in advance. The application must include the application form, two official transcripts from all colleges and universities attended, two official copies of test scores on an approved entrance test, a \$30 non-refundable application fee, and three letters of recommendation. Recommendations from teachers who are familiar with higher education programs in the United States are advantageous. International applicants, for whom English is not their native tongue, must submit Test of English as a Foreign Language (TOEFL) scores in addition to scores on an approved entrance examination. The application of a student from abroad, complete with supporting materials, must be in the Office of Graduate Admissions by the following deadlines: Fall quarter, June 15; Winter quarter, October 15; Spring quarter, January 1; Summer quarter, March 15. Departments may have earlier application deadlines which take precedence over those established by the Graduate School. Applicants should consult the departments for their specific deadlines.

Application for Readmission

A student who has been out of school four or more quarters, including the summer quarter, and is reapplying for the same degree must submit an application for readmission to the Office of Graduate Admissions. Note: Students who have not enrolled during the previous six years must submit an application for admission.

A student who has completed a graduate degree, and is applying for a second graduate degree, must submit an application for admission to the Office of Graduate Admissions.

A student who is not currently enrolled and wishes to apply for a degree program *different* from that for which originally admitted must submit an application for admission to the Office of Graduate Admissions.

A currently enrolled student applying for a second graduate degree must submit an application for admission to the Office of Graduate Admissions.

Applications for admission or readmission must be submitted by the established deadlines.

Change of Degree Objective

A student wishing to change his or her degree objective may do so with the approval of the departmental graduate coordinator and the dean of the Graduate School. A form requesting a change in degree objective may be submitted to the Graduate School if a student has registration eligibility and is 1) changing from provisional admission status to the status of a prospective candidate for a degree within the same department; 2) changing from one degree objective to another degree objective within the same department; and/or 3) changing from one major to another within the same department.

A nondegree student or a transient student is not eligible to request a change of degree objective and must apply for admission to be considered for a graduate degree program. A currently enrolled student wishing to change from one degree and department/college to another degree and department/college must apply for admission to the new department/college.

Classification of Graduate Students

At the discretion of individual schools or departments and with the approval of the dean of the Graduate School, applicants may be considered for admission to one of the following classifications:

1. *Prospective candidate for a degree.* Applicants who meet all requirements for admission to a degree program may apply as prospective candidates for a graduate degree. Applicants must submit the following to the Office of Graduate Admissions: the general application for admission, a \$30 application-processing fee, two official copies of transcripts from each institution attended, except The University of Georgia, and two copies of official entrance test scores. Applicants also must submit three letters of recommendation directly to the department to which they are applying, as well as any supplemental information required by the

department. Applicants are responsible for contacting the departmental graduate coordinator for information regarding any special requirements and any supplemental material which may be needed.

Applicants upon whom some condition has been placed by the major department and/or the Graduate School may be admitted provisionally to a degree program if recommended by the department and approved by the graduate dean. Applicants for the Specialist in Education degree are not eligible for provisional admission.

2. *Nondegree (ND)*. Applicants who do not intend to pursue a degree but who wish to take courses for professional advancement, licensure, or certification purposes, and who hold a baccalaureate degree or higher degree from a regionally accredited institution, should apply for nondegree status. Applicants must submit the following to the Office of Graduate Admissions: the general application for admission, a \$30 application-processing fee, two official copies of transcripts from the institution which awarded the highest degree, and a statement of purpose. Applicants are responsible for contacting the departmental graduate coordinator for information regarding any special requirements or supplemental material which may be needed.

Nondegree students who are later admitted as prospective degree candidates may apply a maximum of 15 hours of course work taken in nondegree status toward a graduate degree program. The inclusion of such course work on a program of study is subject to the approval of the major professor, the departmental graduate coordinator, and the dean of the Graduate School. Courses taken in the nondegree status may not be included on a program of study for the Specialist in Education degree.

3. *Graduate Transient (TRANS)*. Transient admission may be granted to students in good standing at regionally accredited graduate schools who wish to enroll for one quarter at the The University of Georgia. Applicants requesting this status must submit the following to the Office of Graduate Admissions: the general application for admission, a \$30 application-processing fee, and certification of graduate standing in a regionally accredited institution. Additional information may be required by departments for admission to this classification; therefore, applicants should contact the appropri-

ate department. Students admitted in this classification who later wish to enroll as prospective candidates for a degree must make formal application to the Graduate School as described in item 1 above.

Admission and Registration of Persons 62 Years of Age or Older

According to the provisions of an amendment to the Constitution of the State of Georgia, senior citizens who are residents of Georgia now have access to institutional services available through University System units at reduced cost. The rules adopted by the Board of Regents regarding admission and registration of persons 62 years of age or older in units of the University System are listed below:

1. Current or prospective students must be residents of Georgia, 62 years of age or older at the time of registration, and must present a birth certificate or other comparable written documentation of age to enable the registrar to determine eligibility.

2. Persons who have been accepted through regular admission procedures may enroll as regular students in courses offered for resident credit on a space available basis without payment of fees, other than supply, laboratory, shop, and transportation charges.

3. Prospective students must meet all system and institutional admission requirements to include official transcripts of all high school and/or college credit; entrance test scores, i.e., SAT, GRE, GMAT, etc.; letters of recommendation, and/or other materials as may be required.

4. Students will be provided access to all services available at any particular system unit which are applicable to the creation and maintenance of student and institutional records.

5. All degree-seeking students must meet all system, institutional, and legislated degree requirements such as the Regents' Test, major area examinations, preliminary and final oral and/or written examinations, and acceptable theses or dissertations.

6. Students may not enroll in dental, medical, veterinary, or law schools under the provisions of this policy.

The aforementioned rules became effective Fall quarter, 1977.

Registration

A graduate student using University facilities and/or staff time must register for a minimum of five hours of credit each quarter. A student who holds an assistantship that requires from one-third to one-half time service must register for a minimum of 10 hours of credit each quarter. A student who holds an assistantship requiring more than one-half time service must register for a minimum of five quarter hours of credit.

Complete registration instructions are included in The University of Georgia Schedule of Classes for each quarter. The Schedule of Classes is available in the Office of the Registrar, departmental offices, and deans' offices the first week of the quarter preceding the quarter the student plans to register.

Course Load

A full-time course load is 10 hours per quarter during the academic year and 8 hours during the summer session. The minimum/maximum course load for which a graduate student may enroll is governed by the following:

	Course Load (Qtr. Hrs.)	
	Minimum	Maximum
Students who do not have an assistantship	5	17
Graduate Assistants:		
One-third (1/3) time	10	12
Four-ninths (4/9) time	10	12
One-half (1/2) time	10	12
Two-thirds (2/3) time	5	6
Full-time employees of The University of Georgia	5	6

To exceed the maximum course load, a student must obtain approval from his/her major professor and the dean of the Graduate School. The department head or the departmental graduate coordinator may sign the overload request in the absence of the student's major professor.

Generally, a request to exceed the maximum course load will not be approved unless the student satisfies the following guidelines: (1) is a prospective candidate (or candidate) for a graduate degree, (2) has a cumulative graduate average of 3.5 or higher, (3) has no incompletes on his/ her graduate record, and (4) is not a first-quarter student. A full-time University employee must obtain written approval for an overload from his/her

immediate supervisor and the dean of the Graduate School.

The maximum course load for an eight-week summer session is 16 hours. As a rule, permission to exceed the maximum course load is not granted during the summer session.

Course Numbers

Courses numbered 800-999, taught by members of the graduate faculty, are advanced graduate courses and seminars which provide educational experiences at the highest level in a graduate student's program of study. Courses numbered 600-699 are fundamental knowledge courses; those numbered 700-799, except master's research (700M) and thesis (730M), are technique and professional courses. Courses numbered 600-799 are normally taken early in the graduate student's program of study. Joint undergraduate/graduate courses, numbered 400-499/600-699 and 500-599/ 700-799, in which undergraduate and graduate students are simultaneously enrolled are not normally used to provide the core requirements of a graduate degree program. Such courses may be used as electives and as service courses taken in other departments.

Enrollment in Graduate Courses—Law/Undergraduate Students

Students enrolled in the School of Law, who hold a bachelor's degree from an accredited university/college and who are in good standing, may enroll in graduate courses with approval of their advisor and the dean of the Graduate School. An approval form may be obtained in the School of Law.

Undergraduate students in good standing who are participating in the Honors Program may register for graduate courses with approval of their advisor and the dean of the Graduate School. An approval form may be obtained in the Honors Program Office.

Undergraduate students, having received prior approval, may enroll for up to ten quarter hours of credit to be included in a graduate program of study if they are within five hours of completing requirements for the undergraduate degree. They may enroll for five hours of such credit if they are within ten hours of completing degree requirements. This credit must be in courses numbered 400-599 which also have 600-799 listings. If

work in the 400-599 numbered courses is satisfactory, credit at the graduate level will be granted after admission and registration in the Graduate School of The University of Georgia. A form to request prior approval may be obtained in the Graduate School.

Irregular Students

A student registered in the University as an irregular student cannot register for graduate courses. Course work taken in this classification cannot be counted for credit toward any graduate degree.

Grade Reporting System

The grade scale for graduate students is as follows:

- A Excellent
- B Good
- C Satisfactory
- D Passing
- F Failure

WF This designation indicates that the student was permitted to withdraw from a course while doing unsatisfactory work or withdrew after the midpoint of the grading period. The dropping of a course under these circumstances is equivalent to a failure. The symbol **W** will be assigned for withdrawals after the midpoint of a grading period in cases of a hardship. A determination that a hardship exists must be made by the Office of the Vice President for Student Affairs and communicated to the Graduate School.

S This symbol indicates that credit has been given for completion of degree requirements other than academic course work. The grade of **S** must be assigned in thesis and dissertation courses (730M, 930D), where student performance or progress is satisfactory. The use of this symbol is approved for seminars, applied projects (765), problems (921), internships, practicums, and research courses. Credit earned with an **S** grade will become part of cumulative hours earned, but the grade will not be included in the calculation of academic averages.

U This symbol indicates unsatisfactory performance or progress in an attempt

to complete degree requirements other than academic course work. The grade of **U** must be assigned in thesis and dissertation courses (730M, 930D), where student performance or progress is unsatisfactory. The use of this symbol has been approved for seminars, applied projects (765), problems (921), internships, practicums, and research courses. No credit is earned by a **U** grade. The grade is not included in the calculation of academic averages.

Once earned and recorded, a **U** grade cannot be changed to another grade. The grade of **U** is not acceptable as a terminal grade for thesis, problem, and dissertation courses.

A/S This symbol indicates that both **A-F** and **S/U** grading systems are permitted in a course. Such courses are identified in their course description and are limited in number. The instructor should explain the conditions for the use of both grading systems at the beginning of the course.

If a student does not receive a grade in a course for which he/she enrolled, one of the following designations must be placed on the student's record:

I This letter indicates that a student was doing satisfactory work, but for non-academic reasons beyond his/her control, was unable to meet full requirements of the course. When an incomplete is not removed after three quarters, the **I** automatically becomes an **F**.

W This designation indicates that the student was permitted to withdraw from a course without penalty. Withdrawals without penalty will not be permitted after the midpoint of the total grading period except in cases of hardship. A determination that a hardship exists must be made by the Office of the Vice President for Student Affairs and communicated to the Graduate School.

V This designation indicates an audit. No credit is given for an audit. Students may not transfer from audit to credit status or vice versa after the closing of the drop/add period of each quarter.

ER This symbol indicates an error in reporting. If not removed after one quarter, the ER becomes a grade of WF. Upon receiving a grade of ER, the student should consult with the course instructor.

All grade appeals must be initiated within one calendar year from the end of the term in which the grade was recorded.

For purposes of computing quarterly, yearly, and cumulative grade point averages, letter grades must be converted into numerical equivalents. The equivalents are:

A	4.0	WF	0
B	3.0	I	*
C	2.0	S	*
D	1.0	U	*
F	0	V	*

Special Instructional Programs

Combined Degree Programs

The Graduate School offers certain combined degrees with other schools and colleges in the University.

Selected students in the College of Arts and Sciences may be eligible for completion of combined AB and MA or BS and MS programs in a four-year period. Students in the College may also be allowed to complete AB and MBA or BS and MBA programs in five years. Students interested in these degree objectives should contact the University Honors Program.

Certain students in the College of Family and Consumer Sciences may be eligible to pursue the combined degrees of BSHE and MBA; in the College of Journalism and Mass Communication students may be allowed to pursue combined programs leading to the ABJ and MBA degrees; and in the Terry College of Business students may be eligible to pursue combined programs leading to the BBA and MAcc degrees. All of these combined degree programs are designed to be completed in five years.

Students interested in the JD and MBA or JD and MAcc four-year combined degree programs should contact the School of Law and the Terry College of Business.

Selected pharmacy students may enter a combined degree program in which they receive the BS degree in pharmacy at the end of their third professional year and the MS degree in pharmacy at the end of one additional year.

Study Abroad/Exchange Programs

The various schools/colleges and departments of the University sponsor a number of study abroad programs. These include study in such countries as Belgium (international law), Italy (art, classics, Romance languages, journalism, drama, and landscape architecture), England (international business and British history, politics, literature, and culture), Brazil (Romance languages), and France (international business). Other opportunities for study overseas are available through the University System of Georgia institutions, through programs offered by other educational institutions, and through UGA exchange programs in Argentina, France, England, the Netherlands, and Germany.

A student should receive verification in writing from the major professor, graduate coordinator, and dean of the Graduate School that credit earned through a study abroad or exchange program may be applied to the program of study for the graduate degree. Students should also complete a Study Abroad Credit Approval Form, especially if they wish to apply student financial aid funds toward study abroad. This form may be obtained from the International Services and Programs Office.

If the study abroad or exchange program offers courses through UGA inservice/off-campus credit, the credit earned will be recorded as resident credit, otherwise the credit earned will be recorded as transfer credit. Students are advised to contact the Graduate School about policies related to transfer credit.

To explore the many programs for study, work, research, travel, internships, teaching, and/or volunteering overseas, contact International Services and Programs, The University of Georgia, 210 Memorial Hall, Athens, Georgia 30602-3108, (706) 542-1557.

*Not computed

Cortona Program

The University of Georgia sponsors an interdisciplinary study abroad program for the spring, summer, and fall quarters located in Cortona (Tuscany), Italy. The areas of study are art history, studio arts (book arts, ceramics, drawing, fabric design (tapestry), interior design, jewelry and metalsmithing, painting, papermaking, photography, printmaking, sculpture, and watercolor), landscape architecture, and beginning Italian. Extensive travel to major sites (Rome, Pompeii, Siena, Urbino, Florence, Venice, etc.) are part of the itinerary. The ten-week program offers courses for undergraduate and graduate credit.

For more information concerning this program, contact Studies Abroad Cortona Program, School of Art, Bishop House, Room #1, (706) 542-7011.

Volcani Program for Graduate Students from the College of Agricultural and Environmental Sciences

A 1987 agreement between The University of Georgia and the Israeli Agricultural Research Organization, Volcani Center, provides for cooperative educational and research activities in the agricultural sciences and related topics. Graduate studies are available to University of Georgia students interested in conducting research in arid and semi-arid zones, leading to an advanced degree; to Israeli graduate students and to candidates from developing countries interested in international training, experience in Israel and a graduate degree from the University.

Cooperative Education

Cooperative Education (Co-op) is a structured educational plan alternating periods of work with periods of academic study. Cooperative Education helps students to relate career and academic goals and to develop skills systematically in both areas. Employment is salaried, related to the field of study, regular, continuing, increasing in difficulty and responsibility, and usually paralleling the academic curriculum.

University of Georgia cooperative education takes place in a variety of business, industrial, and federal government settings

in many states throughout the country. Opportunities are available to graduate students at the master's level in a variety of academic fields. For information, write the Career Planning and Placement Center, Clark Howell Hall, or call (706) 542-3375.

Advanced Placement Program for Teachers

This program is for high school teachers who are teaching or are planning to teach high school Advanced Placement (AP) courses. Three hours of graduate or undergraduate credit in the specific subject area will be offered for each course. All of the AP courses will be offered by the appropriate departments in the College of Arts and Sciences as part of an annual two-week summer AP institute, held approximately two weeks after the spring term is over for the public schools.

When faculty are available and there is sufficient demand, courses in the following subject areas will be offered: biology (BIO 510P/710P), calculus (MAT 507P/707P), chemistry (CHM 502P/702P), computer science (CS 500P/700P), English (ENG 590P/790P), history (HIS 590P/790P), Latin (LAT 519P/719P), and Spanish (SP 590P/790P). Faculty for AP institutes are selected from members of the University's faculty who are nationally recognized scholars in their field and thoroughly familiar with the College Board's Advanced Placement Program. Registration is exclusive through in-service on the first day of class. Students should not go through regular campus registration. All students taking these courses must be admitted to The University of Georgia. For more information, contact the Office of Special Academic Programs, Room 209, Biological Sciences Building, The University of Georgia, Athens, Georgia 30602-2609, or call (706) 542-7623.

Academic Regulations and Procedures

Statements set forth in this bulletin are for informational purposes only and should not be construed as the basis of a contract between a student and the institution. While every effort is made to provide accurate and current information, the University reserves the right to change, without notice, statements in the bulletin concerning rules, poli-

cies, fees, curricula, courses, calendar, or other matters. Students enrolled at the University agree to comply with the University's rules and regulations and to accommodate to any changes necessary.

Students have the responsibility for keeping themselves apprised of current graduation requirements for their particular degree program.

Use of Credit

Course and resident credit used to satisfy the requirements of one degree cannot be used to satisfy the requirements of another degree.

Cumulative Graduate Average

To be eligible for admission to candidacy and graduation, a student must maintain an average of 3.0 (B) on all graduate courses taken and on all courses on the program of study. No grade below C (2.0) will be accepted as part of a program of study for a graduate degree.

When a graduate course is repeated, the last grade received will be used in calculating the cumulative graduate average that is used for probation, dismissal, admission to candidacy, and graduation. Grades received in all graduate courses will be included in the graduate cumulative average.

Extension and Correspondence

Graduate credit is not allowed for work done in extension or by correspondence.

Resident Credit in Graduate Centers

I. For course work leading to a professional master's degree, credit on a resident basis will be granted for graduate courses taken at a graduate center approved by the Board of Regents, provided:

1. the student has been admitted to the Graduate School of The University of Georgia prior to taking the course;
2. the physical facilities such as classrooms, library, and teaching aids are adequate as determined by a site visit of at least three persons, one appointed by the dean of the school or college offering the course, one appointed by the Director of Libraries, and one appointed by the dean of the Graduate School; and

3. the instructor is the same one who teaches the course on campus, or is approved by the dean of the school or college offering the course and the dean of the Graduate School.

II. Resident credit will be granted for course work or research leading to degrees other than professional master's degrees offered at off-campus locations provided:

1. the student has been admitted to the Graduate School prior to taking the course;
2. the requirement of three consecutive quarters of full-time work on campus in Athens for all doctoral students is satisfied;
3. the requirement of three quarters of full-time work on campus in Athens (which need not be consecutive) is, in general, satisfied for all candidates for MA and MS degrees. An exception to the above may be made for students who prefer to spend one quarter of full-time work abroad in a program of study approved by The University of Georgia or the Board of Regents. Such study shall be counted as resident credit; and
4. the instructor is the same one who teaches the course or directs the research on campus, or is approved by the dean of the school or college offering the work and the dean of the Graduate School.

III. Residence or nonresidence credit for Studies Abroad is determined by the department from which a student is seeking a degree.

Application for Graduation

An application for graduation must be filed with the Graduate School no later than Friday of the first full week of classes two quarters prior to the anticipated graduation date. Application forms may be obtained from the Graduate School. Candidates for graduate degrees should check periodically with the Graduate School concerning dates for filing applications as these dates and fees are subject to change.

Final Registration Requirement

Students must be registered at The University of Georgia for a minimum of five hours of credit the quarter in which they complete all degree requirements. Once degree requirements have been completed, no further reg-

istration is required, even if the official graduation date is in a following quarter.

A graduate course, GSC 927 (Graduate Study Completion), is designed for students completing degree requirements who will be using staff time or University facilities and for whom no regular course is appropriate. Permission to register for this course must be granted by the Graduate School.

Students will not be approved for graduation if they have a grade of I or ER which, when changed to a recorded grade, could cause the graduate grade point average to fall below the minimum required for graduation.

Graduation Exercises

Formal commencement exercises are held only at the June graduation. Students who graduated in August, December, or March may participate in the June commencement exercises if they wish to do so. Candidates for degrees are urged to attend graduation exercises, but they are not required to attend.

Awarding Doctoral Degrees— University Faculty

No member of the faculty of The University of Georgia above the rank of instructor will be awarded a doctoral degree by the University.

Probation and Dismissal

Students may be dismissed by their department at the end of any quarter if they have not made sufficient academic progress to warrant continuance of study. Termination of students will follow policies and procedures adopted by the department. Dismissal by an academic department may be appealed to the dean of the Graduate School after all avenues of appeal have been exhausted at the departmental level. When students are terminated by a department, but not simultaneously by the Graduate School, they may apply for admission to another graduate program if they wish to do so.

Students with a cumulative graduate course average below 3.0 for two consecutive quarters are placed on academic probation by the Graduate School. They then must make a 3.0 or higher quarterly graduate average each succeeding quarter that their overall cumulative graduate average is below 3.0. These students are no longer on

probation when their cumulative graduate average is 3.0 or above. If they make below a 3.0 quarterly graduate average while on probation, they are dismissed. When students repeat a graduate course, the last grade will be utilized to calculate the cumulative graduate average that is used for probation, dismissal, admission to candidacy and graduation. Grades of S, U, I, and V will not be used in calculating the cumulative graduate average. When students are dismissed under the terms of this policy, they may not apply for admission to another graduate program offered by the University.

Students who are dismissed by the Graduate School for academic reasons may appeal the dismissal to the dean of the Graduate School. The appeal must be submitted to the dean within 10 working days following receipt of notice of dismissal. Information concerning the appeal process may be obtained in the Graduate School.

Appeals

University of Georgia students have the right to appeal academic decisions. Usually the appeal goes first to the unit responsible for the decision (for example, grades or departmental requirements to the department; college or school requirements to the school; university requirements to the Educational Affairs Committee). An unfavorable ruling at one level can be appealed to the successive levels (viz. a department ruling can be appealed to the college in which the institutional unit is located; a college-level ruling can be appealed to the University Council Educational Affairs Committee; the Educational Affairs Committee ruling can be appealed to the President of the University; and the President's ruling can be appealed to the Board of Regents). Additional details on appeals of academic matters can be obtained from the Office of Academic Affairs, 110 Old College, telephone (706) 542-8947. Policies regarding appeals in the Graduate School may be obtained from the Office of the Dean, Room 516, Boyd Graduate Studies Research Center, or by phoning (706) 542-4795.

Student Education Records

The University of Georgia guarantees any student, regardless of age, who is or has been in attendance at the University the right of access to inspect and review any and all

official records, files, documents, and other materials created during the period of enrollment which relate directly to him or her, subject only to certain specific exceptions. Each student is guaranteed an opportunity to challenge the accuracy of information contained in any file or record to which he or she may have access, including the right to a hearing if so requested.

With limited exceptions, including “directory information,” no personally identifiable information from the education records of a student will be disclosed to any third party by any official or employee of the University without the written consent of the student or as required by law. “Directory information” includes the student’s name, address, telephone listing, date and place of birth, major field of study, participation in officially recognized activities and sports, dates of attendance, degrees and awards received, and the most recent previous educational agency or institution attended by the student, as well as the weight and height of members of athletic teams. A student has the right to prohibit the release of his or her own “directory information” by so advising the registrar in writing.

Each student also has the right to file a complaint directly with the United States Department of Education whenever the student believes that the rights afforded him or her by the University policy or the Family Educational Rights and Privacy Act have been violated.

Copies of the complete University policy statement on student education records may be obtained at the Registrar’s Office.

Academic Honesty

Academic integrity is an adherence to a high standard of values regarding life and work in an academic community. Pursuit of knowledge and the creation of an atmosphere conducive to learning are both definite aspects of academic integrity, but its basis lies in the standard of honesty.

Students at The University of Georgia are responsible for maintaining and adhering to the strictest standards of honesty and integrity in every aspect of their lives. Honesty in academic matters is a large part of this obligation. Specific regulations governing student academic conduct are contained in the Student Handbook, and these should be read to avoid any misunderstanding.

Students and faculty who suspect that an act of academic dishonesty has taken place should contact the Office of the Vice President for Academic Affairs.

Research with Human Participants

As a matter of University policy, research projects involving human participants must not be carried out until an application describing the project has been submitted and approved by the Institutional Review Board in the Office of the Vice President for Research. This policy applies to all research, regardless of whether internal, external, or no funding is involved. Failure to obtain this approval for research is a violation of University and federal regulations. Human participation is considered to be involved any time data are collected on individuals even if there is no contact with the participants. The policy extends to all projects involving faculty, staff, students, or facilities of the University, including research performed by students as part of their degree or class requirements. The major professor is responsible for seeing that student projects are approved. Approval is necessary for any type of research in any area of study. Some, but not all, examples include marketing research, behavioral or psychological studies, research involving children in classrooms, and on-the-street interviews.

The detailed guidelines of this policy and the application forms necessary to obtain approval of a research protocol are available in the Office of the Vice President for Research, 604A, Graduate Studies Research Center. Questions concerning these guidelines may be directed to that office at (706) 542-3199. Projects involving no risk to subjects can usually be approved expeditiously, but it is recommended that the forms be submitted well in advance of beginning the research and, if applicable, prior to submitting a proposal for external funding.

Student Services

Housing

Although graduate students reside in any of the residence halls, most prefer to live in Morris, Mary Lyndon, and Rutherford Halls, each are air-conditioned and are open for occupancy throughout the calendar year.

Morris Hall houses 139 male students and is located on north campus near the Terry College of Business and the School of Law. Mary Lyndon houses 121 female students, while Rutherford houses 153 female students. Snelling Dining Hall, the College of Family and Consumer Sciences, the Science Center, and the College of Education are located nearby. Cable TV service and local telephone service are provided to each room in all residence halls. Applications for on-campus housing will be accepted after students have been admitted to the University. Contact the Department of University Housing, Russell Hall, The University of Georgia, Athens, Georgia 30602-5575, (706) 542-1421, for additional information.

Five hundred seventy-nine one- and two-bedroom furnished and unfurnished apartments are available for families in the on-campus family housing complex. Applications and additional information may be obtained by writing or calling the Family Housing Office, The University of Georgia, 710 East Campus Road, Athens, Georgia 30602-4622, (706) 542-1473.

Food Services

University Food Services operates four food service facilities for general student use: Bolton Hall, Oglethorpe Hall, Snelling Hall, and the Tate Student Center. With the exception of the Tate Student Center, which operates under a cash only policy, students may pay for each meal on a cash basis or may purchase meal plans on an academic year contract basis. Students who purchase the meal plan enjoy the privilege of unlimited access and unlimited servings as well as the choice of eating in any of the cafeterias. Students are also eligible to participate in special events offered by Food Services. In addition to the major facilities, Food Services provides various cash food outlets throughout the campus. For further information, write the Food Services Business Office, Snelling Hall, Athens, Georgia 30602-3772, or call (706) 542-1256.

Transportation

The Campus Transit System, which is funded by a quarterly transportation fee paid by all students, provides bus service on a no-fare basis. The buses run on a regular schedule to all parts of the campus and in adjacent residential areas. Furthermore, the City of

Athens and The University of Georgia have an arrangement that permits students to ride any Athens Transit System bus without charge upon presentation of University of Georgia identification card. The transportation fee includes a parking permit. All students are allowed to register cars on campus.

University Health Service

Before their arrival on campus, students must complete and return to the Gilbert Health Center the University Health Service Report of Medical History which includes a record of their immunizations. Students may not register for classes without documentation for the immunization requirements for new students mandated by the Board of Regents.

The Gilbert Health Center offers a comprehensive outpatient health care program to all students who are registered in classes. The Health Center, with its 13 full-time physicians and a complete clinical staff, has regular medical clinics as well as special clinics in acute care, women's health, dentistry, sports medicine, physical therapy, and allergy and travel medicine. Additionally, the Department of Health Promotion offers students preventive health and counseling programs in areas that include: alcohol, tobacco and other substances, campus safety, nutrition, sexual health, and stress management. The department also offers an anonymous HIV counseling and testing program. The mental health clinic offers individual, couples, and group therapy, a comprehensive eating disorders program, a relaxation therapy training room, and consultation, evaluation, and testing services. Supplemental health insurance is available to help cover costs of medical emergencies away from campus or beyond the scope of care available at the Health Center. For more information, write the Gilbert Health Center, The University of Georgia, Athens, Georgia 30602-1755, or call (706) 542-1162.

Career Planning and Placement

The Office of Career Planning and Placement in Clark Howell Hall assists students in exploring career opportunities and in formulating a job search campaign. It offers a comprehensive placement service, including campus interviews with prospective employers, job vacancy listings and referrals, credentials files, and continuing career coun-

selling for students and alumni. In conjunction with these efforts, schools and departments have their own services which put students in touch with prospective employers in specific fields of study.

Students who do not receive assistantship support may contact the Student Employment Service in Clark Howell Hall for help in finding part-time work on campus, employment in the Athens community, and summer or vacation work. Assistance from this office is also available in finding full-time employment for students' spouses. For information, call (706) 542-3375 or the information/job opportunity hotline (706) 542-8427.

Non-academic employment at the University is handled through the Employment and Employee Relations Department, Human Resources Building, S. Jackson Street, The University of Georgia, Athens, Georgia 30602-4135. For information, call (706) 542-2623.

Disability Services

The purpose of Disability Services is to ensure that students with disabilities have equal access to all programs and activities offered at The University of Georgia. The office seeks to eliminate both attitudinal and architectural barriers that exist on campus and serves as an advocate for students with disabilities, but also encourages students to develop independence and responsibility as they participate in university life. Disability Services provides services to students who have either a physical or mental impairment which substantially limits one or more major life activities. Examples of these disabilities include cerebral palsy, hearing impairments, psychological disorders, quadriplegia, acquired brain injuries, cardiac disease, Attention Deficit Disorder, deafness, and blindness. Students who have a verifiable disability qualify for services. To receive services, students must provide current documentation of their disability from a qualified health professional.

Services may include the following: academic accommodations, priority preregistration, weekly appointments with a DS counselor, faculty consultation, transportation services, accessible housing, orientation to campus, interpreter services, individual and group counseling, notetaker services, parking services, taped textbooks, academic advising, reader services, education and

outreach, and information and referral. State-of-the-art adaptive computer equipment and other assistive devices specifically designed for people with disabilities are available. Major equipment includes: Kurzweil personal reader, TDD, FM receivers, print enlarger, Braille printer, Braille dictionaries, Macintosh, and IBM personal computers, and computerized voice synthesis.

Disability Services is centrally located in the Tate Student Center, Room 345. For more information, call (706) 542-8719.

Campus Security

Each year The University of Georgia publishes a campus security report. This report contains information on campus safety programs as well as advice on crime prevention and the procedures to follow in reporting crimes. The report also contains statistics about crimes on campus during the last three calendar years. This report is available upon request from the Office of Graduate Admissions, The University of Georgia, Athens, Georgia 30602-7402, (706) 542-1787.

Financial Information

Expenses

Residents of Georgia pay a matriculation fee of \$2,559 per academic year of three quarters, payable \$853 at the beginning of each quarter. Nonresidents pay an additional amount of \$1,429 per quarter. Any resident student who registers for fewer than 12 quarter hours pays \$56.00 per hour plus a \$188 activity, athletic, transportation, and health fee. Any nonresident student who registers for fewer than 12 quarter hours pays \$176 per hour plus a \$188 activity, athletic, transportation, and health fee. The estimated cost of education for a Georgia resident is \$9,552 for the current academic year. This estimate includes tuition and fees, books and supplies, room and board, and personal expenses for three quarters. The additional out-of-state fee assessed all non-Georgia residents increases this estimate to \$13,350. These estimated costs do not include travel. Students who hold graduate assistantships requiring at least one-third time service pay a matriculation fee of \$75 per academic year of three quarters, payable \$25 at the beginning of each quarter. This figure is based on

the minimum registration for a graduate assistant of 10 hours each quarter. Nonresident fees are waived for these graduate assistants. Students holding graduate assistantships must also pay the activity, athletic, transportation, and health fees.

The doctoral candidate must pay a \$50 microfilm fee. All fees at the University are subject to change at any time as approved by the Board of Regents.

Agencies sponsoring regularly enrolled students who receive special academic programming or administrative services are expected to pay fees in addition to those normally charged for the usual administrative services. While rates charged will be determined by contract arrangements, the scheduled fees for such services will be \$125 per quarter, payable in U.S. dollars only.

Fee Refunds

Students who formally withdraw from the University prior to the first day of classes are entitled to a refund of 100 percent of fees paid for that quarter; within one week following the first day of classes, 80 percent; from one week to two weeks after the first day of classes, 60 percent; from two to three weeks after the first day of classes, 40 percent; from three to four weeks after the first day of classes, 20 percent. Refunds will be made at the end of a quarter. No refunds for reduction in hours after the drop/ add period are allowed unless such reduction is the fault of the University.

The following are not entitled to any refund of fees paid: students who withdraw after a period of four weeks has elapsed from the scheduled registration date; students suspended for disciplinary reasons; students who leave the University when disciplinary action is pending, or who do not formally withdraw.

Academic Common Market

The University of Georgia participates in the Academic Common Market, an agreement among states in the southern region for sharing unique academic programs. Residents of the participating states who qualify for full (unconditional) admission to the specified graduate degree program and who are approved by their state coordinator may enroll at The University of Georgia on an in-state tuition basis.

To qualify for waiver of the non-resident fee, a student must establish eligibility for participation in the Academic Common Market by the midpoint of each quarter. Eligibility is not retroactive to previous quarters.

For further information about the Academic Common Market, persons should contact the Graduate School (706) 542-4795, or the Southern Regional Education Board, 1340 Spring Street, N.W., Atlanta, Georgia 30309.

Classification of Students for Tuition Purposes

With respect to resident/nonresident student classification, University System policies provide:

1. (a) If a person is 18 years or age or older, he or she may register as an in-state student only upon a showing that he or she had been a legal resident of Georgia for a period of at least twelve months immediately preceding the date of registration.
(b) No emancipated minor or other person 18 years of age or older shall be deemed to have gained or acquired in-state status for tuition purposes while attending any educational institution in this State, in the absence of a clear demonstration that he or she has in fact established legal residence in this State.
2. If a person is under 18 years of age, he or she may register as an in-state student only upon a showing that his or her supporting parent or guardian has been a legal resident of Georgia for a period of at least twelve months immediately preceding the date of registration.
3. If a parent or legal guardian of a minor changes his or her legal residence to another state following a period of legal residence in Georgia, the minor may continue to take courses for a period of twelve consecutive months on the payment of in-state tuition. After the expiration of the twelve-month period, the student may continue his or her registration only upon the payment of fees at the out-of-state rate.
4. In the event that a legal resident of Georgia is appointed as guardian of a nonresident minor, such minor will not be permitted to register as an in-state

student until the expiration of one year from the date of court appointment, and then only upon a proper showing that such appointment was not made to avoid payment of the out-of-state fees.

5. Aliens shall be classified as nonresident students; provided, however, that an alien who is living in this country under an immigration document permitting indefinite or permanent residence shall have the same privilege of qualifying for in-state tuition as a citizen of the United States.

6. *Waivers*: An institution may waive out-of-state tuition for:

(a) nonresident students who are financially dependent upon a parent, parents, or spouse who has been a legal resident of Georgia for at least twelve consecutive months immediately preceding the date of registration; provided, however, that such financial dependence shall have existed for at least twelve consecutive months immediately preceding the date of registration;

(b) international students, selected by the institutional president or his authorized representative, provided that the number of such waivers in effect does not exceed one percent of the equivalent full-time students enrolled at the institution in the fall quarter immediately preceding the quarter for which the out-of-state tuition is to be waived;

(c) full-time employees of the University System, their spouses, and their dependent children;

(d) medical and dental residents and medical and dental interns at the Medical College of Georgia;

(e) full-time teachers in the public schools of Georgia or in the programs of the State Board of Technical and Adult Education and their dependent children. Teachers employed full-time on military bases in Georgia shall also qualify for this waiver;

(f) career consular officers and their dependents who are citizens of the foreign nation which their consular office represents, and who are stationed and living in Georgia under orders of their respective governments. This waiver shall apply only to those consular officers whose nations operate on

the principle of educational reciprocity with the United States;

(g) military personnel and their dependents stationed in Georgia and on active duty unless such military personnel are assigned as students to System institutions for educational purposes;

(h) selected graduate students at University-level institutions;

(i) students who are legal residents of out-of-state counties bordering on Georgia counties in which an institution of the University System is located and who are enrolled in said institution.

Financial Assistance and Awards

More than 2,500 graduate students receive some form of financial assistance from the University. Most of these awards are for one-third time service and require 13 hours of work per week with a required course load of at least ten credit hours. Assistantships are academic awards generally made in the Spring to begin in the Fall of the following academic year. Applicants wishing to be considered for financial assistance should ensure that their admission application file is completed early. Most assistantships carry a stipend of \$8,019 to \$8,550 for a nine-month appointment or \$10,692 to \$11,400 for a twelve-month appointment. Registration requirements and pay rates vary between academic units. Persons holding assistantships of at least one-third time pay a reduced matriculation fee of only \$25 and a modest activity fee (currently \$188) each quarter. Recipients of these awards must be fully admitted to the Graduate School in a degree-seeking status. For additional information and application procedures, contact the graduate coordinator of the department.

General University Awards

Graduate School Assistantships

The Graduate School each year selects university-wide graduate assistants from a list of highly qualified students who are nominated by their major departments. Each nominee is evaluated by a faculty panel in early March. Selections are based on the applicant's academic record, test scores, recommendations, and other pertinent information.

Predoctoral Assistantships

Predoctoral assistantships are awarded on a competitive basis to faculty members of Georgia colleges upon nomination by the president of the college in which they are teaching. The stipend is approximately \$12,000 per academic year. Recipients are expected to have no work obligation to their home institution and enroll for full-time graduate work. Nominations should be made to the Director of the Institute of Higher Education, The University of Georgia, by February 15 of each year.

Regents' Waivers of Out-of-State Tuition

The Graduate School awards out-of-state tuition waivers to students who are classified as non-residents of the State of Georgia. The awards are based upon applicants' academic records and the recommendations of their major departments. The waiver renews on a quarterly basis contingent upon recipients earning at least a 3.50 graduate grade point average on ten hours of graduate course work. These awards waive only the non-resident portion of a student's tuition. Students interested in being nominated for this award should contact the graduate coordinator in their major department.

Regents' Opportunity Scholarships

The Regents' Opportunity Scholarships were established by the Georgia General Assembly in 1978 to assist certain economically disadvantaged students who have been accepted for admission as incoming graduate or professional students enrolled in institutions of the University System. Students must be residents of the State of Georgia. The scholarships are awarded in the amount of \$5,000 per year and are renewable. Students must maintain good academic standing and full-time status. Priority is given to renewals. Application must be made by April 1. Applicants should contact the dean of the appropriate academic college/school for additional information.

Departmental Assistantships and Awards

A variety of fellowships, scholarships, and assistantships are awarded by the various departments and divisions of the University. Students who hold assistantships which require at least one-third time service pay

quarterly a matriculation fee of \$25 and a modest activity fee. Deadlines for submitting applications for departmental assistantships vary among departments. For information concerning these awards contact the appropriate department.

Teaching or Research Assistantships

These assistantships carry stipends ranging from \$3,500 to \$11,400 depending on the qualifications of the applicant, period of appointment, and the amount of work specified. Application should be made to the student's major department.

Academy of American Poets Prize

This award is given annually to a student in the Department of English whose poetry is deemed by a faculty committee to be outstanding. It is made as part of the University and College Prize Program, founded in 1955, established to encourage interest in poetry and writing among college students. At The University of Georgia, the prize is given in memory of Virginia R. Walter, an undergraduate English major from Savannah. The prize has a value of \$100.

Leonora Anderson Scholarship

This scholarship is open to both undergraduate and graduate students enrolled in the Department of Textiles, Merchandising, and Interiors in the College of Family and Consumer Sciences. Applicants must have a minimum grade point average of 3.0. A written statement about the applicant's professional goals and how the scholarship may assist in the achievement of these goals must accompany the application. The award has a value of \$500.

School of Art Scholarships

Betty Cabin Scholarship. This scholarship is designated to assist a worthy student majoring in any program of the school. In most instances, it is awarded to an undergraduate, but in exceptional cases, it may be awarded to a graduate student.

Vince Dooley Scholarship. This scholarship is awarded to assist a worthy student majoring in any program of the school. In most instances, it is awarded to an undergraduate, but in exceptional cases, it may be awarded to a graduate student.

Mary Rosenblatt Graduate Award. This scholarship was established primarily to assist students who are planning a career in

teaching; however, it is not limited to students majoring in art education.

When sufficient earnings are available in any of the scholarship funds, the school may offer more than one award.

The Dolores E. Artau Scholarship in Romance Languages

Two awards of approximately \$500 are given annually to doctoral students enrolled in the Department of Romance Languages.

Abraham Baldwin Graduate Research Fellowships

Approximately five awards per year are given to new graduate students in the Department of Chemistry with outstanding potential for research. The award includes a stipend of \$17,000 per year, and may be renewed for a second year.

The Alvin B. Biscoe Fellowship

This fellowship was established in 1967 by Mrs. Helen Biscoe in memory of her husband. Dr. Biscoe served as dean of the Terry College of Business from 1945 to 1949 and later as dean of Faculties of the University. This fellowship is awarded annually to two outstanding entering doctoral students in the Terry College of Business. Awards are based on scholastic achievements and professional potential.

Coral Jo Bishop Fellowship (The Little Red School House for Special Children, Inc.)

The purpose of this fund is to create the Coral Jo Bishop Fellowship, which shall be an annual fellowship to one or more students who are candidates for the Master of Education degree in the Department of Special Education, College of Education.

Teresa and Robert Blumberg Scholarship

This scholarship was established to recognize students for academic achievement and professional potential. The scholarship is awarded annually to an outstanding MBA assistantship recipient. The award is based on scholastic achievements and is a supplement to the assistantship stipend.

William K. Boardman Memorial Award

This award was established by Dr. Katherine B. Boardman in memory of her husband, who was Professor of Psychology. An out-

standing advanced student in the Clinical Psychology Program is selected each year. The award includes a cash prize of \$100.

Ray E. Bruce Academic Support Fund

The purpose of this fund is to provide up to four \$250 study grants each year to students who are enrolled in the Specialist in Education program in the Department of Educational Leadership to support research activities related to the applied project. Awards are made by the department head, in consultation with other faculty, on the basis of academic excellence and the promise of the study making a significant contribution to the field of education. Further information concerning procedures for application can be obtained from the Department of Educational Leadership.

James L. Carmon Scholarship

This scholarship honors the late Dr. James L. Carmon, who was assistant to the president of the university for computing activities and assistant vice chancellor for computing systems in the University System of Georgia. The Carmon Scholarship is awarded to a graduate student in the arts, humanities, or sciences whose thesis/dis/sertation research involves an innovative use of computers. The scholarship will provide a \$2,000 stipend for one academic year. Recipients of the award are eligible to apply in subsequent years. Only full-time graduate students in good standing at either the master's or doctoral level are eligible. The recipient must have completed three quarters of graduate school and have selected a thesis research project. Further information may be obtained by contacting the Office of the Vice President for Research, (706) 542-5988.

Elmer Jackson Carson Memorial Scholarship Fund

Through a gift from Mr. and Mrs. Charles Ferdinand Carson, Jr., an academic year scholarship will be awarded for graduate study in the area of reading education. The scholarship will be awarded each academic year in the amount of \$750. The award will be paid to the recipient quarterly at the beginning of each academic quarter. A letter of application, including three (3) letters of recommendation from persons who can attest to the applicant's academic potential and commitment to reading education must be submitted to the department.

Department of Chemistry—Outstanding Teaching Assistant Awards

These awards are supported by a gift from Dr. Kenneth W. Whitten. One \$500 award is available to the most outstanding first year teaching assistant, and one \$500 award is available to an outstanding teaching assistant (any year) in the Department of Chemistry.

Department of Classics—Summer Tuition Reductions and Scholarships for Latin Teachers

Limited scholarship assistance is available to Latin teachers enrolled in the department's Georgia Classics Summer Institute; in addition, teachers from out of state are awarded waivers reducing tuition for the Institute to the in-state level. Inquiries should be sent, no later than February 1, directly to the Department of Classics.

Jerome L. Clutter Memorial Fellowship

This fellowship was established in 1983 by the Clutter Family and The University of Georgia in memory of the late Dr. Jerome L. Clutter. The purpose of this fellowship is to encourage superior students to pursue a graduate program in forest biometrics or timber management. The stipend is \$5,000 for the academic year. Applications are available from the Office of the Dean, School of Forest Resources, and must be received prior to July 1.

The Edward T. Comer Fellowships

The Comer Fellowships of \$2,000 are awarded on a competitive basis to new and current PhD students in business administration. Students are nominated by their departments for these non-service fellowships, and selection is based on merit.

Thomas F. Comer Scholarship

This scholarship is available to a master's degree student who will be offered an assistantship. Applicants must have been accepted in the College of Family and Consumer Sciences, have a minimum GPA of 3.0 and have a minimum GRE score of 1000. A written statement about the applicant's professional goals and the need for financial assistance to achieve them must accompany the application. The scholarship has a value of \$500.

Charles L. Darby Award

This award is given annually for excellence in instruction to the outstanding graduate teaching assistant in the Department of Psychology.

Maurice Doan Memorial Scholarship

The Maurice Doan Memorial Scholarship was established by friends and former students of the late Maurice Doan, a University of Georgia doctoral student in Risk Management and Insurance. Up to \$500 per year can be awarded to a current Insurance doctoral student who exhibits outstanding teaching abilities and concern for students.

Dowden Center for Telecommunications Doctoral Dissertation Grant

This program is open to any student currently enrolled in a doctoral program at an accredited university or college which requires a dissertation to complete degree requirements. The program will consider research proposals dealing with the economic, social, political, legal, business, or historical aspects of cable television and other related technologies. A \$500 award will be given to defray expenses incurred while doing dissertation research. A summary of the research will be published in the *Dowden Center Journal*. Proposals must be received by May 15. Applications are available in the Graduate Studies Office, College of Journalism and Mass Communication.

A.S. Edwards Award

The student is chosen for excellence of scholarship, meritorious conduct, service to the Psychology Department, and future promise as a scholar. This award was established by The University of Georgia Chapter of Psi Chi to honor Austin Southwick Edwards, Head, Department of Psychology, 1916 to 1951. The award includes a cash prize of \$200.

Food Science and Technology Special Awards

In addition to normal graduate research and teaching assistantships, two graduate scholarships are available from the Department of Food Science and Technology. The Association of American Candy Technologists scholarship offers \$1,000-\$2,000 to students interested in a career in candy technology. Applications are due by April 1. The John J. Powers scholarships (\$1,000-\$2,000) are

for food science graduate students displaying leadership character. These applications are due April 1. Exceptional graduate students also may apply through the department head for fellowships (\$1,000-\$10,000) from the Institute of Food Technologists.

Hazel and Gene Franklin Scholarships

Two scholarships are available: one for an undergraduate, one for a graduate. Applicants must be registered in the College of Family and Consumer Sciences and have at least three quarters remaining in their degree programs. Evidence of academic excellence and professional commitment must be presented by the applicants. These scholarships have a value of \$500 each.

Gamma Iota Sigma Scholarships

Various members of the Georgia Insurance industry have contributed to the Gamma Iota Sigma Scholarship. Up to five \$600 scholarships are awarded each year. The risk management and insurance faculty, at its discretion, may supplement this scholarship for an additional \$400. The maximum award is \$1,000.

Genetics Predoctoral Training Grant, National Institutes of Health

These fellowships for graduate study in the area of genetics carry a stipend of \$10,008 for a twelve-month period and, in addition, include provisions for reimbursement of tuition and fees and certain travel expenses. Application should be made to the Graduate Coordinator, Department of Genetics.

Georgia Bankers' Association Scholarship

This scholarship was established in 1978 by the Georgia Bankers' Association to recognize academic achievement and potential in a banking career. Students holding a master's level assistantship through the Terry College of Business and specializing in the field of banking and finance are invited to apply for the \$500 scholarship. Application should be made to the Director of Graduate Programs, Terry College of Business. Selection of recipients is made by a faculty committee.

Georgia Feed and Grain Association Graduate Fellowship in Animal Nutrition

This fellowship of \$1,500 is awarded annually to a U.S. citizen who is a graduate

student in animal nutrition or in animal science, dairy science, or poultry science with a major in animal nutrition. Funds for the award are provided by the Georgia Feed and Grain Association. This nonrenewable fellowship is in addition to and independent of any other financial support.

Georgia Review Editorial Assistantship

Awarded annually to an outstanding graduate in the Department of English, this nine-month assistantship pays a monthly stipend and includes a waiver of tuition. The assistant works with the staff of the *Georgia Review* and assists in various editorial duties. One third-time service is required, with a maximum course load each quarter of 12 hours. The competition for this award occurs each winter, and the winner is selected by the editor and staff of the *Review*.

O. William Gottlieb Scholarship

This scholarship was established by O. William Gottlieb to recognize academic achievement in business administration. The scholarship is awarded annually to an MBA assistantship recipient based on scholastic achievements.

Donald L. Grant Award

This award is given annually to the graduate student chosen for the outstanding master's thesis in the applied psychology program.

The Hand Fellowship

This fellowship was established in 1982 by Mr. and Mrs. Frederick B. Hand, III. The \$1,000 fellowship is awarded annually to an outstanding entering MBA student. The student must be a recipient of a graduate assistantship.

Almonte Howell Fellowship Award

The purpose of this fund is to provide fellowship and research support to outstanding and deserving graduate students in recognition of their accomplishments in musicology and music research. Nominations are initiated by the School of Music faculty and the Almonte Howell Fellowship Committee.

Nancy Hailey Hunt and Mary Strickland Hailey Scholarship

This scholarship is available to a master's degree candidate in the College of Family and Consumer Sciences, who has a minimum of 30 quarter hours remaining to com-

plete the degree program. Preference will be given to applicants with an expressed financial need. This scholarship has a value of \$500.

Martha Jo Walker Johnson Memorial Fund

This fund was established in 1973 by Dr. Richard E. Johnson in memory of his wife. This fund is to provide one or more annual awards to graduate students majoring in social psychology who need financial assistance to complete research projects. Preference is to be given to female students, to be selected by a committee composed of the social psychology program faculty. The award includes a cash prize of \$250.

Wilbur P. Jones Scholarship

This scholarship in memory of Wilbur P. Jones is awarded yearly to one or more black students in the School of Social Work who have demonstrated academic excellence and need for financial assistance. Maximum award for a Master of Social Work student is \$750 during the first and/or sixth quarters of enrollment. Maximum award for a Bachelor of Social Work student is \$750 in either the junior or senior year of enrollment. Application should be made to Wilbur Jones Scholarship Committee, School of Social Work.

Virginia Wilbanks Kilgore Scholarships

These scholarships recognize outstanding graduate students, master's or doctoral, who are entering the College of Family and Consumer Sciences. GRE scores and cumulative average in previous work must be documented. Several scholarships are available in a given year. These scholarships have a value of \$2,000 for the first year and are renewable for a second year in the amount of \$1,000.

Rosabelle Carr Koelsche Scholarship

Two scholarships are open to both undergraduate and graduate students enrolled in the College of Family and Consumer Sciences. Undergraduate applicants should have at least 90 hours of course work remaining in which to complete their program; graduate applicants should have a minimum of 30 hours remaining. These scholarships have a value of \$500.

Leisure Careers Foundation Scholarship/Loan Program

The Leisure Careers Foundation, a non-profit organization of the Georgia Recreation and Park Association, awards low interest loans to upperclass undergraduates and graduate students who are pursuing a degree in recreation and leisure studies. Repayment of the loan is cancelled if graduates become employed in Georgia in the field of parks or recreation within one year of graduation. Applications must be full-time students who are pursuing a degree in recreation and leisure studies. Application deadline is May 15. Contact the Department of Recreation and Leisure Studies for further information.

John Sanford Levy Memorial Award in Marine Geology

A fund was established in 1980 in memory of John Sanford Levy, an outstanding graduate student in marine geology, by his wife, Elizabeth, and by his parents, Dr. and Mrs. Alvin Thomas Levy. The income from this fund is used to support graduate students in the Department of Geology in the specific area of marine sciences. In recent years, individual awards have been as much as \$1,000. Application should be made to the Department of Geology, through the Marine Geology Committee.

Pauline Lide Scholarship

This fund, established in honor of a retired associate dean, is used to provide financial aid to needy and superior graduate students in the School of Social Work. Applications should be made to the dean of the School of Social Work.

H.O. Lund Scholarship

These funds are awarded to recognize excellence in academics and research in entomology. They may include financial enhancement awards.

Marketing Research Assistantships

These assistantships are awarded annually to master's students in the marketing research program of the Department of Marketing and Distribution. The stipend is \$3,500 for the academic year. Selection of recipients is made by a marketing faculty committee.

Martha Love May Memorial Scholarship

This scholarship was established in 1986 by Professor Emeritus Jack T. May in memory of his wife. The stipend of \$1,500 is awarded annually to a female student in the School of Forest Resources. The student may be undergraduate or graduate and must have displayed outstanding scholarship in her chosen area of study. Applications must be received by March 1 in the Office of the Dean of the School of Forest Resources.

Carroll Wade McGuffey Scholarship

The purpose of the fund is to provide a scholarship to be awarded to a doctoral student(s) in educational leadership, whose studies will include research into the impact of the school's physical environment on teacher behavior, pupil behavior and/or pupil learning. Further information concerning procedures for application can be obtained from the Department of Educational Leadership.

The Mekis Scholarship

The Mekis Scholarship is available to outstanding students who wish to pursue graduate study in political philosophy at The University of Georgia. The amount and frequency of the award depend upon the selection committee's judgment of the qualifications of candidates and upon the income produced annually by the Mekis bequest. The amount awarded most recently was \$1,000. It is expected that the Mekis Scholarship will be offered in conjunction with other fellowships or assistantships for which the recipient is competitive. For more information contact the Department of Political Science.

Microbiology Pre-Doctoral Research Training Grant National Science Foundation

Fellowships for graduate study in the area of microbiology carry a 12-month stipend of \$15,000 and include provisions for payment of tuition and fees and certain travel expenses. Only students of RTG faculty are eligible. Application should be made to the RTG Coordinator, Department of Microbiology.

David J. Mullen Scholarship

This scholarship fund was established by the family, friends, and students of Dr. David J. Mullen, Sr. The purpose of the fund is to

provide scholarship assistance to a doctoral candidate preparing for a public school position in the Department of Educational Leadership. This \$1,000 scholarship is non-renewable and is to be awarded during the year of writing the doctoral dissertation. Further information concerning eligibility and procedures for application can be obtained from the Department of Educational Leadership.

Gwendolyn Brooks O'Connell Scholarship

This award will be presented annually to the master's level student with outstanding performance who shows most promise in the instructional area. The candidates must be nominated from their departments and must have been enrolled in the College of Family and Consumer Sciences for at least two quarters. The value of the award is \$500.

Robert E. Parks Essay Award

This award is given each year to a graduate student in English whose essay is selected by the department faculty as the most distinguished graduate essay of the academic year. The award carries a value of \$300.

Archie E. Patterson Scholarship Fund

This scholarship fund was established in 1987 by T&S Hardwoods, Inc., of Milledgeville, in honor of Professor Emeritus Archie E. Patterson. The award recognizes superior scholarship and is available to juniors, seniors, and graduate students enrolled in the School of Forest Resources. The stipend is for the amount of one year's in-state tuition. Applications must be received by March 1 in the office of the dean of the School of Forest Resources.

Joe and Diane Perno Memorial Fund

This fund was established by the Perno family in memory of Joe and Diane Perno. The purpose of these awards is to recognize superior students in the School of Social Work. Awards include tuition supplements and research awards. Application should be made to the School of Social Work.

Perryco Fellowships

Perryco Fellowships are available for doctoral students in insurance. These awards are made by the Department of Insurance, Legal Studies, Real Estate and Management Sciences and are available for incoming PhD students.

Phelps-Stokes Graduate Fellowship

The holder of this fellowship must pursue studies in one of the following departments: economics, education, history, political science, social work, or sociology. He/she must make a scientific study of the role of blacks in American civilization. The value of this scholarship at present is \$1,500 a year. Application should be made to the student's major department in the university.

Emily Quinn Pou and Joe (J.W.) Pou Scholarship—Dean's Scholar

This scholarship is open to undergraduate or graduate students currently enrolled in the College of Family and Consumer Sciences having at least three quarters remaining in their degree program. A minimum GPA of 3.0 is required for consideration. A written statement about the applicant's professional goals and how the scholarship may assist in the achievement of these goals must accompany the application. The value of the award is \$500.

Real Estate Scholarships

Scholarships are available for qualified PhD students. These awards are made by the department and are available for all persons on assistantship. The amount of the award varies based on the academic qualifications of the candidate.

Henry L. Richmond Graduate Scholarship

A portion of the income from the Henry L. Richmond Fund is used to provide scholarships in the Department of Chemistry. One or more \$1,000 scholarships are available each year.

Risk Management and Insurance Scholarships

Scholarships are available for qualified PhD students. These awards are made by the department and are available for all persons on assistantship. The amount of the award varies based on the academic qualifications of the candidate.

Charles M. Rose Scholarship

Watt Publishing Company sponsors a scholarship in the name of Mr. Charles M. Rose. This scholarship is made annually to a graduate or undergraduate student in poultry science. Selection is based on scholarship, professional and extracurricular activities,

and departmental and university service. The stipend is \$1,000 each year.

Robert A. Sheldon Scholarship

This award is made yearly to a student in the Department of Ecology for summer research at a field station or marine laboratory not affiliated with The University of Georgia. The stipend is at least \$750 each year. Application should be made to the head of the Institute of Ecology.

Gene M. Simons Fellowship Award

The purpose of the fund is to provide fellowship and research support to outstanding and deserving graduate students whose major field of study is music education. Preference will be given to graduate students whose professional and research interests lie in one or more of the following areas: (a) music in early childhood, (b) research in early childhood music; and (c) choral music education. Nominations are initiated by the School of Music faculty and the Gene M. Simons Fellowship Committee.

Martin Reynolds Smith Fund

By the gift of \$2,000, Mr. J. Warren Smith established this fund in memory of his son, Martin Reynolds Smith. The interest from this investment is to be used as prizes for excellence in research in chemistry. Applications should be directed to the head of the Department of Chemistry.

Mary Ella Lunday Soule Award

A memorial fund was established in 1979 to honor Mary Ella Lunday Soule, who was head of the Women's Physical Education Department from 1925 to 1960. These funds are awarded to outstanding women students enrolled in the Department of Physical Education and Sport Studies based upon scholastic achievement and professional contributions. Monetary awards are given each year to an undergraduate student, to a master's student, and to a doctoral student.

Tull Teaching Assistantships

Recipients are responsible for teaching one accounting principles course each quarter for three quarters. Guidance is provided by the School of Accounting faculty. The stipend is \$4,500. Recipients must be enrolled for a minimum of eight hours.

Robert H. West Scholarship

This award is presented annually to an outstanding student working towards a graduate degree in English. It is given in memory of the late Dr. Robert H. West, a member of the department from 1936 to 1974, and department head from 1962 to 1972. The award is made by the faculty of the Department of English.

Heather Christina Wright Memorial Scholarship Fund

This scholarship fund was established by family and friends in memory of Heather Christina Wright. The purpose of these awards is to recognize students who exemplify the character and enthusiastic spirit of Heather and the desire to dedicate their lives to serving and helping cancer patients and their families.

Florene M. Young Award

Two students are chosen who best represent the ideals of Dr. Florene M. Young. The award process emphasizes both clear merit in the applied science of clinical psychology as well as a strong commitment to helping others. The award was established in 1989 by the clinical psychology program, the Department of Psychology, and the many admirers of Dr. Young in recognition of her pivotal role in establishing a nationally recognized, empirically oriented clinical psychology program at The University of Georgia. Each award includes a cash prize of \$300.

The Herbert Zimmer Scholar Awards

Each year an outstanding third- or fourth-year graduate student in each area of specialization in the Department of Psychology is selected to receive a Herbert Zimmer Scholar in Psychology Award. These awards recognize outstanding potential for research and include a cash prize of \$100.

Graduate Research Facilities

Centers and Institutes

Artificial Intelligence Center

Director: Dr. Donald Nute, (706) 542-0358. The Artificial Intelligence Center is a multidisciplinary group dedicated to basic and applied artificial intelligence research,

especially in knowledge representation, expert systems, natural language processing, neural nets, and genetic algorithms. The Center currently administers a master of science program in artificial intelligence. Fellows include faculty from the Franklin College of Arts and Sciences, the Terry College of Business, the College of Agricultural and Environmental Sciences, and the College of Education. The Center has additional Fellows from institutions in North America, Europe, and Australia. Visiting appointments are available to researchers with sabbatical or other support. The Center has a Worldwide Web page at www.ai.uga.edu. For further information, contact the Director, Artificial Intelligence Center, 111 Boyd Graduate Studies Research Center, The University of Georgia, Athens, GA 30602-7415 (dnute@ai.uga.edu). For information about the graduate program, contact Dr. Walter D. Potter at the same address (potter@pollux.cs.uga.edu) or Angie Paul (aspaul@uga.cc.uga.edu).

Center for Advanced Ultrastructural Research

Director: Dr. Mark A. Farmer, (706) 542-4080.

The Center for Advanced Ultrastructural Research serves the University System by providing a repository of facilities and expertise to assist in pursuing research and instructional needs employing light, fluorescence, and electron microscopy. Facilities include two TEMs, a Field Emission SEM, two confocal microscopes, X-ray microanalysis, and image processing and analysis workstations. Formal courses in microscopy are offered through the Division of Biological Sciences.

Center for Applied Isotope Studies

Director: Dr. John E. Noakes, (706) 542-1395.

The Center for Applied Isotope Studies is a multidisciplinary group dedicated to research and development in nuclear analytical methods and system technology. The primary activities of the Center are to work cooperatively with the academic, scientific, and industrial communities through programs of applied and basic research. Emphasis is placed on applied research, assisted by a unique array of nuclear analytical tools directed toward the resolution of critical contemporary problems. Primary areas of applied

research include a stable isotope research laboratory for food/flavor and hydrologic research, a marine survey program for environmental and mineral resource applications, the development of transgenic fish species for environmental assessment applications, and a geohydrologic investigations program. One of the highest priorities of the CAIS is to direct its programs of research to address environmental problems and issues, focusing on the development of new analytical methods and systems technologies for scientific and industry application. A state-of-the-art service laboratory is maintained by the CAIS for radiocarbon dating, stable isotope measurements, trace element determinations, ^{60}Co gamma irradiation of samples, and low-level detection of tritium and other radionuclides for environmental monitoring and assessment. The CAIS also serves as a reference center, available to UGA students and faculty, for research design in nuclear methods. The Center is located at the University's Riverbend Research Park in the Center for Applied Isotope Studies Building.

Center for Archaeological Sciences

Director: Dr. George A. Brook, (706) 542-2354.

The Center for Archaeological Sciences promotes research between the humanities—archaeology, anthropology, and art history—and the sciences—geology, geography, geochemistry, chemistry, and biology. The Center coordinates the research of university scholars in fields relating to archaeology and art history, facilitates collaboration with experts outside the university, serves as a resource center of laboratory equipment and technical support for archaeologists, art historians, and museums worldwide, and coordinates interdisciplinary undergraduate and graduate degree programs in the archaeological sciences.

Center for Asian Studies

Co-Directors: Dr. Thomas Ganschow, (706) 542-2053, and Dr. Shanta Ratnayaka, (706) 542-5356.

The Center for Asian Studies exists to nurture and guide academic programs and exchanges on Asia for students, faculty, and appropriate staff members. While these programs focus on language and area studies, they also involve students and faculty from law, business, agriculture, education, journalism, veterinary medicine, as well as the

arts and sciences. Specific purposes and programs focus on (1) curriculum planning, review, and development in modern Asian languages and related area studies; (2) a speakers' and visitors' program of distinguished Asianists to address and exchange ideas with students, faculty, and community on Asian topics; (3) student and faculty exchange agreements such as the ones recently concluded with Kansai Gaidai and Yokohama University in Japan and the established one at Kagoshima University in Japan; (4) development of library and related instructional and research facilities necessary for a credible academic program in Asian studies; (5) planning and application for external funding for Asian Studies at UGA; and (6) research and research collaboration on East Asia. A certificate program in East Asian Studies based on concentration in either Chinese or Japanese is available for graduate students and is administered jointly by CAS and the Center for Global Policy Studies.

Center for Biological Resource Recovery

Director: Dr. Lars G. Ljungdahl, (706) 542-7640.

The Center for Biological Resource Recovery is comprised of investigators from the departments of biochemistry and molecular biology, botany, microbiology, and marine sciences at the university and from the Richard B. Russell Agricultural Research Center. The Center puts special emphasis on the use of enzymes and microorganisms in the pulp and paper industry and in agriculture, but it is also committed to extending the biotechnology required for the use of microorganisms and their enzymes as inexpensive and energy-efficient catalysts for converting our main renewable resource, biomass to desired products, such as fuel and industrial feedstock chemicals. Studies include the physiology, biochemistry, genetics and ecology of bacteria and fungi that are important for biotechnological industries.

Center for Computational Quantum Chemistry

Director: Dr. Henry F. Schaefer III, (706) 542-2067.

The Center for Computational Quantum Chemistry (CCQC) seeks to develop theoretical and computational methods through mathematical models for describing and

understanding the movement and function of electrons in molecules. Quantum mechanical methods currently under development include density functional theory and the configuration interaction and coupled cluster methods. The CCQC also applies these theoretical methods to significant problems of broad chemical interest. Areas of current special concern include: (1) organosilicon chemistry, specifically the prediction and understanding of the properties of silicon analogs of common hydrocarbon compounds; (2) the potential energy hypersurfaces that govern elementary gas-phase chemical reactions, particularly those important in combustion; (3) negatively charged molecular species of importance in atmospheric chemistry; (4) fundamental problems in physical organic chemistry involving, for example, carbenes and other biradical species and systems such as the [n] paracyclophanes; and (5) hydrogen bonding in systems such as the formic acid dimer and the guanine-cytosine base pair.

Center for International Trade and Security

Co-Directors: Dr. Gary K. Bertsch, (706) 542-2985; Dr. Martin J. Hillenbrand, (706) 542-2985.

The Center for International Trade and Security (CITS) (formerly the Center for East-West Trade Policy) is an interdisciplinary and inter-university research, teaching, and service project designed to contribute to enlightened trade and security policies. CITS strives to produce policy-relevant research on political, economic, and security issues related to international trade and technology transfer. The center encourages and coordinates collaborative research, teaching, and service-related activities within the university, the state, the nation, and overseas. CITS currently directs international research projects on the development of systems of export control in the new independent states of the former Soviet Union and in Asia.

Center for Latin American Studies and Caribbean Studies

The Center for Latin American Studies coordinates interdisciplinary research, curriculum offerings, and public programs which deal with Latin America and the Caribbean. Through colloquia, conferences, and an undergraduate certificate program, the center seeks to bring together faculty from all col-

leges and schools in the university currently engaged in work related to this region of the world.

Center for Metalloenzyme Studies

Co-Directors: Dr. Michael K. Johnson (706) 542-9378; Dr. Robert A. Scott (706) 542-2240.

The Center for Metalloenzyme Studies was established to encourage interdisciplinary research to determine how vital metalloenzymes function and how they are synthesized and regulated. Through collaborative research, discussions, and seminars, new insights are obtained concerning enzymes that catalyze life-supporting processes such as nitrogen fixation, respiration, photosynthesis, sulfur conversions, and hydrogen production. Use of the latest technologies and analytical equipment enables faculty of the center and its postdoctoral and graduate students to investigate the catalytic mechanisms of metalloenzymes at the molecular level. The center faculty organize state-of-the-art courses in inorganic biochemistry, biochemistry, enzymology, fermentation technology, as applied to metalloenzyme production, structure, and function.

Center for Remote Sensing and Mapping Science

Director: Dr. Roy A. Welch, (706) 542-2359. The Center for Remote Sensing and Mapping Science (CRMS) undertakes research and training in the fields of remote sensing, geographic information systems (GIS), photogrammetry, digital image processing, and computer graphics, particularly as applied to the physical and biological sciences. Typical research topics include quantitative methodologies for measuring soil erosion from agricultural lands by photogrammetric techniques, mapping environmental disturbances from aerial photographs and satellite images, development of integrated image processing/GIS software and advanced technologies for monitoring the earth's surface from digital image data. Close associations are maintained with remote sensing organizations and scientists in Canada, Europe, South America, and Asia. The CRMS provides technical assistance to universities and to local, state, and federal agencies.

Center for Simulational Physics

Director: Dr. David Landau, (706) 542-2909. The Center for Simulational Physics functions as a center for research and training in simulational physics, with emphasis on the use of supercomputers and novel parallel architectures. Because of this work, close interaction with the University Computing and Networking Services is maintained, and collaborative research programs with major institutions in the United States and Europe are developed. The center's staff consists of research and adjunct professors, visiting research scientists, and postdoctoral associates.

The Southeastern Center for Applied Cognitive Aging Research

Director: Dr. Denise C. Park, (706) 542-4211.

The Southeastern Center for Applied Cognitive Aging Research is one of the six Edward R. Roybal Centers for Research on Applied Gerontology funded by the National Institute on Aging. The centers are aimed at keeping people independent, active, and productive in later life. The Southeastern Center is a consortium of The University of Georgia and Georgia Institute of Technology, and the University of Michigan. Research involves studying the ways mental skills, such as problem solving, memory, attention, and perception, change and can be enhanced as people grow older. Current topics of study include improving techniques for helping the elderly to remember to take medication, developing training programs for computers that are "elder friendly," and defining principles for age-related teaching methods that can be applied to many tasks of daily living.

Complex Carbohydrate Research Center

220 Riverbend Road; Tel.: (706) 542-4401; Fax: (706) 542-4412

Co-Directors: Dr. Peter Albersheim, (706) 542-4404; Dr. Alan Davill, (706) 542-4411. The Complex Carbohydrate Research Center (CCRC), which includes a U.S. Department of Energy-funded Plant and Microbial Carbohydrate Center and a National Institutes of Health Resource Center for Biomedical Complex Carbohydrates, studies the structures and functions of the complex carbohydrates of plants, microbes, and animals. Scientists at the CCRC investigate the chemistry and the physiological, develop-

mental, and molecular biology of complex carbohydrates having biological importance, using the most advanced analytical techniques, including mass spectrometry, nuclear magnetic resonance (NMR) spectroscopy, computer modeling, artificial neural networks, tissue culture, and recombinant genetics. The CCRC provides analytical services to scientists, conducts annual hands-on laboratory training courses, and develops computer software to assist the study of complex carbohydrates. MS and PhD students in the Departments of Biochemistry and Molecular Biology, Botany, and Chemistry can apply to conduct their graduate research under the direction of a CCRC faculty member. The Complex Carbohydrate Structure Database and its search program, CarbBank, were written and developed by CCRC scientists under the direction of an international executive board and input from curators in 30 countries. The database currently contains more than 37,000 records, is available through Internet or on a CD-ROM disk, and is updated semi-annually. CCRC personnel are presently engaged in over 100 collaborations with scientists in North America, Europe, and Japan.

James M. Cox, Jr., Center for International Mass Communication Training and Research

Director: Dr. Albert Hester, (706) 542-5023. The James M. Cox, Jr., Center for International Mass Communication Training and Research serves to facilitate international mass communication training and research programs in which scholars from the United States and foreign countries, students, and mass communication professionals can cooperate. The center helps to coordinate efforts to improve the state of knowledge in the field and to encourage practical training, education, and service projects.

Institute for Behavioral Research

Director: Dr. Rex L. Forehand, (706) 542-1806.

The Institute for Behavioral Research is a multidisciplinary research organization, the purpose of which is to encourage a pooling of the expertise of staff members and graduate students from various departments to attack significant social and behavioral problems at both basic and applied levels.

Staff members are assembled from a variety of departments from the College of Arts

and Sciences, College of Education, College of Family and Consumer Sciences, and the School of Social Work. Staff members hold faculty rank in their respective departments and have a joint appointment in the Institute. Many hold research grants or contacts, and research assistants are appointed to further these and other ongoing research efforts. Current activities include research on the family, cognition, and deviance. IBR serves as an "umbrella" for several enterprises: the Survey Research Center, the Center for Research on Deviance and Behavioral Health, and the Center for Family Research. In addition, there is a cognitive studies interest group.

The Institute is housed in Barrow Hall, with ready access to the University Computer Center, a technical library, and related facilities.

The Institute does not confer degrees; however, students interested in the Institute's activities may correspond with the graduate coordinator of any department collaborating with the Institute or with the Director, Institute for Behavioral Research, The University of Georgia, Athens, Georgia 30602-2401.

Institute of Ecology

Director: Dr. Gary W. Barrett, (706) 542-2968.

The Institute of Ecology was founded in 1961 to promote interdisciplinary research in ecology, especially large-scale system-level studies of major environments such as forested watersheds, wetlands, lakes, rivers, tropical rain forests, and agro-ecosystems. The Institute currently administers a doctoral program in ecology and an interdisciplinary master of science program in conservation ecology and sustainable development. A core administrative, technical, and professional staff is supported by state funds. Most of the support for the large research projects and for graduate and post-doctoral students working on these projects comes from grants.

In addition to the faculty of the Institute, a larger affiliated membership represents many academic disciplines, coming from at least 20 University departments or schools. Besides these academic units, members are on the staffs of the Institute of Community and Area Development, the Institute of Government, and the Marine Science Program.

Ecologists from the U.S. Forest Service and U.S. Environmental Protection Agency, who closely interact with Institute scientists, are also members.

The Institute has a long-standing and highly productive relationship with the Savannah River Ecology Laboratory in Aiken, SC, and the U.S. Forest Service's Coweeta Hydrological Laboratory in Franklin, NC. The Institute also is developing research and academic relationships with the Joseph W. Jones Ecological Research Center, Ichauway, in southwest Georgia. Additional field studies are also underway at Cumberland Island National Seashore, Sapelo Island, the Ogeechee River, the Coastal Plains Experiment Station, and the Florida Keys; international field research sites include Costa Rica, Ecuador, Guatemala, Puerto Rico, the Philippines, and Burkina Faso. The Institute supports research in marine and freshwater ecology, radiation ecology, ecological toxicology, evolutionary ecology, conservation biology, landscape ecology, restoration ecology, agroecosystem ecology, and resource management. Graduate students participate in various Institute research projects. Their research usually contributes to their thesis or dissertation.

A special graduate student research program is offered through the University's Savannah River Ecology Laboratory (SREL). Funded by the U.S. Department of Energy, the laboratory is located on DOE's 250,000-acre Savannah River site. The site contains a variety of natural and disturbed habitats. Research is jointly supervised by the student's university research committee and SREL. Stipends are available. A pre-doctoral fellowship program is also available. All participants in SREL's educational program must be U.S. citizens.

For additional information on the Institute of Ecology, contact Dr. Gary W. Barrett, Institute of Ecology, The University of Georgia, Athens, Georgia 30602-2202. For additional information on the advanced degree program in Ecology, contact Dr. James W. Porter, Ecology Program, Ecology Building, The University of Georgia, Athens, Georgia 30602-2202. Persons interested in SREL programs should contact Ms. Jannell Gregory, SREL, Drawer E, Aiken, South Carolina 29802.

Institute of Higher Education

Director: Dr. Cameron Fincher, (706) 542-3464.

The Institute of Higher Education is an instruction, service, and research agency of The University of Georgia and works closely with other educational agencies and institutions in cooperative programs dealing with planning, development, and evaluation. The Institute is involved in many activities related to the overall development of higher education and the improvement of institutions and programs. Staff members participate in state-wide, regional, and national studies of institutional goals, program development, instructional improvement, and the professional development of administrators and faculty members. One important function of the Institute is assisting other institutions in projects related to the improvement of administrative, faculty, and student services. Another function includes cooperation with the Graduate School in helping faculty members of Georgia colleges continue their graduate education and to improve their teaching skills. As part of its efforts to analyze and interpret conceptual and operational trends in higher education, the Institute conducts numerous workshops, seminars, and conferences on the campuses of other institutions. Closely related to all Institute activities is a doctoral program specifically designed to study education beyond the high school. Inquiries should be addressed to the Director, Institute of Higher Education, Candler Hall, The University of Georgia, Athens, Georgia 30602-1772.

Institute for Natural Products Research

Director: Dr. S. William Pelletier, (706) 542-5800.

The Institute for Natural Products Research carries out a broad range of research on naturally occurring substances of plant origin, with particular attention to plant species of Georgia and the Southeast. Projects involve research on alkaloids, terpenes, anti-tumor agents, phytoalexins; the development of new synthetic methods; and the application of modern spectroscopic methods to structure elucidation problems. Research involves the isolation and elucidation of chemical structures of new compounds possibly useful as drugs for the treatment of human disease. The institute serves as a training center for visiting faculty and for

postdoctorate and graduate students who are working in natural products research.

Marine Facilities

Two units of The University of Georgia's School of Marine Programs, the Marine Extension Service and the Marine Institute on Sapelo Island, as well as the University System of Georgia's Skidaway Institute of Oceanography, operate extensive coastal facilities available for research and training in marine sciences.

The Marine Extension Service's education center and shellfish research laboratory are on Skidaway Island, near Savannah. They are located on a 680-acre tract owned by the University System of Georgia. The education center is a 19,000-sq-ft building containing a 10,000-gallon capacity teaching aquarium, educational exhibits, lecture rooms, four teaching laboratories, and two research laboratories. A 50-bed dormitory and dining room facility operate in support of the marine education program. The shellfish research laboratory has seawater and tank systems to hold brood stock, temperature rooms to control spawning, and illuminated temperature-controlled chambers for maintaining stock algal cultures and mass algal culture systems. A modern, solar-efficient greenhouse was added in 1989 to produce algae. A marine science library occupies 6100 sq ft and has holdings of 18,000 volumes and 200 journal subscriptions. Operated by the Skidaway Institute of Oceanography with partial support of The University of Georgia, it is an official branch of The University of Georgia Library. The *Seadawg*, a 47-ft converted lobster boat, makes about 300 short cruises a year in support of the education and research programs.

Other Marine Extension Service facilities include a fisheries research station on the waterfront in Brunswick. The 9300-sq-ft center for fisheries research was recently augmented with a 6100-sq-ft addition containing conference rooms and flexible space for conducting seminars and short courses, as well as additional laboratories for research addressing the problems of seafood processors and harvesters. The 73-ft research vessel, Georgia Bulldog, is used for gear research and marine biological sampling purposes.

The Marine Institute is located on Sapelo Island in a setting of diverse natural marine habitats. Staffed by The University of Georgia, the Institute is a valuable resource, both in terms of a direct contribution to an understanding of the estuarine and nearshore environment and in implementing the training of students. Partial support is provided by the Sapelo Island Research Foundation, a private, charitable, nonprofit organization founded by the late Mr. R. J. Reynolds.

The Institute's resident staff consists of about 10 scientists, who hold appointments as adjunct professors in the Department of Marine Sciences, as well as a number of technical and support personnel. Members of the campus faculty and students, as well as scientists and students from other institutions, are in periodic residence at the Institute. Field trips and graduate research by campus-based groups are encouraged. Current research programs include energy flow, nutrient cycling, and factors regulating the metabolism of the salt marsh and nearshore ecosystems.

In addition to the School of Marine Programs' coastal facilities, all of which are available for student research and training, the Department of Marine Sciences also maintains extensive research and instructional laboratory facilities on the main campus in Athens. These are equipped to conduct research on a wide range of marine-related physical, biological, chemical, and geological topics as well as on marine and coastal law and policy. The department recently established an aquatic instructional and research station 90 minutes from Athens at Clarks Hill Lake, a large reservoir on the Savannah River near Augusta. The station has a 1000 sq. ft. instructional activities building, and is home base for small boats as well as the fully equipped, 39 ft. research vessel *Underdog*, used to train students in marine and aquatic measurements and sampling techniques.

In 1976, under the Coastal Zone Management Act of 1972, the nation's second estuarine sanctuary was established encompassing the southern portion of Sapelo Island, the Duplin River, and adjacent wetlands and surrounding areas. The primary purpose of the sanctuary is to provide a natural area so that ecological relationships can be studied over a period of time. The Sapelo Island National Estuarine Sanctuary

is managed by the Georgia Department of Natural Resources.

The Skidaway Institute of Oceanography, located on Skidaway Island, was established in 1967 and operates as a unit of the University System of Georgia. The Institute does not grant degrees, but cooperative programs with other institutions make it possible to conduct graduate research in marine sciences at the Institute under the direction of campus or Institute staff. Skidaway Institute faculty hold adjunct professorships with The University of Georgia's Department of Marine Sciences. Current research emphasizes problems in applied and basic oceanography, especially those related to the functioning of natural and perturbed marine ecosystems. Research activities focus on, but are not limited to, coastal environments.

Limited accommodations for visiting scientists and students from The University of Georgia and other institutions are available at both research facilities.

Both Institutes offer research and training opportunities in the marine science field for selected advanced students sponsored by departments having an interest in marine studies.

McPhaul Child and Family Development Center

Director: Dr. Dolores Stegelin, (706) 542-4929.

Associate Director: Ms. Sharen Housmann, (706) 542-4921.

The McPhaul Child and Family Development Center provides developmentally appropriate programs for both university and community families with children 6 months to 5 years. Both half- and full-day programs are available. Half-day programs are for infants, toddlers, two- and three-year old children as well as four-year old children in the Head Start program. Full-day programs exist for three- and for four-year-old children in a state-funded Pre-Kindergarten classroom. Children with a disability are served throughout the Center. The purpose of the center's programs are: (1) to provide training opportunities for university students in the Department of Child and Family Development as well as other academic units to observe and interact with young children and their families; (2) to conduct research on the development of children and families and ways to optimize their development; and (3) to provide a quality developmental program for

young children and to channel other resources of the College of Family and Consumer Sciences to families.

Poultry Diagnostic and Research Center

Director: Dr. Stanley H. Kleven, (706) 542-5644.

The Department of Avian Medicine carries out basic and applied research programs on the diseases which are of economic importance to the poultry industry of Georgia. Diagnostic, laboratory, and consultative services are provided to individuals and groups in all phases of poultry production.

Dean Rusk Center for International and Comparative Law

Director: Professor Thomas J. Schoenbaum, (706) 542-5140.

The Dean Rusk Center for International and Comparative Law was founded in 1977 as part of the School of Law to improve the effectiveness of relations among citizens, private sector entities, and government at the local, state, federal, and international levels. Using advanced electronic information-processing techniques, the center's professional staff and part-time researchers mobilize university, business, and governmental resources to develop theoretical and practical approaches to improve the efficiency of governance, trade, and investment. On occasion the center also helps implement the approaches by providing the private and public sectors with essential manpower and information. In the past the Dean Rusk Center has developed several major initiatives for federal action concerning North American cooperation and overseas trade regulation and representation. It also has analyzed new approaches for expanding Georgia agricultural exports. The center publishes research reports, holds conferences, and sponsors research for Georgia citizens that cover fiscal and monetary policy, international arrangements, and domestic affairs.

Torrance Center for Creative Studies

Director: Dr. Mary M. Frasier, (706) 542-5104.

The Torrance Center for Creative Studies, a unit in the Department of Educational Psychology, is a research and instructional center concerned with the identification and development of creative potential. The cen-

ter accomplishes its purpose by developing, implementing, and evaluating projects at the local, national, and international levels. Programs sponsored by the Torrance Center include the Challenge Programs, the Georgia Future Problem Solving Program, the Creative Scholars Program, and the E. Paul Torrance Lecture. The center maintains the Torrance Library and Archives, a collection of information on creativity, gifted education, and future studies.

Three general types of research studies are conducted by the Torrance Center:

- (1) Studies of children's groups. Methods used in these studies include observation of groups in classrooms, situational assessment, and interview with children. The purpose of these studies is to understand more clearly how intellectual and creative skills emerge and how the development of these skills affect group and individual functioning.
- (2) Studies of individual differences. Under this broad category fall studies of perceptual processes, reasoning and logical abilities, stylistic behaviors, and personality processes. These studies involve describing the progression of gifted and creative children through various developmental stages and the relation between that progression and personality, social, and intellectual development.
- (3) Studies of environmental influences. Under this category fall studies on the nature of environment that facilitate the intellectual and social development of gifted and creative children at home and in educational settings.

Faculty and students interested in conducting research or using Torrance Center resources should address their requests to the Director, Torrance Center for Creative Studies, 323 Aderhold Hall, The University of Georgia, Athens, Georgia 30602-7146.

Research Organizations

Oak Ridge Associated Universities

Since 1948, students and faculty of The University of Georgia have benefited from its membership in Oak Ridge Associated Universities (ORAU), a consortium of colleges and universities and a management and operating contractor for the U.S. Depart-

ment of Energy (DOE) located in Oak Ridge, Tennessee. ORAU works with its member institutions to help their students and faculty gain access to federal research facilities throughout the country; to keep its members informed about opportunities for fellowship, scholarship, and research appointments; and to organize research alliances among its members.

Through the Oak Ridge Institute for Science and Education, the DOE facility that ORAU manages, undergraduates, graduates, postgraduates, as well as faculty enjoy access to a multitude of opportunities for study and research. Students can participate in programs covering a wide variety of disciplines including business, earth sciences, epidemiology, engineering, physics, pharmacology, ocean sciences, biomedical sciences, nuclear chemistry, and mathematics. Appointment and program length range from one month to four years. Many of these programs are especially designed to increase the numbers of underrepresented minority students pursuing degrees in science- and engineering-related disciplines. A comprehensive listing of these programs and other opportunities, their disciplines, and details on locations and benefits can be found in the *Resource Guide* and *The Minority Research and Education Programs* brochure, which are available by calling the contacts below.

ORAU's office for University, Industry, and Government Alliances (UIGA) seeks opportunities for collaborative research and development alliances among ORAU's members, private industry, and major federal facilities. Current alliances include the Southern Association for High Energy Research, the Bioelectromagnetics Research Consortium, High Performance Computing, Bioprocessing, Pan American Association for Physics, Materials Science Forum, and international initiatives in support of the New Independent States in Central and Eastern Europe. Other UIGA activities include the sponsorship of conferences and workshops, the Visiting Scholars program, and the Junior Faculty Enhancement Awards. A copy of *Especially for Members*, which details UIGA's programs, is available from the contacts below.

For more information about ORAU and its programs, contact Dr. Robert L. Anderson, ORAU Council member, at (706) 542-5988, or contact Ann H. Patton, ORAU Corporate Secretary, at (615) 576-3306.

Organization for Tropical Studies

The Organization for Tropical Studies (OTS), a nonprofit scientific and educational corporation, was formed in 1963 by a group of educational institutions that have a long history of interest in developing tropical science. The member institutions—Universidad de Costa Rica, University of California, University of Connecticut, Duke University, University of Florida, The University of Georgia, Harvard University, University of Hawaii, Indiana University, University of Kansas, Louisiana State University, University of Miami, University of Michigan, Michigan State University, University of Missouri, North Carolina State University, University of Ohio, Stanford University, Smithsonian Institution, University of South Carolina, Texas Technological College, University of Washington, and University of Wisconsin—are dedicated to the purpose of developing a sound educational and research program with adequate facilities and support to provide the base support for a massive effort in solving problems in tropical science. Initial emphasis was placed on biological sciences and closely allied fields, but activities have been expanded gradually to include other fields in which study may be most effectively carried out in the tropics.

The initial objectives of the OTS are:

1. to provide a sound formal educational base in tropical biology available to all interested students and scientists in the Americas;
2. to contribute to the education of students and scientists by providing basic background and facilities for tropical research;
3. to develop an educational center that will provide fundamental insight into the principles of tropical biology;
4. to develop an educational center that will provide an intellectual resource in science for the hemisphere; and
5. to stimulate and assist programs of education and research throughout the tropics, primarily through the education of competent tropical scientists.

To implement these objectives, OTS has established an educational center for tropical studies in Costa Rica. Central headquarters are in San Jose in association with the campus of the Universidad de Costa Rica, but the entire republic serves as a classroom and laboratory. Establishment of a network of field stations in appropriate tropical habi-

tats where classes may meet continuously from one to several weeks is an integral feature of OTS planning. OTS is committed to the concept that in order to solve the problems of tropical education and meet the goals of the organization it is necessary to maintain a continuing program of course work presented in a rigorous and organized manner. Coordinated with the course program must also be a program of research to ensure maximum intellectual challenge.

Enrollment in OTS courses is based on national competition, with graduate students and recent postdoctoral faculty selected on the basis of academic record and interest in tropical studies. Descriptions of regularly presented courses and their prerequisites are given under listings in biology, forestry, and geography.

The University of Georgia Tropical Studies Group, with about 50 members in 19 departments, sponsors seminars and workshops on the campus in support of the OTS field program. Membership is open to graduate students and faculty.

Interested persons should contact Dr. Cathy Pringle, Institute of Ecology, or Dr. James L. Hamrick, Department of Botany, who serve on behalf of the University as members of the OTS Board of Directors.

Veterinary Medical Experiment Station

Director: Dr. John M. Bowen, (706) 542-5734.

The Veterinary Medical Experiment Station coordinates and conducts research on disease problems of food- and fiber-producing animals, including poultry, and of companion animals and horses. The research programs, which have applied, basic, and comparative medical orientation, are divided broadly into four main categories: infectious diseases, noninfectious diseases, diagnostic techniques, and therapeutic procedures. Research facilities are located within the College of Veterinary Medicine at Athens, in the Poultry Diagnostic and Research Center at Athens, and in the Veterinary Diagnostic Laboratories at Athens and Tifton. Opportunities for graduate training in the biomedical sciences are provided by the station's research programs.

Libraries

Director: Dr. William Gray Potter, (706) 542-0621.

The University of Georgia Libraries are composed of three major on-campus libraries—the Main Library, Science Library and the Law Library administered by the School of Law. There are several small collections such as those at the Curriculum Materials Center (Education), the Georgia Center for Continuing Education Library, the Veterinary Medicine reading room, and various Lab collections. The UGA Libraries' system also includes libraries at the experiment stations in Griffin and Tifton and the marine stations at Sapelo and Skidaway.

The UGA Library is the largest library in the State of Georgia and serves as the Regional Depository for federal government publications for the state of Georgia. It is a member of the prestigious Association of Research Libraries, consisting of the largest research libraries in North America and ranks in the top thirty of these libraries.

The libraries contain more than 3.3 million books, serials, and documents, plus many other items including manuscripts, photographs, drawings, music scores, audio/video materials, and newspapers. The map collection incorporates over 585,000 items, and the microform collection numbers more than 5.3 million. The collections support the instructional, research, and public service activities of the university and are available to library users both on the campus and across the state.

An outstanding feature of the Main Library is the Hargrett Rare Book and Manuscript Library, a repository of rare and priceless relics. Among the special collections are the works and memorabilia of Erskine Caldwell and Margaret Mitchell, the original Confederate Constitution, Confederate imprints, a notable Georgiana collection, many Southern historical manuscripts, and the sheet music of many well-known musicians.

The Richard B. Russell Memorial Library, an annex to the Main Library, houses the papers and memorabilia of the late Senator Russell, as well as the papers of former Secretary of State Dean Rusk, Senator Herman E. Talmadge, and many other elected officials and government appointees. The archives of the Peabody Award house over 30,000 radio and television programs representing the best in broadcasting.

The University Libraries offer a variety of electronic databases for use by the campus community. In addition to the main catalog, the online system GALIN supports an electronic encyclopedia and indexes to the journal literature of a number of disciplines. GALIN is readily available in the Libraries, across the campus network, or through dial access. Other databases are available through LIBRA, a Novell based file server that is connected to the campus network. Statistical databases are available through the Data Services unit on the 6th floor of the Main Library. Many government produced databases can be found in the Government Documents Department in the Main Library. Additional databases are available through GALILEO, a statewide electronic library service.

More than 370,000 volumes are housed in the University's Law Library. Its collection of British Commonwealth materials is considered one of the finest of its kind in the nation.

Special services of particular interest for graduate students include tours of the libraries and orientation to their services and collections; individual reference conferences for persons undertaking a major research paper, thesis, or dissertation; and access to information in over 200 computer databases through searching done either by the user or with assistance by librarians.

For additional information on Libraries collections and services, contact the Office of the Director, Libraries, The University of Georgia, Athens, Georgia 30602-1641, (706) 542-0621.

Museums

The Georgia Museum of Art

Director: Dr. William Eiland, (706) 542-4662. The Georgia Museum of Art, founded by Alfred H. Holbrook in 1948, serves the university, the community, and the state. In recognition of the museum's statewide significance and growing national prominence, the Georgia General Assembly designated it the official State Museum of Art in 1982. The permanent collection of the museum now numbers over 7,000 works, with primary emphasis on 19th- and early 20th-century American art. The new building is located in the Performing and Visual Arts Center. Works in the collection and curatorial files are available for study by students and scholars. An active publications program includes a quarterly museum newsletter and catalogues for

selected exhibitions organized by the museum. The museum features highlights of its permanent collection and major traveling exhibitions as well as temporary exhibitions of other works from its collections. Lectures, gallery talks, films, family days, and other events are scheduled to complement these exhibitions. The Museum Shop offers a variety of books, cards, and arts-related gifts.

The University of Georgia Museum of Natural History

Director: Dr. Joshua Laerm, (706) 542-1663. The University of Georgia Museum of Natural History, which contains the most extensive collection of Georgia natural history artifacts and specimens; is one of the largest natural history museums in the Southeast. It ranks within the top 50 in the nation in terms of the size of its collections and the scope of its research and technical service programs. The museum comprises eight separate collection areas: Archaeology Collection (3.5 million artifacts), Botany Herbarium (200,000 plant specimens), Entomology Collections (500,000+ pinned insects, 100,000 alcohol-preserved insects, and the world's largest collection of ectoparasitic feather mites—over 6,000,000), Geology Collections (10,000 economic geology ore specimens, 10,000 mineral specimens, and 10,000 invertebrate and vertebrate fossils), Julian H. Miller Mycological Herbarium (25,000 fungi), Plant Microfossil Laboratory (a worldwide collection of fossil pollen samples), Zooarchaeology Collection (3,200 comparative reference skeletons), and Zoological Collections (250,000 vertebrates, 10,000 invertebrates, and 5,000 corals).

The Museum's collections are crucial to quality education in over 30 specialized graduate and undergraduate courses in the natural sciences at the University. Moreover, the educational role of the Museum extends well beyond the campus. Each year the Museum provides loans of educational materials and access to its collections to other institutions and the individuals within the University System, regional primary and secondary schools, and various state agencies. Also, through specialized educational programs, lecture series, and short courses, the Museum reaches thousands of individuals and groups throughout Georgia each year.

The State Botanical Garden of Georgia

Director: Dr. A. Jefferson Lewis, III, (706) 542-1244.

The State Botanical Garden is a public educational facility under the auspices of The University of Georgia. Its mission is to foster appreciation, understanding, and stewardship of plants and nature through research, educational programs, plant collections, and horticultural displays. The Garden is located two miles south of campus. Founded in 1968, it now encompasses more than 300 acres, much of which borders the Middle Oconee River. The Garden features a number of specialty Gardens and collections plus five miles of nature trails. The modern Visitor Center/Conservatory features a permanent display of tropical and semitropical plants along with classrooms, a gift shop, cafe, and other visitor facilities. The adjacent International Garden includes an herb and physic garden, a bog garden, a collection of endangered plants of the southeastern United States, as well as representative species from the floras of the Mediterranean region, Latin America, China, and the southeastern states. The nearly 2,500 types of plants in the accessioned collections are about equally divided between species and cultivated varieties.

The Garden is a living laboratory for university teaching and research. Students and faculty utilize the collections and natural plant communities for studies in a variety of disciplines, including plant reproductive biology, vegetation analysis, ecosystem studies, plant pathology, animal behavior, taxonomy, plant physiology, horticultural trails, museum studies, and anthropology. Conservation programs at the Garden focus on rare and endangered species of Georgia and adjacent states. The Garden is a member of the American Association of Botanical Gardens and Arboreta (AABGA) and Botanic Gardens Conservation International (BGCI), the latter a worldwide network of botanical gardens and arboreta committed to conservation education and research. A computerized geographic information system (GIS) is under development to facilitate and promote research activities. Students and faculty are encouraged to contact the Director of Research at (706) 542-6144 for further information concerning academic use of the Garden facilities.

General Degrees

1996-97



General Degrees

Master of Arts (MA) and Master of Science (MS)

Master of Arts

The Master of Arts degree will be conferred upon candidates who have met the requirements of this degree with major study in one of the following fields: anthropology, art history, business administration, classics, comparative literature, economics, education, English, French, geography, German, Greek, history, journalism, Latin, linguistics, mathematics, mathematics non-thesis, music, philosophy, political science, religion, Romance languages, sociology, Spanish, and speech communication.

Master of Science

The Master of Science degree will be conferred upon candidates who have met prescribed requirements, with major study in one of the following fields: agricultural economics; agricultural engineering; agronomy; anatomy (veterinary); animal science; artificial intelligence; biochemistry and molecular biology; botany; cellular biology; chemistry; child and family development; computer science; conservation ecology and sustainable development; dairy science; entomology; food science; foods and nutrition; forest resources; genetics; geology; horticulture; housing and consumer economics; marine sciences, medical microbiology; microbiology; pharmacology (veterinary); pharmacy; physics; physiology (veterinary); plant pathology; poultry science; psychology; statistics; textiles, merchandising, and interiors; veterinary parasitology; and veterinary pathology.

Requirements

1. *Admission.* An applicant may be admitted as a prospective candidate for the Master of Arts or Master of Science degree upon recom-

mendation of the major department and approval of the dean of the Graduate School.

2. *Residence.* The minimum residence requirement is one academic year (three quarters of full-time study).

3. *Time Limit.* All requirements for the degree must be completed within six years beginning with the first registration for graduate courses on the program of study. An extension of time may be granted only for conditions beyond the control of the individual.

4. *Research Skills Requirements.* Upon the option of the student's major department, a reading knowledge of a modern foreign language or other research skills may be required of a candidate for the Master of Arts or the Master of Science degrees. A prospective student should request information concerning the research skills requirements from the departmental graduate coordinator if the requirements are not described under the departmental heading in this bulletin.

The languages approved by some departments are: English, French, German, Greek, Italian, Portuguese, Russian, and Spanish. The department, the major professor, and the dean of the Graduate School, however, must approve the language proposed by the prospective candidate. A student may not elect to use his or her mother tongue to satisfy a reading knowledge requirement.

A reading knowledge of each language required may be satisfied by passing an examination prepared by the foreign language department and administered once each quarter or by earning a grade of B or higher in a University of Georgia language reading course at the 104 level or above (equivalent to a fourth-quarter course). See section 4 of the statement of policies relating to the Doctor of Philosophy degree for information concerning administration of examinations offered at the University to demonstrate proficiency in a foreign language.

A student whose mother tongue is not English may be permitted to use English to satisfy a foreign language requirement. The department and the major professor must recommend to the dean of the Graduate School that English be considered as a foreign language and present evidence of the student's proficiency in the language. To be effective, this recommendation must be approved by the dean of the Graduate School.

5. *Advisory Committee.* Before the end of the second quarter of residence and upon the recommendation of the departmental graduate coordinator, the dean of the Graduate School shall appoint an advisory committee for the student. The committee will consist of a major professor, as chairman, and two additional members. The major professor and at least one of the other members of the committee must be members or provisional members of the graduate faculty. Only faculty members of the rank of assistant professor or above, or the equivalent, are permitted to serve as committee members. The committee will be recommended to the dean of the Graduate School by the graduate coordinator after consultation with the student and faculty members involved.

The advisory committee, in consultation with the student, is charged with planning the student's program of study. It is also charged with approving the program of study, reading and approving the thesis, and administering the final examination.

6. *Program of Study.* A student must complete a program of study which constitutes a logical whole. The courses listed in this program must carry at least 40 quarter hours of graduate credit, exclusive of thesis, and at least one-half of this credit must be in University of Georgia courses open only to graduate students.

The requirement of at least 20 quarter hours of credit open only to graduate students may not be reduced by credit in 700M (Master's Research). A maximum of 10 quarter hours of 700M may be included on a program of study.

The program of study must be submitted on the proper form with approval by the student's major professor, the departmental graduate coordinator, and the dean of the Graduate School. This step should be completed during the student's second quarter of residence and must be done before the student is admitted to candidacy for a degree.

7. *Acceptance of Credit by Transfer.* If graduate credit earned at an accredited institution constitutes a logical part of the student's program, transfer of credit may be allowed when recommended by the student's major professor and graduate coordinator, and when approved by the dean of the Graduate School. Such transfer of credit cannot exceed ten quarter hours and must fall within the time limit of the degree. No grade below B may be transferred. The courses to be transferred may not have been used in a degree program at another institution. Transfer grades are not used in calculating cumulative averages. All requests for transfer credit, with accompanying official transcripts, must be in the Graduate School at least 30 days prior to the time the student plans to graduate.

8. *Admission to Candidacy.* The student is responsible for initiating an application for admission to candidacy so that it is filed with the dean of the Graduate School by Friday of the first full week of classes of the quarter in which the courses on the program of study are completed. This application is a certification by the student's major department that the student has demonstrated the ability to do acceptable graduate work in his or her field and that:

- (1) all prerequisites set as a condition to admission have been satisfactorily completed;
- (2) research skills requirements have been met;
- (3) the program of study has been approved by the major professor, the graduate coordinator, and the dean of the Graduate School; and
- (4) an average of 3.0 (B) has been maintained on all graduate courses taken and on all completed courses on the program of study (no course with a grade below C may be placed on the program of study).

9. *Grade Average.* To be eligible for graduation, a student must maintain a 3.0 (B) average on all graduate courses taken and on all courses on the program of study.

10. *Thesis.* A candidate must submit a thesis which shows independent judgment in developing a problem from primary sources. (In the Departments of Mathematics and Statistics, the thesis requirement may be replaced by 15 quarter hours of graduate work in 800-level courses.) The thesis shall be written under the direction of

the student's major professor. The thesis must be approved by the major professor, who will distribute copies to the remaining members of the advisory committee and schedule a final examination. Written assent of two of the three committee members will be required before a thesis will be approved as ready for a final defense.

The thesis, signed by the major professor, must be submitted to the dean of the Graduate School for his approval no later than two weeks prior to graduation.

A candidate must register for at least five quarter hours of thesis under the course number 730M. Instructions for typing the thesis may be obtained in the Graduate School.

11. *Final Examination.* A final examination on both the program of study and the thesis is required of all Master of Arts and Master of Science candidates. That part of the examination dealing with the program of study may be written or oral; that part concerned with the thesis must be an oral examination. The final examination will be administered by the advisory committee, with the major professor serving as chairman. All members of the advisory committee must be present.

12. *Binding the Thesis.* Three copies of the thesis must be deposited with the University Library for binding. Each copy must carry a certificate of approval signed by the major professor and the dean of the Graduate School.

13. *Final Clearance.* All requirements for the degree must be completed and reported to the Graduate School no later than one week prior to graduation. A student must enroll for a minimum of five hours of credit the quarter in which he/ she completes degree requirements.

Doctor of Philosophy (PhD)

The University established this degree for the purpose of providing properly qualified students with the opportunity to pursue research and other scholarly activities beyond the point that is possible in programs for the master's degree. At present, opportunity for such advanced graduate work is provided in adult education, agricultural economics, agronomy, animal and dairy science, animal nutrition, anthropology, art, biochemistry and molecular

biology, biological and agricultural engineering, botany, business administration, cellular biology, chemistry, child and family development, communication sciences and disorders, comparative literature, counseling and student personnel services, counseling psychology, drama, ecology, economics, educational psychology, English, entomology, exercise science, food science, foods and nutrition, forest resources, genetics, geography, geology, health promotion and behavior, higher education, history, horticulture, housing and consumer economics, instructional technology, language education, linguistics, marine sciences, mass communication, mathematics, mathematics education, medical microbiology, microbiology, middle school education, music, pharmacology (veterinary), pharmacy, philosophy, physical education, physics, physiology (veterinary), plant pathology, political science, poultry science, psychology, reading education, Romance languages, science education, social science education, social work, sociology, special education, speech communication, statistics, textile sciences, veterinary parasitology, and veterinary pathology.

This degree will be granted in recognition of proficiency in research, breadth and soundness of scholarship, and thorough acquaintance with a specific field of knowledge, not upon completion of any definite amount of work prescribed in advance. Evidence of such attainment must be provided through the presentation of an acceptable dissertation based upon independent research and the passing of such written and oral examinations as may be prescribed.

Departments that have been approved to offer the Doctor of Philosophy degree may implement this degree program by the adoption of appropriate rules and regulations; departmental rules and regulations may not, however, conflict with the policies, rules, and regulations of the Graduate School.

Requirements

1. *Admission.* An applicant may be admitted as a prospective candidate for the Doctor of Philosophy degree upon certification by the major department that he or she is a person of proper attainment and promise, that appropriate courses may be adequately given, and that the student's research can be adequately supported and directed. Such admission must be to an authorized field and

must be approved by the dean of the Graduate School.

2. *Residence.* The granting of this degree presupposes a minimum of three full years of study beyond the bachelor's degree. At least three consecutive quarters of full-time work (i.e., enrollment for a minimum of 45 hours of consecutive course work included on the program of study) must be spent in resident study on this campus. Neither courses taken to fulfill the research skills requirement nor those listed on the program of study as departmental requirements to remove deficiencies at the undergraduate or graduate level are calculated in the 45 consecutive hours of resident credit.

3. *Time Limit.* All requirements for this degree, except the dissertation and final oral examination, must be completed within a period of six years. This time requirement dates from the first registration for graduate courses on a student's program of study.

A candidate for the doctoral degree who fails to complete all degree requirements within five years after passing the comprehensive examination, and being admitted to candidacy, will be required to take the comprehensive examinations again and be admitted to candidacy a second time.*

4. *Research Skills Requirements.* To pursue research effectively a student must develop a facility with certain research skills or tools such as statistics, computer science, or foreign languages. The student's major department determines the skill or skills required of candidates for the Doctor of Philosophy degree. A prospective student should request information concerning research skills requirements from the departmental graduate coordinator if the requirements are not described under the departmental heading in this bulletin. Courses used to satisfy research skills requirements may not be counted as part of the basic program of study.

The Graduate School research skills requirements may be satisfied:

(1) In statistics with a grade of B or better in the final course of the sequence STA 621-622, or the equivalent; or in a course

for which STA 622 is prerequisite. STA 622, its equivalent, or a course for which STA 622 is prerequisite must be taken at The University of Georgia. The statistics requirement may also be fulfilled by passing an equivalency examination given by the Department of Statistics each quarter. This examination may be taken no more than three times.

- (2) In computer science with a grade of B or better in the final course of one of the following sequences: CS 700-733 or CS 700-702-614, or the equivalent; or in a course for which CS 733 or CS 614 is prerequisite. CS 733 or CS 614, their equivalents, or a course for which CS 733 or CS 614 is prerequisite must be taken at The University of Georgia.
- (3) In a foreign language by demonstrating reading knowledge of a foreign language. Foreign languages approved by some departments are: English, French, German, Italian, Portuguese, Russian, and Spanish. The graduate coordinator and the major professor must, however, approve the language proposed by the prospective candidate. Students whose mother tongue is other than English may request to use English to fulfill the foreign language option of the research skills requirement.

The demonstration of a reading knowledge of a foreign language may be done by one of the following methods:

- (a) Earning a grade of B (3.0) or higher in a University of Georgia reading course at the 104 level or above.
- (b) Passing a reading examination prepared by the appropriate foreign language department at The University of Georgia.

The foreign language examinations are offered four times a year during the fourth week of each quarter, including summer, and are administered in the department offering the language. Students must register for the examination two weeks prior to the published test date by signing a list in the foreign language department office and paying a \$10 fee. The examination consists of a written translation of one passage of approximately 500 words in length. Students select a single passage from among three options in humanities, social science, and science. The procedures used in grading the examination are in accord with those used

*When a candidate for a doctoral degree, who was admitted to candidacy prior to September, 1973, is readmitted to the Graduate School, he/she will have five years from the date of first readmission to complete all degree requirements.

by the American Translators' Association. The language department will report the results of the examination by letter to the student, the graduate coordinator of the student's department, and Graduate School within two weeks of the testing date. No other language examination is acceptable to fulfill the research skills requirement.

If a student wishes to offer a language other than French, German, Italian, Portuguese, Russian, or Spanish, and it is acceptable to the major professor and to the graduate coordinator, inquiry should be made to determine if examining authorities are available on this campus. If so, the student's major professor should request approval from the dean of the Graduate School to offer the language in lieu of the four above. Arrangements for the examination will be made after the dean's approval is given. The result of this examination will be reported to the Graduate School by letter from the examiner.

5. *Grade Average.* To be eligible for graduation, a student must maintain a 3.0 (B) average on all graduate courses taken and on all courses on the program of study.

6. *Advisory Committee.* Before the end of the first year of residence of a prospective candidate for the Doctor of Philosophy degree and upon the recommendation of the departmental graduate coordinator, the dean of the Graduate School shall appoint an advisory committee for the student. The committee will consist of a major professor, as chairman, and four additional members. The major professor and at least two of the other members of the committee must be appointed members of the graduate faculty. The committee will be recommended to the dean of the Graduate School by the graduate coordinator after consultation with the student and faculty members involved.

The advisory committee, in consultation with the student, is charged with planning the student's program of study. It is also charged with approving the program of study, arranging the comprehensive written and oral examinations, approving a subject for the dissertation, and approving the student's defense of his or her research. The committee should advise the student of required research skills and other requirements.

Departmental recommendations for the advisory committee, and any replacements, shall be determined by procedures approved by a majority of the graduate faculty of that department.

7. *Programs of Study.* A preliminary program of study, developed by the major professor and the doctoral student and approved by a majority of the advisory committee, will be submitted to the graduate coordinator by the end of the student's first year of residence. The program of study should constitute a logical whole and consist primarily of 800- and 900-level courses in addition to research and independent study.

A final program of study will be submitted to the Graduate School prior to application for admission to candidacy. This program of study must be submitted on the proper form for approval by the advisory committee, the graduate coordinator, and the dean of the Graduate School. The final program of study must show all graduate courses relevant to the doctoral program (including courses from the master's degree and courses transferred from other universities), and not just courses satisfying the minimum degree requirement. A minimum of five hours of 930D, doctoral dissertation, must be included on the program of study.

Each department should evaluate carefully and fully each doctoral student's progress and qualifications at the end of the first year of study in order to advise the student whether or not to continue in the program.

8. *Comprehensive Examinations.* A student must pass formal, comprehensive written and oral examinations before being admitted to candidacy for the degree. These examinations are administered by the student's advisory committee.

The written comprehensive examination, although administered by the advisory committee, may be prepared and graded according to the procedures and policies in effect in the student's department. The oral comprehensive examination will be an inclusive examination within the student's field of study. An examination of the student's dissertation prospectus may precede or follow the oral comprehensive examination but may not take the place of the oral comprehensive examination. All members of the student's advisory committee must be present for the entire period of both oral examinations.

The oral comprehensive examination is open to all members of the faculty and shall be announced by the Graduate School. The graduate coordinator must notify the Graduate School of the time and place of this examination at least two weeks before the date of the examination. This notice must be in writing.

Following each examination, written and oral, each member of the advisory committee will cast a written vote of pass or fail on the examination. At least four out of a possible five positive votes are required to pass each examination. The results of both examinations will be reported to the Graduate School.

9. *Admission to Candidacy.* The student is responsible for initiating an application for admission to candidacy so that it is filed with the dean of the Graduate School at least three quarters before the date of graduation. This application is a certification by the student's major department that the student has demonstrated ability to do acceptable graduate work in the chosen field of study and that:

- (1) all prerequisites set as a condition to admission have been satisfactorily completed;
- (2) research skills requirements have been met;
- (3) the final program of study has been approved by the advisory committee, the graduate coordinator, and the dean of the Graduate School;
- (4) an average of 3.0 (B) has been maintained on all graduate courses taken and on all completed graduate courses on the program of study [no course with a grade below C (2.0) may be placed on the final program of study];
- (5) written and oral comprehensive examinations have been passed and reported to the Graduate School;
- (6) the advisory committee, including any necessary changes in the membership, is confirmed and all its members have been notified of the appointment; and
- (7) the residence requirement has been met.

After admission to candidacy, a student must register for a minimum of five hours of dissertation or other appropriate credit for each of three quarters. A student must register for a minimum of five hours of credit in any quarter when using University facilities and/or staff time.

10. *Dissertation Planning.* A student pursuing this degree must present a dissertation on some subject connected with his or her major field of study. The dissertation must represent originality in research, independent thinking, scholarly ability, and technical mastery of a field of study. The conclusions must be logical, the literary form

must be acceptable, and the contribution to knowledge merit publication.

Persons who serve on the advisory committee at the time the dissertation research is undertaken must be faculty members knowledgeable in the areas of the student's research. They should be selected irrespective of their departmental affiliation. Sometimes membership of the advisory committee will remain unchanged during a student's entire doctoral program, while at other times changes in the original committee will be necessary.

The major professor has the primary responsibility for guiding research, but the student should consult all members of the advisory committee to draw upon their expertise in relevant areas.

The major professor and advisory committee shall guide the student in planning the dissertation. The student will prepare a dissertation prospectus. When the major professor certifies that the dissertation prospectus is satisfactory, it must be formally considered by the advisory committee in a meeting with the student. This formal consideration may not take the place of the comprehensive oral examination.

Approval of the dissertation prospectus signifies that members of the advisory committee believe that it proposes a satisfactory research study. Approval of the prospectus requires the agreement of at least four of the five members of the advisory committee as evidenced by their signing an appropriate form, which, together with the approved prospectus, is filed with the graduate coordinator.

11. *Dissertation Approval and Defense.* When the major professor is satisfied with the completed dissertation, he or she will certify that it has his or her approval and is ready to be read. The major professor will then distribute copies of the dissertation to the remaining members of the advisory committee, schedule a final oral defense, and notify the Graduate School. Subsequently, the Graduate School will announce the time and place of the defense of the dissertation to the University community. The committee members will have three weeks to read and evaluate the completed dissertation.

Written assent of three of the four committee members (other than the major professor) will be required before a dissertation will be approved as ready for a final defense. If the advisory committee declines to approve

the dissertation as ready for the final defense, the major professor will notify the student and the Graduate School.

The defense of the dissertation will be chaired by the student's major professor and attended by all members of the advisory committee. Four of the five members of the advisory committee must approve the student's dissertation and defense and must certify their approval in writing. The results of the defense of the dissertation must be reported to the Graduate School at least one week prior to graduation.

Once the dissertation has been approved by the advisory committee and the final oral examination has been passed, the dissertation must be submitted to the Graduate School for final approval no later than the last day of classes of the following quarter. Dissertations which are not submitted by this deadline must be defended again and approved by the Advisory Committee before they will be considered by the Graduate School for final approval.

12. *Binding the Dissertation.* Three official copies of the dissertation must be filed in

the University Library for binding. Each copy must carry a certificate of approval signed by the major professor and the dean of the Graduate School.

13. *Other Requirements.* Before the degree will be awarded, the student must file a copy of the abstract of the dissertation (not more than 350 words) with the Graduate School and the library. At the same time, the student must submit a receipt showing that he or she has deposited with the treasurer of the University the amount of \$50 to cover the cost of microfilming the dissertation. If the student desires to have the dissertation copyrighted, an additional charge of \$35 must be paid. This fee must be presented at the University Library in the form of a certified check or money order made payable to University Microfilms.

All requirements for the degree must be completed and reported to the Graduate School no later than one week prior to graduation. A student must enroll for a minimum of five hours of credit the quarter in which graduation requirements are completed.

Professional Degrees

1996-97



Professional Degrees

Master's Degrees

General Requirements

Listed below are the general requirements governing professional master's degree programs. For policies pertaining to the Master of Laws (LLM) degree, which deviate from these general requirements, see the LLM program description.

1. *Admission.* An applicant may be admitted as a prospective candidate for a professional degree upon the recommendation of the major department and approval of the dean of the Graduate School.

2. *Residence.* The minimum residence requirement for most professional master's degrees is three quarters, which do not have to be consecutive. See the following program descriptions for specific requirements.

3. *Time Limit.* All requirements for a professional master's degree must be completed within six years beginning with the first registration for courses on the student's program of study. An extension of time may be granted only on conditions beyond the control of the student.

4. *Language Requirement.* A candidate for a professional master's degree is required to show correctness and good taste in the use of both written and spoken English.

5. *Program of Study.* A program of study should be prepared by the student and the major professor during the student's second quarter in residence. This program must be submitted to the Graduate School on application for admission to candidacy forms and must be approved by the major professor, the graduate coordinator, and the dean of the Graduate School.

6. *In-Service Credit.* A maximum of 30 hours of graduate in-service course credit taken at non-resident centers may be included in certain programs. This maximum will be reduced by any credit transferred

from another institution. A student is responsible for contacting the department in which he or she is enrolled to ascertain if in-service courses are acceptable on the program of study.

7. *Accepting Credit by Transfer.* Graduate work taken at an accredited institution which constitutes a logical part of a student's program of study may be transferred if recommended by the student's major professor and graduate coordinator and approved by the dean of the Graduate School. Such transfer of credit cannot exceed 10 quarter hours, cannot reduce residence requirements, and must fall within the time limit of the degree. No grade below B may be transferred. The courses to be transferred may not have been used as part of the requirements for another degree. Transfer grades are not used in calculating quarterly and cumulative averages. All requests for transfer credit, with accompanying official transcripts, must be in the Graduate School at least 30 days prior to the date the student plans to graduate. A combination of in-service and transfer credit may not exceed 30 quarter hours on any program of study.

8. *Admission to Candidacy.* It is the responsibility of the student to see that an application for admission to candidacy is filed with the dean of the Graduate School by Friday of the first full week of classes of the quarter in which the courses on the program of study are to be completed. This application is a certification by the student's major department that the student has demonstrated the ability to do acceptable graduate work and that normal progress had been made toward earning a degree. The student's major professor and graduate coordinator must certify that the following specific requirements for admission to candidacy have been met:

- (1) all prerequisites set as a condition to admission have been completed;

- (2) the program of study has been approved by the major professor, the graduate coordinator, and the dean of the Graduate School;
- (3) an average of 3.0 (B) has been maintained on all graduate courses taken and on all completed courses on the program of study (no course with a grade below C may be placed on the program of study).

9. *Thesis.* If a thesis is required for a professional master's degree, inquiry should be made to the appropriate department concerning procedures to be followed.

10. *Grade Average.* To be eligible for graduation, a student must maintain a 3.0 (B) average on all graduate courses taken, and on all courses on the program of study.

11. *Final Examination.* The candidate must pass a final examination administered by the department. If an oral examination is given, it must be administered by a committee of no less than three faculty members. The results of this examination must be reported to the Graduate School by the major professor. This requirement has been waived for degrees offered in the Terry College of Business.

12. *Registration Requirement.* A student must be registered at The University of Georgia for a minimum of five hours of credit the quarter in which all degree requirements are completed.

13. *Final Clearance.* All requirements for the degree must be completed and reported to the Graduate School no later than one week prior to graduation.

Program Descriptions

Master of Accountancy (MAcc)

The J.M. Tull School of Accounting at The University of Georgia offers a professional Master of Accountancy degree (MAcc). The MAcc is designed for students preparing for careers as professional accountants, whether as tax experts, members of management, computer systems specialists, or as certified public accountants. Advanced studies in taxation, systems, auditing, policy, and ethics provide students with the capabilities of handling the varied responsibilities in the accounting profession.

The official position of the American Institute of Certified Public Accountants is that five years of academic study in accounting are necessary to obtain the professional knowledge for a career in accounting.

Beginning with the May 1998 CPA Exam for the state of Georgia, all first-time candidates must complete a minimum of 225 hours to sit for the examination. This is commonly referred to as the "150 Hour Rule" based on 150 semester hours. Many states, and virtually all the southeastern states, are requiring the "150 hours" prior to sitting for the CPA Exam.

This ruling requires the undergraduate accounting student to complete an additional year of education. The J. M. Tull School of Accounting has responded to this requirement by offering two programs: the Master of Accountancy (MAcc) and the Five-Year Program. Both programs are designed to provide students with an additional year to advance their study and understanding of accounting.

The MAcc program is a post-baccalaureate degree. Students apply for admission upon completion of an undergraduate degree from a regionally accredited institution. An applicant's scholarly and professional ability is evidenced by transcripts, GMAT test scores, and letters of recommendation.

The Five-Year Program allows outstanding accounting seniors at The University of Georgia to begin graduate school during their fourth year. This program allows a student to complete the BBA and MAcc degrees within a five-year period. Applicants must possess high academic credentials as they will complete their final two years of study with graduate student status. Students in the Five-Year Program are eligible for graduate assistantships during their enrollment in the program.

The applicant's credentials are reviewed by a faculty committee. Admission is available each of the four quarters.

All students must have a substantial foundation in the area of business administration and accounting. If the appropriate course work is not completed prior to admission, the study may be accomplished in foundation graduate and undergraduate courses at The University of Georgia. Beyond the foundation, the MAcc program requires a minimum of 47 quarter hours of course work.

Foundation (may be waived by undergraduate work)

Business Foundation

MAT 253	Calculus for Business
ACC 110	Principles of Accounting I
ACC 111	Principles of Accounting II
LS 800	Legal and Social Environment of Business
ECN 861	Business Economics I
FIN 800	Corporate Finance
MAN 802	Production/Operations Management
MAN 900	Organizational Behavior
MKT 751	Marketing Management
MAN 209/209L	Introduction to Computing and MIS
MS 810	Statistical Methods in Business

Accounting Foundation

ACC 500	Intermediate Accounting I
ACC 501	Intermediate Accounting II
ACC 502	Intermediate Accounting III
ACC 703	Advanced Accounting
ACC 710	Managerial I
ACC 720	Auditing I
ACC 730	Systems I
ACC 740	Tax I
ACC 771	Professional Accounting

M^{Acc} Program (47 hours)

ACC 872	Accounting Policy	3 hours
ACC 801	Theory I	4 hours
ACC 741	Tax II	
	<i>or</i>	
ACC 742	Tax III	4 hours
Accounting Electives		12 hours
MBA Electives		12 hours
MBA or M ^{Acc} Electives		12 hours

Master of Accountancy

Audit/Systems Emphasis

The Audit/Systems track prepares students for positions in public or corporate accounting that require a high-technology background. Students can design their program to emphasize auditing, EDP auditing, or systems design. In addition to the Accounting Information Systems (AIS) courses offered through the School of Accounting, students can select electives from Management Information Systems or Computer Science to broaden their technology and computer knowledge.

Taxation Emphasis

This option is designed for the student who desires specialized training in taxation as preparation for a career in public accounting, private accounting, or government. The 12 hours of accounting electives required for the Master of Accountancy degree must be in the area of taxation.

Master of Agricultural Economics (MAE)

This degree is designed for students who wish to acquire specialized training in agribusiness. The 64-hour program blends business and economics with the applied science of agriculture, providing methods for solving real-world problems. An internship and technical report are required in lieu of a thesis.

Master of Agricultural Extension (MAExt)

This degree is designed especially for cooperative extension workers, agricultural educators, and other continuing educational professionals engaged in informal educational settings. In addition to general Graduate School requirements, a baccalaureate degree appropriate to one's work and one year of field experience in cooperative extension, or its equivalent, is desired before a prospective candidate may begin the program. Candidates must complete an approved program of 60 quarter hours of graduate work.

A master's report or thesis is required (AET 921). The content of the problem or analysis must relate to needs within the field of extension education.

Master of Applied Mathematical Science (MAMS)

The Master of Applied Mathematical Science is a terminal degree program designed for students who seek a broad training in applied quantitative methods as preparation for professional employment in business, government, or industry. For such students, this program will provide a structure that blends various applied mathematical sciences with particular reference to their application to real-world problems.

The program of study includes 55 quarter credit hours of graduate courses. In lieu of a thesis, students in the program are required to prepare one or two technical reports, either as part of a regular course or in a special seminar. The preparation of the technical report(s) will provide the student with an opportunity to apply the tools of the mathematical sciences to one or several problems of interest, by developing appropriate models, obtaining needed data, and analyzing the results for their decision implications. The technical report must be filed with the student's department.

Four distinct options are available to accommodate students with different career goals. The student may apply for study in applied mathematics in the Department of Mathematics, management science program in the Terry College of Business, statistical analysis in the Department of Statistics, or computer science in the Department of Computer Science. All candidates for the degree, regardless of the option chosen, must have as prerequisites for admission one year of calculus, a course in linear algebra, an introductory course in statistical methods, and one in computer programming. Additional prerequisites are required for some options. If the student has not completed all prerequisites, he or she must complete them early in the program. Courses taken to meet prerequisites may be graduate or undergraduate courses, but may not be applied to the program of study for the degree.

Master of Art Education (MAEd)

The Master of Art Education degree is designed for art teachers and supervisors of art with course work in curriculum, instructional methodology, and educational research along with theoretical, historical, and psychological foundations of art in education. Students may select courses in studio, art history, aesthetics, and criticism as part of their program. Students select Plan A consisting of 11 courses, 55 quarter hours, including an applied project, or Plan B of 12 courses, 60 quarter hours, with submission of approved papers on related topics. Prerequisite for admission is a bachelor's degree in art or art education. (See MEd degree description for details.)

Master of Arts for Teachers (MAT)

The Master of Arts for Teachers program is designed to prepare teachers for employment in secondary schools and junior colleges. The degree may be earned in English, French, German, Romance languages, and Spanish. There is no thesis or language requirement.

In general, admission requirements for programs leading to the Master of Arts for Teachers degree are the same as admission requirements for programs leading to the Master of Arts degree. Applicants should contact the department in which they plan to enroll for information concerning admission to specific programs. In addition to departmental admission requirements, all applicants for the MAT program must hold a baccalaureate degree from an accredited college or university, with an undergraduate major of at least 35 quarter hours in the appropriate field of study.

Each student will be required to meet the following program requirements before being granted the MAT degree:

- (1) complete 40 hours of graduate course work in the subject area, with approval of the student's academic department;
- (2) complete 15 quarter hours of graduate course work in education and related fields, with approval of the appropriate department in the College of Education;
- (3) pass a final comprehensive examination covering course work and a reading list; and
- (4) receive training in methods of research in the appropriate subject field.

The Master of Arts for Teachers degree program has not been approved for certification by the State Department of Education in Georgia. Any question relating to certification for teaching in the public schools needs to be addressed to the Department of Education in the state in which employment is sought.

Master of Avian Medicine (MAM)

This degree is designed to provide veterinarians with specialized training in the diagnosis, treatment, and prevention of poultry diseases. The degree is open to students

who hold the Doctor of Veterinary Medicine degree or its equivalent.

Candidates for this degree must complete for credit an approved program of 68 quarter hours of graduate work. To complete requirements, the candidate must stand for an oral examination before the faculty of the department of Avian Medicine. No thesis or foreign language is required.

Master of Business Administration (MBA)

Applicants with baccalaureate degrees in any field of study are eligible to apply to the MBA program. Students with undergraduate business degrees from AACSB accredited institutions are eligible to apply to an accelerated one-year program consisting of a minimum of 63 quarter hours. All other students are eligible to apply to the two-year program. All students must have completed at least one quarter of calculus with a grade of C or better and are expected to enter the program computer proficient.

The one-year program begins in the summer quarter. During summer quarter all one-year students take a set of four required courses and three electives. During the regular academic year, the format of the one-year program is identical to the second year of the two-year program.

The first year of the two-year curriculum consists of required course work. These courses provide the student with basic analytical tools as well as the functional and managerial skills necessary to deal with today's business problems. This background provides the student with a basic understanding of organizations and the role of managers in these organizations.

The program's second year consists of electives and a required business policy course to help students comprehend the strategy and integrated operations of a total enterprise. Six of the electives are required to cover two areas of specialization, which are called sequences. These sequences are selected by the student to provide areas of specialized expertise. Each department in the Terry College of Business provides three-course sequences which can be chosen by the student. The remaining electives may be used to specialize in a third sequence or strengthen an existing concentration.

Two-Year Curriculum

First-Year Courses

Fall Quarter:

Principles of Accounting
Statistical Methods in Business
Business Economics I
Information Systems for Management
Business Ethics
Managerial Communication
Negotiation

Winter Quarter:

Accounting and Information Systems
Legal and Social Environment of Business
Applied Statistical Methods
Business Economics II
Financial Management

Spring Quarter:

Financial Markets and Investments
Marketing Management
Production/Operations Management
Organizational Behavior

Second Year Courses

Fall Quarter:

Sequence 1, course 1
Sequence 2, course 1
Free elective
Business Policy
Executive Lecture Series

Winter Quarter:

Sequence 1, course 2
Sequence 2, course 2
Free elective
Free elective
Executive Lecture Series

Spring Quarter:

Sequence 1, course 3
Sequence 2, course 3
Free elective
Free elective

Four-Quarter Curriculum

The four-quarter MBA program is designed to meet the needs of students with an undergraduate degree in business. Entering students must have fulfilled the calculus requirement before they matriculate and are expected to enter the program computer proficient.

Summer Quarter:

First 4 weeks module:

Ethics*

Communications*

Total Quality Management*

Applied Statistical Methods*

Second 4 weeks module:

Applied Statistical Methods* (cont'd)

Marketing Management[§]

Financial Accounting[§]

Corporate Finance[§]

Managerial Economics[§]

Fall/Winter/Spring Quarters: Same as the second year of the Two-Year Program.

Note: The Graduate School of Business Administration requires applicants to submit information in addition to that required by The Graduate School. Files will not be reviewed by the Graduate School of Business Administration until they are complete. Inquiries concerning the MBA program may be made by writing or calling: MBA Program, Graduate School of Business Administration, Terry College of Business, 217 Brooks Hall, The University of Georgia, Athens, Georgia 30602-6264, (706) 542-5671.

Master of Education (MEd)

The Master of Education degree is designed for the student whose vocational objectives require preparation for teaching, supervision, counseling, and/or first line administration in grades P-12 and other educational or professional agencies.

This degree is offered in the following fields: adult education, agricultural education, business education, communication sciences and disorders, computer-based education, early childhood education, educational leadership, educational psychology, elementary education, English education, exercise science, foreign language education, guidance and counseling, health promotion and behavior, home economics education, instructional technology, marketing education, mathematics education, middle school education, occupational studies, physical education, reading education, recreation and leisure studies (plan B), rehabilitation counseling, safety education, science education, social science education,

special education, speech education, student personnel in higher education, and technological studies.

Students who contemplate becoming candidates for this degree should contact the appropriate school, division, or department in the College of Education as to the program to be followed. This degree may be attained through either of the two following plans of work:

PLAN A

The requirements for the degree of Master of Education may be met by the completion of an approved program of a minimum of 55 quarter hours of graduate course work. Under this plan, the following two courses must be included in the student's program: a research course and *765-Applied Project in Education*. A maximum of 25 hours of non-resident in-service credit is allowed on the program of study.

PLAN B

Under this option, the requirements for the Master of Education degree may be met by a minimum of 60 quarter hours of approved graduate course work. A research course must be included in the student's program. A maximum of 30 hours of non-resident in-service credit is allowed on the program of study.

Master of Fine Arts (MFA)

The basic requirements for this degree are satisfactory completion of an approved program of graduate course work including a creative project or problem to be designated as 921, which will carry five hours credit.

In art, emphasis will be placed upon a high degree of technical and artistic accomplishment. The student must also have a general knowledge of art history and criticism. The program specifies a minimum of 90 quarter hours. Art 921 consists of an exhibition of creative work, a paper explaining the project, and a final oral examination. Concentrations are available in ceramics, drawing and painting, fabric design, interior design, jewelry and metalwork, photography, printmaking, and sculpture.

In drama, emphasis will be placed not only upon a high degree of technical and artistic accomplishment but also on a general knowledge of relevant history and literature. The program calls for a minimum of 90 quarter hours. For persons already holding a master's

All Summer courses except statistics are 2 credits.

* Required course.

§ Elective course—Students will take two of four, based on previous course work and planned sequences.

degree in drama, up to ten of these hours may be waived. Concentrations are available in performance, design/ technical theater, and dramatic writing.

The prerequisite for a program in art and drama is the Bachelor of Fine Arts or its equivalent.

Master of Forest Resources (MFR)

This is a professional degree program. The minimum requirement for the Master of Forest Resources degree is an approved program of 55 quarter hours of graduate credit. At least 20 of these hours must be in forest resources and form a logical major. At least 15 hours must be taken outside the field of forest resources. No thesis is required.

Master of Historic Preservation (MHP)

Consistent with the multi-disciplinary nature of historic preservation, persons with baccalaureate degrees in architecture, landscape architecture, urban planning or design, interior design, art history, social history, law, archaeology, real estate, economics, or related disciplines are eligible to apply to the MHP program. The MHP program is designed to prepare students for a wide range of careers in the conservation and management of historic resources in both the built and natural environments. The 90-quarter-hour course of study is structured to develop versatile, competent, and highly motivated professionals who can perceive preservation opportunities in the broadest sense and who can develop strategies ensuring the protection and use of cultural resources as a part of the fabric of urban and rural environments. The MHP program will provide students, from diverse academic backgrounds, a common concept of preservation philosophy and process through an intensive, community-oriented, practical educational experience which effects a balance between academic and professional training.

Master of Home Economics (MHE)

This program is available for students in the Department of Child and Family Development and the Department of Foods and Nutrition who are seeking master's level

training that specifies that the training is in home economics. Basic admission requirements are essentially the same as those required for admission to the Master of Science programs of either department. The minimum requirement for the degree of Master of Home Economics is an approved program of 55 quarter hours with three quarters of resident study. At least four courses must be taken in the department in which the program of study is being pursued. The program of study must include the appropriate 721 course (five hours) on which an acceptable written report must be presented.

Master of Landscape Architecture (MLA)

The MLA program is fully accredited and is designed to prepare students for professional practice at an advanced level. Applicants are accepted with previous degrees from a variety of disciplines. Program lengths are determined with consideration for academic backgrounds and related experience.

Candidates not holding a bachelor's degree in landscape architecture enter the three-year program; students with the BLA degree complete two years of study. Practicing landscape architects with over 10 years responsible experience may be considered for an accelerated one-year program that emphasizes specialization. A thesis that addresses a specific topic area within landscape planning, design, or management serves as a final exam for all candidates.

The two- and three-year programs require a minimum of 75 graduate credits; candidates in the one-year program must complete 42 credits of graduate course work.

Master of Laws (LLM)

The Master of Laws program combines intensive supervised work in a particular area of law with the taking of courses in related fields.

A minimum of two semesters of resident study is required, with a total of 27 semester hours of credit. In addition to the Graduate Seminar (2-hour required course in the Fall semester and 2-hour required course in the Spring semester) at least 12 hours of credit must be earned in courses at the Law School, and 7 hours of credit must be devoted to thesis preparation. The remaining 4 hours of credit may be earned either in course work at

the Law School or other Faculty of the University, if appropriate to the student's plan of study, or in further thesis research. The student must maintain a cumulative average of 2.3 or C+, or above, in accordance with the Law School's grading system, for all graded course work, and must prepare a thesis of publishable quality and form that deals with a legal topic approved by the Graduate Legal Studies Committee. The thesis grade must be B or 3.0 or above to satisfy the requirements for the LLM degree. The thesis will be prepared under the guidance of a Law School faculty member, who will act as the major professor, and who will determine the grade on the thesis. The thesis must be approved as to form and substance by the major professor and a second reader designated by the Director of Graduate Legal Studies. The second reader will be a faculty member of this or another university or otherwise a legal expert in the subject area of the thesis. Together, the major professor and the second reader shall constitute the reading committee for the thesis.

American law students who wish to pursue the Master of Laws degree must hold an AB degree or equivalent from an approved college and a JD degree or equivalent from a law school which is a member of the Association of American Law Schools, which is approved by the American Bar Association, or is a state-accredited law school.

Students from other countries who wish to apply for the LLM must hold a degree equivalent to the JD from a recognized law school with an academic record and study program acceptable to the Faculty of the Law School. Further, applicants from non-English speaking countries must possess proficiency in English as demonstrated on the Test of English as a Foreign Language (TOEFL).

Each student's record of legal studies must display high scholarly aptitude, and the data required in the LLM application form must reflect a well-conceived plan of specialized study and research.

For additional information and applications, please write Graduate Legal Studies, School of Law, The University of Georgia, Athens, Georgia 30602-6012.

Master of Marketing Research (MMR)

This degree program is designed to develop marketing research professionals with a solid

understanding of business and marketing analyses. The program, which begins each June, includes 60 quarter hours of graduate work including two quarters of internship. Students without prior business courses must complete foundation courses before entering the program. No thesis is required.

A Board of Advisors composed of the nation's leading marketing researchers works closely with faculty on program evaluation, instruction, and funding. Marketing Research Assistantships provide a stipend of \$3,600 for each student. Admission is very selective.

Master of Mass Communication (MMC)

The Master of Mass Communication degree serves those students whose career goals indicate that additional course work will be more advantageous to them than the completion of the traditional thesis that is required for the Master of Arts degree. The additional course work provides an opportunity for more breadth and depth of exposure to areas which lay the foundations of career development whether in additional mass communication courses or in cognate courses that tie into the candidate's goals. A total of 55 quarter hours of graduate course work is required to complete the program.

Master of Music (MM)

This degree offers major concentrations in performance, choral conducting, woodwinds, composition, and music literature. Each concentration requires an approved program with a minimum of 50 quarter hours of graduate course work and a five-credit-hour final project. The final project is satisfied by a solo recital of graduate quality, a large original composition, or an approved research project.

Master of Music Education (MMEd)

This degree offers a concentration in music education or music therapy. Completion of the program leads to the MMEd degree and Georgia teacher certification in music at the T-5 level. Those who complete the degree program with a concentration in music therapy and complete a six-month internship in music therapy are also academically qualified to become registered music therapists.

This degree may be obtained through either of two plans. Under either plan, A or B,

an oral and/or written comprehensive examination must be passed during the final quarter of work.

PLAN A

The requirements for this degree may be met by completion of an approved program of study of 50 graduate hours in music, education, and music education, plus five quarter hours in applied problems in music. This program must include at least 40 quarter hours outside the field of education. A research course and other courses required by the department must be included in the student's program.

PLAN B

Under this option, the requirements may be met by completion of an approved program of 60 quarter hours of graduate course work. These courses must include 40 quarter hours outside the field of education. A research course and other courses required by the department must be included in the program.

Master of Plant Protection and Pest Management (MPPPM)

The Master of Plant Protection and Pest Management program is designed to prepare graduates with comprehensive, multidisciplinary training in plant pathology, entomology, and weed science for employment by industrial, extension, or regulatory agencies.

Applicants for the Master of Plant Protection and Pest Management program must hold the baccalaureate degree from an accredited college or university. Basic admission requirements are essentially the same as those required for admission to Master of Science programs in each of the three university departments cooperating to offer the program. Students who satisfy all basic admission requirements, but whose background in pertinent biological and agricultural sciences is inadequate, must enroll for selected undergraduate courses as a means of removing deficiencies. Inquiries concerning specific admission requirements and procedures should be addressed to: Coordinator of MPPPM Program, Department of Plant Pathology, Plant Sciences Building, The University of Georgia, Athens, Georgia 30602-7274.

A total of 62 quarter hours of graduate course work is required to complete the

program. Students will normally complete two internships. Usually, the first will come near the midpoint of the program, and the second will be the final course requirement. In some instances, a six-month internship will be recommended by the student's advisory committee. There is no thesis or language requirement. Each candidate for the degree must pass final written and oral examinations.

Master of Public Administration (MPA)

The prerequisites for the program include a baccalaureate degree, an undergraduate course in American government, and a course in management, to include accounting, computer programming, or statistics. The program requires a minimum of 68 hours of course work. Thirty-eight hours are required core courses while the remainder are devoted to elective specialties. An internship, full-time for three months or part-time for six months, is required for students not having administrative experience. It usually is served in a state, local, or federal government agency. Finally, the student must pass a comprehensive written examination in four fields of public administration.

Master of Social Work (MSW)

A program of the School of Social Work, this graduate professional degree typically requires six quarters of full-time study. Applicants from accredited BSW programs may receive advanced standing and earn the MSW degree in four quarters. Students who transfer from accredited graduate social work programs are required to take a minimum of 60 quarter hours of study.

Academic work is divided between classroom and field instruction. Selected classes and field instruction are held in off-campus locations. Research is emphasized through evaluation of practice and an optional thesis.

In addition to meeting the general requirements of the Graduate School, applicants to the School of Social Work must have completed thirty quarter or eighteen semester credit hours in the behavioral and social sciences including one course in human biology and must demonstrate self-awareness and interpersonal competence. An admissions interview with a faculty member is a desired preadmission procedure. The Master of

Social Work program is fully accredited by the Council on Social Work Education.

Specialist in Education (EdS)

The Specialist in Education degree is a self-contained degree program intermediate between the master's degree and the doctor's degree both in time and depth. It provides advanced study for those preparing for positions which call for a higher level of competence and specialization than that of the master's degree but without the heavy emphasis on research of the doctor's degree.

The degree is offered in the following fields: adult education, art education, communication sciences and disorders, early childhood education, educational leadership, educational psychology, elementary education, English education, foreign language education, guidance and counseling, instructional technology, mathematics education, middle school education, music education, occupational studies, physical education, reading education, safety education, school psychology, science education, social science education, special education, and speech education.

Requirements

1. *Admission.* An applicant may be admitted as a prospective candidate for the Specialist in Education degree upon recommendation of the appropriate department/ division in the College of Education and approval of the dean of the Graduate School. To be admitted to this degree program, an applicant must hold a master's degree from a regionally accredited institution.

2. *Time Limit.* All requirements for the Specialist in Education degree must be completed within six years, beginning with the first registration for courses on the student's program of study. An extension of time may be granted only on conditions beyond the control of the student.

3. *Program of Study.* A program of study should be prepared by the student and the major professor during the first quarter in residence. The program for the degree shall consist of a minimum of 45 quarter hours of study at the graduate level beyond the master's degree. The program shall be planned as a logically organized whole, in

light of the student's record in previous undergraduate and graduate courses, performance on standardized and non-standardized examinations, and the entire professional experience. The program of study, approved by the major professor and the graduate coordinator, is submitted to the Graduate School when the student applies for admission to candidacy. To be eligible for inclusion in a program of study, course work taken after January 1, 1977, must have been taken after the student was admitted as a prospective candidate for the Specialist in Education degree. A maximum of 20 hours of non-resident in-service credit is allowed on the program of study.

4. *Language Requirement.* All candidates for graduate degrees are required to show correctness and good taste in their use of both written and spoken English.

5. *Accepting Credit by Transfer.* A student fully accepted into a Specialist in Education degree program at an accredited institution may transfer 10 hours of graduate course work provided that the courses to be transferred constitute a logical part of the student's program of study and are approved by the student's major professor, the graduate coordinator, and the dean of the Graduate School. Such transfer of credit cannot exceed ten quarter hours, cannot reduce the residence requirement to less than 25 hours, and must fall within the time limit of the degree. The courses to be transferred may not have been used as part of the requirements for another degree. No grade below B (3.0) may be transferred. Transfer grades are not used in calculating quarterly and cumulative averages. All requests for transfer credit, with accompanying official transcripts, must be in the Graduate School at least 30 days prior to the time the student plans to graduate.

6. *In-Service Credit.* A maximum of 20 hours of graduate in-service credit taken at non-resident centers may be included in a program of study for the degree. This maximum will be reduced by any credit transferred from another institution.

7. *Admission to Candidacy.* On the completion of four or five courses, the student has the responsibility to see that an application for admission to candidacy is filed with the Graduate School. This application is a certification by the student's major department that the student has demonstrated the ability to do acceptable graduate

work in the chosen field and has made normal progress toward the degree. The specific requirements for admission to candidacy are listed below:

- (1) all prerequisites set as a condition to admission have been completed;
- (2) the program of study has been approved by the major professor, the graduate coordinator, and the dean of the Graduate School; and
- (3) an average of 3.0 (B) has been maintained on all graduate courses taken and on all completed courses on the program of study (no course with a grade below C may be placed on the program of study).

8. *Grade Average.* To be eligible for graduation, a student must maintain a 3.0 (B) average on all graduate courses taken and on all courses on the program of study.

9. *Final Examination.* The candidate must pass a written and/or oral comprehensive examination administered by the department. The results of the examination must be reported to the Graduate School.

10. *Registration Requirement.* A student must be registered at The University of Georgia for a minimum of five hours of credit the quarter in which all degree requirements are completed.

11. *Final Clearance.* All requirements for the degree must be completed and reported to the Graduate School no later than one week prior to graduation.

Doctor of Education (EdD)

This degree provides advanced professional training for careers in teaching, administration, and other educational services. The degree is offered in the following fields of education: adult education, art education, counseling and student personnel services, early childhood education, education of gifted, educational leadership, educational psychology, elementary education, higher education, instructional technology, language education, mathematics education, music education, occupational studies, physical education, reading education, recreation and leisure studies, science education, social science education, and special education. Specialization in research training and in subject fields appropriate to elementary, secondary, and college teaching is provided.

Departments that have been approved to offer the Doctor of Education degree may implement this degree program by the adoption of appropriate rules and regulations; departmental rules and regulations may not, however, conflict with the policies, rules, and regulations of the Graduate School.

Requirements

1. *Admission.* An applicant who desires to pursue advanced professional training in education beyond the master's degree, with a view to becoming a candidate for the Doctor of Education degree, will be expected to file formal application and present himself to the faculty of the appropriate department/division in the College of Education for special tests and interviews. Recommendation on admission will be made by the department only after its screening procedures have been carried out. Admission will be upon the recommendation of the graduate coordinator, or an authorized representative, and approval of the dean of the Graduate School.

2. *Residence.* The degree presupposes a minimum of three full years of study beyond the bachelor's degree and cannot be secured through summer work alone. At least three consecutive quarters (i.e., enrollment for a minimum of 30 hours of consecutive course work included on the program of study) must be spent in full-time resident study on the campus of The University of Georgia, one of which may be a summer quarter.

3. *Time Limit.* All requirements for this degree, except the dissertation and final oral examination, must be completed within a period of six years. This time requirement begins with the first registration for graduate courses on the student's program of study.

A candidate for the Doctor of Education degree who fails to complete all degree requirements within five years after passing the comprehensive examinations and being admitted to candidacy will be required to take the comprehensive examinations again and be admitted to candidacy a second time.*

*When a candidate for a doctoral degree, who was admitted to candidacy prior to September, 1973, is readmitted to the Graduate School, he/she will have five years from the date of first readmission to complete all degree requirements.

4. *Grade Average.* To be eligible for graduation, a student must maintain a 3.0 (B) average on all graduate courses taken and on all courses on the program of study.

5. *Advisory Committee.* Before the end of the first year of residence of a prospective candidate for the Doctor of Education degree and upon the recommendation of the departmental graduate coordinator, the dean of the Graduate School shall appoint an advisory committee for the student. The committee will consist of a major professor, as chairman, and four additional members. The major professor and at least two of the other members of the committee must be appointed members of the graduate faculty. The committee will be recommended to the dean of the Graduate School by the graduate coordinator after consultation with the student and faculty member involved.

The advisory committee, in consultation with the student, is charged with planning the student's program of study. It is also charged with approving the program of study, arranging the comprehensive written and oral examinations, approving a subject for the dissertation, approving the completed dissertation, and approving the student's defense of his/her research. The committee should advise the student of required research skills and other requirements.

Departmental recommendations for the advisory committee, and any replacements, shall be determined by procedures approved by a majority of the graduate faculty of that department.

6. *Programs of Study.* A preliminary program of study based on a minimum of 120 quarter hours of course work beyond the baccalaureate degree, excluding dissertation credit, will be submitted to the graduate coordinator by the end of the student's first year of residence. The program of study must be developed by the major professor and the doctoral student and approved by a majority of the advisory committee. The program of study should constitute a logical whole and be significantly related to the student's vocational objectives. A minimum of 45 credit hours of course work, exclusive of dissertation credit, must be taken at The University of Georgia at the doctoral level; i.e., 60 total credit hours must be taken at The University of Georgia.

A final program of study will be submitted to the Graduate School prior to application for admission to candidacy. This program of

study must be submitted on the proper form for approval by the advisory committee, the graduate coordinator, and the dean of the Graduate School. The final program of study must show all graduate courses relevant to the doctoral program (including courses from the master's degree and courses transferred from other universities), and not just courses satisfying the minimum degree requirement. A minimum of five hours of 930D, doctoral dissertation, must be included on the program of study.

Each department should evaluate carefully and fully each doctoral student's progress and qualifications at the end of each year of study in order to advise the student whether or not to continue in the program.

7. *Comprehensive Examinations.* A student must pass formal, comprehensive written and oral examinations before being admitted to candidacy for the degree. These examinations are administered by the student's advisory committee.

The written comprehensive examination, although administered by the advisory committee, may be prepared and graded according to the procedures and policies in effect in the student's department. The oral comprehensive examination will be an inclusive examination within the student's field of study. An examination of the student's dissertation prospectus may precede or follow the oral comprehensive examination but may not take the place of the oral comprehensive examination. All members of the student's advisory committee must be present for the entire period of both oral examinations.

The oral comprehensive examination is open to all members of the faculty and shall be announced by the Graduate School. The graduate coordinator must notify the Graduate School of the time and place of this examination at least two weeks before the date of the examination.

Following each examination, written and oral, each member of the advisory committee will cast a written vote of pass or fail on the examination. At least four out of a possible five positive votes are required to pass each examination. The results of both examinations will be reported to the Graduate School.

8. *Dissertation Planning.* The dissertation, being the most important single requirement for the Doctor of Education degree, should demonstrate the intelligent application of

appropriate research procedures to the investigation of a problem in educational theory or practice. The dissertation problem must be conducted on some subject related to the student's major field of study and demonstrate evidence of scholarly ability and a thorough evaluation of relevant source materials. The conclusions must be logical, the literary form acceptable, and the contribution to education theory or practice substantial.

Persons who serve on the advisory committee at the time the dissertation research is undertaken must be faculty members knowledgeable in the areas of the student's research. They should be selected irrespective of their departmental affiliation. Usually membership of the advisory committee will remain unchanged during a student's entire doctoral program. However, if changes in the original committee are necessary, all parties are to be notified.

The major professor and advisory committee shall guide the student in planning the dissertation. The student will prepare a dissertation prospectus. When the major professor certifies that the dissertation prospectus is satisfactory, it must be formally considered by the advisory committee in a meeting with the student. This formal consideration may not take the place of the comprehensive oral examination.

Approval of the dissertation prospectus signifies that members of the advisory committee believe that it proposes a satisfactory research study. Approval of the prospectus requires the agreement of at least four of the five members of the advisory committee as evidenced by their signing an appropriate form, which, together with the approved prospectus, is filed with the graduate coordinator.

9. *Admission to Candidacy.* The student is responsible for initiating an application for admission to candidacy so that it is filed with the dean of the Graduate School at least three quarters before the date of graduation. This application is a certification by the student's major department that the student has demonstrated ability to do acceptable graduate work in the chosen field of study and that:

- (1) all prerequisites set as a condition to admission have been satisfactorily completed;
- (2) research skills requirements have been met;

- (3) the final program of study has been approved by the advisory committee, the graduate coordinator, and the dean of the Graduate School;
- (4) an average of 3.0 (B) has been maintained on all graduate courses taken and on all completed courses on the program of study [no course with a grade below C (2.0) may be placed on the final program of study];
- (5) written and oral comprehensive examinations have been passed and reported to the Graduate School;
- (6) a dissertation prospectus has been approved;
- (7) the advisory committee, including any necessary changes in the membership, is confirmed and all its members have been notified of their appointments; and
- (8) the residence requirement has been met.

The major professor has the primary responsibility for guiding research, but the student should consult all members of the advisory committee to draw upon their expertise in relevant areas.

After admission to candidacy, a student must register for a minimum of five hours of dissertation or other appropriate credit for each of three quarters. A student must register for a minimum of five hours of credit in any quarter when using University facilities and/or staff time.

10. *Dissertation Approval and Defense.* When the major professor is satisfied with the completed dissertation, he or she will certify that it has his or her approval and is ready to be read. The major professor will then distribute copies of the dissertation to the remaining members of the advisory committee, schedule a final oral defense, and notify the Graduate School. Subsequently, the Graduate School will announce the time and place of the defense of the dissertation to the University community. The committee members will have three weeks to read and evaluate the completed dissertation.

Written assent of three of the four committee members (other than the major professor) will be required before a dissertation will be approved as ready for the final defense. If the advisory committee declines to approve the dissertation as ready for the final defense, the major professor will notify the student and the Graduate School.

The defense of the dissertation will be chaired by the student's major professor and attended by all members of the advisory committee. It is open to all members of the University community. Four of the five members of the advisory committee must approve the student's dissertation and defense and must certify their approval in writing. The results of the defense of the dissertation must be reported to the Graduate School at least one week prior to graduation.

Once the dissertation has been approved by the advisory committee and the final oral examination has been passed, the dissertation must be submitted to the Graduate School for final approval no later than the last day of classes of the following quarter. Dissertations which are not submitted by this deadline must be defended again and approved by the Advisory Committee before they will be considered by the Graduate School for final approval.

11. *Binding the Dissertation.* Three official copies of the dissertation must be filed in the University Library for binding. Each copy must carry a certificate of approval signed by the major professor and the dean of the Graduate School.

12. *Other Requirements.* Before the degree will be awarded, the student must file a copy of the abstract of the dissertation (not more than 350 words) with the Graduate School and the library. At the same time, the student must submit a receipt showing that he/she had deposited with the treasurer of the University the amount of \$50 to cover the cost of microfilming the dissertation. If the student desires to have the dissertation copyrighted, an additional charge of \$35 must be paid. This fee must be presented at the University Library in the form of a certified check or money order made payable to University Microfilms.

All requirements for the degree must be completed and reported to the Graduate School no later than one week prior to graduation. A student must enroll for at least five hours of credit in the quarter in which graduation requirements are completed.

Cooperative Doctoral Program

The University cooperates with West Georgia College to offer the Doctor of Education

degree in educational leadership. For information concerning this program, please contact the Office of Graduate Admissions, The University of Georgia, Athens, Georgia 30602-7402.

Doctor of Musical Arts (DMA)

The program of study leading to the Doctor of Musical Arts degree provides advanced professional, academic, and research preparation for music careers in teaching, performing, composing, and conducting. Major concentrations are offered in music education, performance, composition, and choral conducting. The School of Music should be contacted regarding applied music options available within the performance area.

Requirements

1. *Admission.* In addition to meeting the general requirements for graduate admission to the University, an applicant must present evidence of potential for significant scholarly, artistic, and professional attainment in his or her intended major area of concentration. Such potential is normally documented through an assessment of the applicant's academic and professional background and standing; an audition; a portfolio review of musical compositions and performances; letters of recommendation; an interview; and other standard admission review procedures as appropriate to the intended major field of concentration. A recommendation for admission to the program from the School of Music must be approved by the dean of the Graduate School.

2. *Diagnostic Examinations.* Diagnostic examinations are administered prior to or during the initial term of enrollment. Information concerning the diagnostic examinations is available from the Office of Graduate Studies, School of Music.

3. *Residence.* The granting of this degree presupposes a minimum of three full years of study beyond the bachelor's degree. At least three consecutive quarters of full-time work (i.e., enrollment for a minimum of 30 hours of consecutive course work included on the program of study) must be spent in resident study on the campus of The University of Georgia.

4. *Time Limit.* All requirements for the degree except the dissertation or document* and final oral examination must be completed within a period of six years. This time requirement dates from the first enrollment for graduate course work applicable to the student's official program of study.

A candidate who fails to complete all degree requirements within five years after passing the comprehensive examinations and being admitted to candidacy will be required to take the comprehensive examinations again and reestablish degree candidacy.

5. *Research Skills Requirements.* The program of study requires research competencies appropriate to the elected major and minor fields of concentration. Research skills requirements will vary but may include such areas as statistics, computer science, music bibliography, diction, and foreign languages.

A student electing voice performance as the major field of concentration is required to demonstrate a reading knowledge of two foreign languages selected from Italian, German, or French. A student electing a major in either voice performance or choral conducting must demonstrate competence in German, French, and Italian diction and pronunciation. For any other student, research skills are specified by the advisory committee as appropriate to the major or secondary field of concentration. Undergraduate course credit earned in the completion of language or other research skills requirements is not applicable to the minimum number of hours necessary for the awarding of the degree. Information concerning methods of satisfying research skills requirements may be obtained from the Office of Graduate Studies, School of Music.

6. *Grade Average.* To be eligible for graduation, a student must maintain a 3.0 (B) average on all graduate courses taken and on all courses on the program of study.

7. *Advisory Committee.* The graduate coordinator of the School of Music serves as program advisor and recommends an advisory committee to be appointed by the dean of the Graduate School during the student's first year of enrollment. The major professor, program advisor, and three faculty members representing the second field of concentration and the areas of music history/literature and music theory comprise the membership of the advisory committee.

The advisory committee, in consultation with the student, is charged with planning the student's program of study, specifying research skills requirements, arranging for and administering the comprehensive examinations, approving the topic for the document or dissertation, approving and evaluating recital requirements, and approving the student's defense of his or her research.

Recommendations for advisory committee membership, and replacements should vacancies occur, must meet with the approval of the Graduate Studies Committee and the School of Music and the dean of the Graduate School.

8. *Programs of Study.* The program of study involves the completion of course work in five areas: major field; minor field; music history/literature and theory; music in higher education; and research/special requirements. A preliminary program of study is normally developed during the first year of residence. The program must be approved by a majority of the advisory committee.

A minimum of 140 quarter hours must be completed above the baccalaureate degree. Minimum credit hour requirements for each area are specified by the School of Music.

A final program of study will be submitted to the Graduate School prior to application for admission to candidacy. The program of study must be submitted on the proper form for approval by the advisory committee, the graduate coordinator, and the dean of the Graduate School. The final program of study must show all graduate courses relevant to the doctoral program including courses from the master's degree, courses transferred from other universities, and those courses taken in residence stipulated as satisfying minimum degree requirements within the stated matriculation areas. A minimum of five hours of 930D, doctoral dissertation, must be included on the program of study.

The department should evaluate carefully and fully each doctoral student's progress and qualifications at the end of the first year of study in order to advise the student whether or not to continue in the program.

9. *Comprehensive Examinations.* The comprehensive examinations are designed to evaluate the student's ability to assimilate and integrate knowledge, apply historical and theoretical concepts, demonstrate skills, and draw conclusions. The examinations, consisting of written and oral segments, may

*See item number 10.

include a practicum, and are normally scheduled at or near the completion of course work. They cover doctoral course work completed in meeting the requirements of each cognate area of study for the degree, graduate work completed at the master's level, and general musical knowledge acquired through independent study, research, and professional experience. The advisory committee prepares, administers, and evaluates the comprehensive examinations. The major professor reports the outcome to the dean of the Graduate School. At least four out of a possible five affirmative votes are required to pass both the written and oral examinations. Successful completion of the written examination is a prerequisite for scheduling the oral comprehensive examination. All members of the student's advisory committee must be present for the entire oral examination.

The oral comprehensive examination is open to all members of the faculty and shall be announced by the Graduate School. The graduate coordinator notifies the Graduate School of the time and place of the oral examination at least two weeks prior to its administration.

An examination of the student's dissertation prospectus may follow the oral comprehensive examination or be scheduled at a later date. The examination of the dissertation prospectus may not take the place of the oral comprehensive examination.

10. *Dissertation/Document.* A candidate electing music education as the major field of concentration must present a dissertation representing originality of research, independent thinking, scholarly ability, and technical mastery of the chosen topic of study. A candidate of performance, choral conducting, or composition is required to present a written document which, in conjunction with required recitals, is submitted in fulfillment of dissertation requirements. The document is more limited in scope than the dissertation, though comparable in scholarship and its contribution to existing knowledge in the field.

The dissertation or document must demonstrate originality and scholarship, the conclusions must be quantified, the literary form consistent with normal standards for scholarly writing, and the contribution to knowledge meriting publication. A candidate whose major field of concentration is composition or conducting may elect a dissertation with the

consent of the advisory committee. When composition is the major field, the dissertation or document normally will include one or more major original musical works. Scores as well as an accompanying analytical essay are required.

11. *Recitals.* A minimum of three public recitals is required for a student whose major concentration is performance. A student with a concentration in composition is required to present two public recitals. Four recital performances are required of a student majoring with a concentration in choral conducting and literature.

Programs for all recitals and performances must be approved two months in advance by the major professor and advisory committee. When a lecture-recital is to be given, an outline of the lecture must accompany the program proposal.

The first full recital must be presented prior to scheduling the written comprehensive examination; the last recital may not be scheduled until the oral comprehensive examination has been satisfactorily completed and degree candidacy established.

Recital projects presented in partial fulfillment of degree requirements will be evaluated by the full membership of the advisory committee. The committee will notify the major professor if the recital presentation is approved. Should the committee decline approval, the major professor and the dean of the Graduate School are so notified. The graduate coordinator of the School of Music, or an approved designate, will be responsible for coordinating the evaluation of recital project presentations.

12. *Dissertation/Document Planning and Approval.* The student is responsible for the development of a proposal for the dissertation or document. The proposal is developed with guidance provided by the major professor or designated chairman of the advisory committee. The advisory committee is to be consulted on a regular basis during the period of proposal development. Approval of the prospectus requires the agreement of at least four of the five members of the advisory committee as evidenced by their signing an approval sheet attached to the final draft of the prospectus. This action signifies that members of the advisory committee believe that the prospectus proposes a satisfactory research study. A copy of the approved prospectus is filed with the graduate coordinator.

13. *Admission to Candidacy.* The student is responsible for initiating an application for admission to candidacy so that it is filed with the dean of the Graduate School at least three quarters before the date of graduation. This application is a certification by the School of Music that the student has demonstrated ability to do acceptable graduate work in the major concentration and that:

- (1) all prerequisites set as a condition to admission have been satisfactorily completed;
- (2) research skills requirements have been met;
- (3) the final program of study has been approved by the advisory committee, the graduate coordinator, and the dean of the Graduate School;
- (4) an average of 3.0 (B) has been maintained on all graduate courses taken and on all completed graduate courses on the program of study [no course with a grade below C (2.0) may be placed on the final program of study];
- (5) written and oral comprehensive examinations have been passed and reported to the Graduate School;
- (6) the advisory committee, including any necessary changes in the membership, is confirmed and all its members have been notified of their appointment; and
- (7) the residence requirement has been met.

After admission to candidacy, a student must register for a minimum of five hours of dissertation or research credit for each of three quarters. The student must register for a minimum of five hours of credit in any quarter when using University facilities and/or staff time.

14. *Dissertation Approval and Defense.* When the major professor is satisfied with the completed dissertation or document, he or she will certify that it has his or her approval and is ready to be read. The major professor will then distribute copies of the manuscript to the remaining members of the advisory committee, schedule a final oral defense, and notify the dean of the Graduate School. Subsequently, the Graduate School will announce the time and place of the defense of the dissertation or document to the University community. The committee members will have three weeks to read and evaluate the completed manuscript.

Written assent of three of the four committee members (other than the major profes-

sor) will be required before a dissertation or document will be approved as ready for the final defense. If the advisory committee declines to approve the dissertation or document as ready for the final defense, the major professor will notify the student and the dean of the Graduate School.

The defense of the dissertation or document will be chaired by the student's major professor and attended by all members of the advisory committee. Four of the five members of the advisory committee must approve the student's dissertation or document and defense and must certify their approval in writing. The results of the defense of the dissertation or document must be reported to the Graduate School at least one week prior to graduation.

Once the dissertation has been approved by the advisory committee and the final oral examination has been passed, the dissertation must be submitted to the Graduate School for final approval no later than the last day of classes of the following quarter. Dissertations which are not submitted by this deadline must be defended again and approved by the Advisory Committee before they will be considered by the Graduate School for final approval.

15. *Binding the Dissertation/Document.* Three official copies of the dissertation or document must be filed in the University Library for binding. Each copy must carry a certificate of approval signed by the major professor and the dean of the Graduate School.

16. *Other Requirements.* Before the degree will be awarded, the student must file a copy of the abstract of the dissertation or document (not more than 350 words) with the Graduate School and the library. At the same time, the student must submit a receipt showing that he or she has deposited with the treasurer of the University the amount of \$50 to cover the cost of microfilming the dissertation or document. If the student desires to have the dissertation or document copyrighted, an additional charge of \$35 must be paid. This fee must be presented at the University Library in the form of a certified check or money order made payable to University Microfilms.

All requirements for the degree must be completed and reported to the Graduate School no later than one week prior to graduation. A student must be registered for a

minimum of five hours of credit the quarter in which all degree requirements are completed.

Doctor of Public Administration (DPA)

The objective of the program is to provide doctoral-level training for several client groups. First, the program will prepare students to serve in executive or upper managerial levels in local, state, and federal jurisdictions. Second, the program will prepare students for a variety of institutional settings that have significant interfaces with public agencies. These include various institutes, private planning agencies, and consulting organizations. Third, the program will help prepare individuals for specialized research and teaching careers.

The department may implement this degree program by the adoption of appropriate rules and regulations; departmental rules and regulations may not, however, conflict with the policies, rules, and regulations of the Graduate School.

Requirements

1. *Admission.* An applicant may be admitted as a prospective candidate for the Doctor of Public Administration degree upon certification by the major department that he or she is a person of proper attainment and promise. The department must certify that appropriate courses can be offered and required research adequately supported and directed. Admission must be approved by the dean of the Graduate School.

2. *Residence.* The granting of this degree presupposes a minimum of three full years of study beyond the bachelor's degree. At least three consecutive quarters of full-time work (i.e., enrollment for a minimum of 30 hours of consecutive course work included on the program of study) must be spent in resident study on this campus. If the student holds an assistantship or has other part-time duties, the residence requirement will be increased to provide the equivalent of three consecutive quarters of full-time study.

3. *Time Limit.* All requirements for the degree, except the dissertation and final oral examination, must be completed within a period of six years. This time requirement dates from the first registration for graduate courses on the program of study.

A candidate for the Doctor of Public Administration degree who fails to complete all degree requirements within five years after passing the comprehensive examinations and being admitted to candidacy will be required to take the comprehensive examinations again and be admitted to candidacy a second time.*

4. *Grade Average.* To be eligible for graduation, a student must maintain a 3.0 (B) average on all graduate courses taken and on all courses on the program of study.

5. *Advisory Committee.* Before the end of the first year of residence of a prospective candidate for the Doctor of Public Administration degree and upon the recommendation of the departmental graduate coordinator, the dean of the Graduate School shall appoint an advisory committee for the student. The committee will consist of a major professor, as chairman, and four additional members. The major professor and at least two of the other members of the committee must be appointed members of the graduate faculty. The committee will be recommended to the dean of the Graduate School by the graduate coordinator after consultation with the student and faculty members involved.

The advisory committee, in consultation with the student, is charged with planning the student's program of study. It is also charged with approving the program of study, arranging the comprehensive written and oral examinations, approving a subject for the dissertation, approving the completed dissertation, and approving the student's defense of his or her research. The committee should advise the student of required research skills and other requirements.

The department's recommendations for the advisory committee, and any replacements, shall be determined by procedures approved by a majority of the graduate faculty of the department.

6. *Programs of Study.* A preliminary program of study, developed by the major professor and the doctoral student and approved by a majority of the advisory committee, will be submitted to the graduate coordinator by the end of the student's first year of residence. The program of study should constitute a logical whole.

*When a candidate for a doctoral degree, who was admitted to candidacy prior to September, 1973, is readmitted to the Graduate School, he/she will have five years from the date of first readmission to complete all degree requirements.

A final program of study will be submitted to the Graduate School prior to application for admission to candidacy. This program of study must be submitted on the proper form for approval by the advisory committee, the graduate coordinator, and the dean of the Graduate School. The final program of study must show all graduate courses relevant to the doctoral program (including courses from the master's degree and courses transferred from other universities), and not just courses satisfying the minimum degree requirement. A minimum of five hours of 930D, doctoral dissertation, must be included on the program of study.

The department should evaluate carefully and fully each doctoral student's progress and qualifications at the end of the first year of study in order to advise the student whether or not to continue in the program.

7. *Comprehensive Examinations.* A student must pass formal, comprehensive written and oral examinations before being admitted to candidacy for the degree. These examinations are administered by the student's advisory committee.

The written comprehensive examination, although administered by the advisory committee, may be prepared and graded according to the procedures and policies in effect in the student's department. The oral comprehensive examination will be an inclusive examination within the student's fields of study. An examination of the student's dissertation prospectus may precede or follow the oral comprehensive examination but may not take the place of the oral comprehensive examination. All members of the student's advisory committee must be present for the entire period of both oral examinations.

The oral comprehensive examination is open to all members of the faculty and shall be announced by the Graduate School. The graduate coordinator must notify the Graduate School of the time and place of this examination at least two weeks before the date of the examination.

Following each examination, written and oral, each member of the advisory committee will cast a written vote of pass or fail on the examination. At least four out of a possible five positive votes are required to pass each examination. The results of both examinations will be reported to the Graduate School.

8. *Admission to Candidacy.* The student is responsible for initiating an application for

admission to candidacy so that it is filed with the dean of the Graduate School at least three quarters before the date of graduation. This application is a certification by the student's major department that the student has demonstrated ability to do acceptable graduate work in the chosen field of study and that:

- (1) all prerequisites set as a condition to admission have been satisfactorily completed;
- (2) research skills requirements have been met;
- (3) the final program of study has been approved by the advisory committee, the graduate coordinator, and the dean of the Graduate School;
- (4) an average of 3.0 (B) has been maintained on all graduate courses taken and on all completed courses on the program of study [no course with a grade below C (2.0) may be placed on the final program of study];
- (5) written and oral comprehensive examinations have been passed and reported to the Graduate School;
- (6) the advisory committee, including any necessary changes in the membership, is confirmed and all its members have been notified of their appointments; and
- (7) the residence requirement has been met.

After admission to candidacy, a student must register for a minimum of five hours of dissertation or other appropriate credit for each of three quarters. A student must register for a minimum of five hours of credit in any quarter when using University facilities and/or staff time.

9. *Dissertation Planning.* Students pursuing this degree must present a dissertation on some subject connected with their major field of study. The dissertation must represent originality in research, independent thinking, scholarly ability, and technical mastery of a field of study. The conclusions must be logical, the literary form acceptable, and the contribution to knowledge meriting publication.

Persons who serve on the advisory committee at the time the dissertation research is undertaken must be faculty members knowledgeable in the areas of the student's research. They should be selected irrespective of their departmental affiliation. Usually membership of the advisory committee will

remain unchanged during a student's entire doctoral program, while at other times changes in the original committee will be necessary.

The major professor has the primary responsibility for guiding research, but the student should consult all members of the advisory committee to draw upon their expertise in relevant areas.

The major professor and advisory committee shall guide the student in planning the dissertation. The student will prepare a dissertation prospectus. When the major professor certifies that the dissertation prospectus is satisfactory, it must be formally considered by the advisory committee in a meeting with the student.

Approval of the dissertation prospectus signifies that members of the advisory committee believe that it proposes a satisfactory research study. Approval of the prospectus requires the agreement of at least four of the five members of the advisory committee as evidenced by their signing an appropriate form, which, together with the approved prospectus, is filed with the graduate coordinator.

10. *Dissertation Approval and Defense.* When the major professor is satisfied with the completed dissertation, he or she will certify that it has his or her approval and is ready to be read. The major professor will then distribute copies of the dissertation to the remaining members of the advisory committee, schedule a final oral defense, and notify the Graduate School. Subsequently, the Graduate School will announce the time and place of the defense of the dissertation to the University community. The committee members will have three weeks to read and evaluate the completed dissertation.

Written assent of three of the four committee members (other than the major professor) will be required before a dissertation will be approved as ready for a final defense. If the advisory committee declines to approve the dissertation as ready for the final defense, the major professor will notify the student and the Graduate School.

The defense of the dissertation will be chaired by the student's major professor and attended by all members of the advisory committee. Four of the five members of the advisory committee must approve the student's dissertation and defense and must certify their approval in writing. The results of the defense of the dissertation must be

reported to the Graduate School at least one week prior to graduation.

Once the dissertation has been approved by the advisory committee and the final oral examination has been passed, the dissertation must be submitted to the Graduate School for final approval no later than the last day of classes of the following quarter. Dissertations which are not submitted by this deadline must be defended again and approved by the Advisory Committee before they will be considered by the Graduate School for final approval.

11. *Binding the Dissertation.* Three official copies of the dissertation must be filed in the University Library for binding. Each copy must carry a certificate of approval signed by the major professor and the dean of the Graduate School.

12. *Other Requirements.* Before the degree will be awarded, the student must file a copy of the abstract of the dissertation (not more than 350 words) with the Graduate School and the library. At the same time, the student must submit a receipt showing that he or she has deposited with the treasurer of the university the amount of \$50 to cover the cost of microfilming the dissertation. If the student desires to have the dissertation copyrighted, an additional charge of \$35 must be paid. This fee must be presented at the University Library in the form of a certified check or money order made payable to University Microfilms.

All requirements for the degree must be completed and reported to the Graduate School no later than one week prior to graduation. A student must enroll for at least five hours of credit in the quarter in which graduation requirements are completed.

Certification of Professional Personnel

The University of Georgia offers graduate programs leading to professional personnel certification at the master's, specialist, and doctoral levels in some 40 different teaching, administrative, supervisory, and school service fields.

The degrees Master of Education and Master of Arts (Education) include both teaching and professional courses for fifth-year certification. Students who complete a Master of Arts degree may meet certification requirements by taking professional courses in education.

An 80 quarter-hour program leading to T-5 certification is available for students holding a baccalaureate degree which meets the teaching field requirements at the T-4 level in art education, social science education, science education, and language education. The program allows two options, one leading to T-4 certification upon completion of Phase I courses and subsequently to T-5 certification, and the other leading directly to T-5 certification upon completion of the entire program.

General information concerning programs and procedures relating to graduate professional personnel certification may be obtained from the Student Services Center, College of Education.

Certificate Programs

Conservation Ecology and Sustainable Development

The University of Georgia offers a certificate in conservation ecology and sustainable development through the Institute of Ecology. Students who earn this certificate will receive interdisciplinary preparation to handle the unique, multi-disciplinary problems associated with working in the area of conservation and sustainable development. Students in the natural sciences will add a social science perspective to their understanding of the ecology of development, and students in the social sciences will learn ecological principles so that their decisions can be grounded in biological fact.

The graduate certificate program requires a student to complete at least 30 hours of credit. The program of study must include four core courses: ECL 608, *Principles of Conservation and Sustainable Development I* (5 hrs.); ECL 614, *Principles of Conservation and Sustainable Development II* (5 hrs.); a seminar elective in conservation and sustainable development (3 hrs.); and ECL 840, *Perspectives on Conservation Ecology and Sustainable Development* (1 hr., repeated three times). The remaining hours of credit (at least 14) will be made up by elective courses selected from a list of approved courses. One or more of these courses may jointly fulfill the requirements in the graduate degree program of their department or school. The graduate student and his/her advisor in the student's academic department plan the

program of study to fulfill the requirements of the certificate program.

Any graduate student in a natural science or a social science degree program at The University of Georgia is eligible to apply for admission to the certificate program. Application to the program should be made by filling out an application form available from the Coordinator of the Conservation Ecology and Sustainable Development Program. Applications may be received and acted upon at any time. Acceptance is provisional until the candidate's proposed program of study is approved.

For more information about the program, contact the current program director, Dr. C. Ronald Carroll in the Institute of Ecology, Ecology Building, (706) 542-2968.

Environmental Ethics

The University of Georgia has a Faculty of Environmental Ethics; a certificate program at the graduate level; and a variety of courses devoted partially or entirely to issues of values and the environment.

The Certificate in Environmental Ethics. This certificate is awarded to graduate students meeting the following requirements: The completion of at least 28 hours of graduate work, including at least 21 hours of graduate course work in approved courses along with an approved research paper in environmental ethics designated for at least 5 hours of graduate credit. All candidates are required to take the following courses: ETH/PHY 618, *Environmental Ethics*; ETH/ECL 620, *Ecological Concepts*; ETH/PHY 651, *Technology and Values*, or PHY 605, *Ethical Theory*; and ETH 600, *Environmental Ethics Seminar*, as a common core. In addition, all candidates are required to pass an oral exam.

Other courses may be chosen by the student, with the approval of the graduate coordinator, from a list provided, according to his or her individual interest and career objectives, with the provision that no more than 15 hours of course work for credit toward the certificate may be applied from any one academic field. Work on the certificate may be undertaken by any graduate student at the university.

To be admitted to the certificate program, the student must be admitted to the University as a prospective candidate for a graduate degree, a professional degree, or as a nondegree candidate (see General Regula-

tions of the Graduate School Bulletin), and then make application to the graduate coordinator of the Faculty of Environmental Ethics. The nondegree candidate status applies to the person who already holds a master's or doctor's degree from an accredited institution and who wishes to take graduate courses without becoming a candidate for a degree. All prospective recipients of the certificate should be admitted to a school or college of the University and be assigned an advisor. The student and his or her advisor can then plan the program of study that will be a part of the student's application for acceptance into the environmental ethics program. The current graduate coordinator of the Faculty of Environmental Ethics is Dr. Peter G. Hartel, Department of Crop and Soil Sciences, (706) 542-0898.

Gerontology

The University of Georgia has a strong commitment to gerontology training. Graduate training in gerontology is directed through the Gerontology Center located in Candler Hall. A graduate certificate of gerontology is awarded by the Gerontology Center. The Georgia Center for Continuing Education also has a gerontology program which provides training in gerontology for continuing education credits.

The Gerontology Center. The major purpose of the Gerontology Center is to coordinate and promote activities throughout the University relating to aging. The center's primary responsibilities are to coordinate graduate training and research and to promote faculty development in gerontology. There is a Faculty of Gerontology associated with the Gerontology Center which consists of approximately 43 faculty members from 27 different academic departments on campus. Additionally, the center has a full-time director, Dr. Leonard Poon, and Assistant Directors Dr. Everett Lee and Dr. Nancy Kropf. The Faculty of Gerontology, chaired by Dr. Poon, oversees pre- and postdoctoral training, research and service in the process of aging, as well as the application of knowledge to practice. The center also serves as a liaison between the activities and resources of the University and federal, state, and local funding agencies and interest groups. The Gerontology Center regularly sponsors conferences and speakers on a broad range of

topics at the national, regional, and local level.

Graduate Certificate in Gerontology. The Gerontology Center awards a Certificate in Gerontology to graduate students meeting certain requirements. These include the completion of at least 25 quarter hours of graduate course work in aging along with five hours of field experience or five hours of research. All candidates are required to take GNT 600, a five-hour interdisciplinary seminar in aging. Other courses may be chosen by the students according to their individual interests or career objectives with the provision that remaining courses be directly related to gerontology. To assure the interdisciplinary nature of the program, students may apply no more than ten quarter hours of credit toward certification requirements in any one academic department.

Students must select a track or emphasis for their certificate work. Two tracks are available: research track and practitioner track. Students must take courses from each track with the majority of courses coming from the track in which students select to concentrate for their certificate work. Students who select the research track must either (1) submit a thesis or dissertation completed to meet requirements in their department or (2) complete an individual research project. Students who select the practitioner track are required to complete a practicum in a gerontological setting. Regardless of which track is chosen by the students, their project must be approved by the director or assistant director of the Gerontology Center.

Work on the certificate may be undertaken by any graduate student at the university. Courses that may be applied toward the certificate are found in the following academic units: adult education; cellular biology; child and family development; foods and nutrition; health promotion and behavior; housing and consumer economics; pharmacy; psychology; recreation and leisure studies; social work; and sociology.

To be admitted to the certification program, the student must be admitted to a department of the university at the graduate level—either as a prospective candidate for a graduate degree or as a nondegree candidate—and then make application to the Assistant Director of Gerontology Center. The nondegree candidate status applies to the person who meets requirements for ad-

mission to the Graduate School but who wishes to take graduate courses without becoming a candidate for a degree. The prospective recipient of the certificate should be admitted to a department of the university and be assigned an advisor. The student and his/her advisor can then plan the program of study that will be a part of the student's application for acceptance into the gerontology program.

The following is a list of courses available in each track or emphasis of the certificate program.

Research Track:

- CFD 650 Second Half of Life
- CFD 695 Family Development
- CFD 895 Seminar in Child and Family Development
- EAD 809 Adult Development and Instruction
- FDN 680 Geriatric Nutrition
- GNT 800 Advanced Topics in Gerontological Research and Theory
- PSY 606 Psychology of Aging
- PSY 879 Advanced Seminar in Social Psychology
- PSY 883 Cognition and Aging
- SOC 665 Sociology of Aging
- CB 634 Biology of Aging
- Thesis or dissertation in department to meet research requirements

Practitioner Track:

- EAD 607 Survey of Educational Gerontology
- FDN 700 Nutrition Related to the Human Life Cycle
- GNT 639 Service-Learning with the Elderly
- GNT 801 Advanced Topics in Gerontology Practice
(Both GNT courses may be used to complete the practicum requirement.)
- HCE 681 Housing for the Elderly
- HCE 768 Management for Families with Special Needs
- HPB 717 Aging and Health
- REC 738 Leisure and Aging
- SW 721E Social Work with Adults and the Aged: Public Policy
- SW 722E Social Work with Adults and the Aged: Issues
- SW 788 Assessment and Psychopathology: Adults and the Aged

For further information concerning the Gerontology Center or the certification program, call Dr. Leonard W. Poon, Chairman of the Faculty of Gerontology and Director of the Gerontology Center (706) 542-3954.

Global Policy Studies

The University of Georgia has a Center for the Study of Global Issues which offers a certificate in global policy studies at the graduate level.

The Center for the Study of Global Issues explores and develops interdisciplinary and interprofessional programs of instruction, research, and service on a wide range of global issues. It administers undergraduate and graduate certificate programs in global policy studies; sponsors instructional and research-oriented symposia, seminars, lectures, and publications; and serves as a focal point for those interested in foreign languages and international studies both inside and outside the university.

The certificate program in global policy studies is designed to provide students with an international perspective as well as specialized, technical knowledge and skills. Graduate students earn the certificate as a supplement to a regular degree program. The certificate program blends well with disciplines which have traditionally prepared individuals for international service, e.g., business, economics, foreign languages, history, law, and political science. It is also designed for individuals in fields which have not traditionally offered international curricula, such as accounting, agriculture, education, forestry, journalism, nutrition, and plant sciences.

Most new students enrolled in a degree or professional program will find that they can satisfy the certificate requirements with few, if any, additions to their regular program of study. Many departments offer courses which simultaneously meet both certificate and degree requirements. Students applying to the university who are interested in the certificate program should contact the Center for Global Policy Studies for assistance in processing their application.

The requirements for the certificate include 40 quarter hours of course work, including a 15-hour core sequence, a 15-hour substantive specialty, a 10-hour skill requirement, an internship, and a paper requirement. Certificate students must take a minimum of 30

quarter hours of this course work in residence at The University of Georgia.

The core sequence consists of three courses: (1) a course with global scope in the discipline in which the individual plans to develop his or her substantive specialty; (2) a relevant course in a foreign area or region, such as Africa, Asia, Europe, Latin America, or the Middle East (students who are doing their substantive specialty in a foreign area or region should take this course in a cognate discipline instead); and (3) GPS 600. This course will cover the planning, implementation, and evaluation of policies designed to deal with global problems, especially development.

The substantive specialty is composed of three courses that constitute a coherent area of concentration relevant to global policy studies. Many of these substantive specialties are identified by discipline, issue, or region, such as economics, development, or African affairs.

The professional skill requirement refers to competence in a foreign language or other relevant research or policy skill. Ten hours in a foreign language beyond the 104 level at The University of Georgia or the equivalent as determined by standardized proficiency tests is required.

The internship requirement consists of practical work experience in a student's chosen area. This requirement may be satisfied by an actual internship course or an equivalent field experience.

There is also a requirement for a substantial paper on a global subject. This paper may be a master's thesis, a doctoral dissertation, or a paper suitable for presentation at a professional meeting.

Finally, certificate students must have at least one of these courses in a second or cognate discipline in addition to the interdisciplinary course in global policy analysis. A total of 30 quarter hours of work in this certificate program must be taken at The University of Georgia.

For further information concerning the certificate program, write Dr. William O. Chittick, Coordinator, The Center for the Study of Global Issues, The University of Georgia, Baldwin Hall, Room 303, Athens, GA 30602-1615, or call (706) 542-2116.

Historic Preservation Studies

With the passage of the National Historic Preservation Act of 1966, Congress declared historic preservation a part of national policy and authorized various programs to assist in the identification and perpetuation of those cultural resources which represent our national patrimony. Over the past 30 years much progress has been made in the documentation and preservation of our heritage. This progress has stimulated increased interest in the cultural environment as well as a desire, among many, to achieve a greater understanding of which elements constitute our heritage and how they may be protected for future generations.

Objectives of the Program:

- (a) To develop within students an awareness of the contributions which historic resources make to the quality of environments and to the quality of life available to the general populace.
- (b) To foster an understanding of historic preservation needs, problems, and opportunities and the role which individual citizens can play in the protection and perpetuation of historic resources.
- (c) To prepare students, as citizens within their respective communities, to serve as volunteer members of citizen preservation organizations and/ or government commissions and to provide informed leadership to these and any other community preservation efforts.
- (d) To provide students an opportunity to study historic preservation as a part of their academic program or as a supplemental educational opportunity available to graduates.

Curriculum: The certificate program requires a student to complete 30 hours of credit. These must include the 15 hours of certificate core requirements with the remaining 15 hours to be selected from the historic preservation curriculum. Five hours of the certificate requirements may be satisfied by a preservation-related thesis in the student's academic department. The proposal for these theses must be jointly approved by the graduate coordinator, or major professor, of the student's degree program and the graduate coordinator for Studies in Historic Preservation.

For additional information contact John C. Waters, Graduate Coordinator for Studies in Historic Preservation, (706) 542-4706.

Marriage and Family Therapy

The Pre-Professional Graduate Certificate Program in Marriage and Family Therapy is designed to provide an interdisciplinary program for graduate students interested in the applied field of marriage and family therapy. The certificate program involves three units of The University of Georgia: the College of Education, the College of Family and Consumer Sciences, and the School of Social Work. Completion of the requirements for the certificate program will provide a strong academic basis preparing the student to undertake further supervised clinical training in marriage and family therapy. The certificate program is not intended to provide all the training necessary to function as an independent professional nor to meet all the requirements for (a) state licensure as a marriage and family therapist or (b) clinical membership in the American Association for Marriage and Family Therapy. Graduate courses that may be used to fulfill requirements for the certificate program are offered in several units of The University of Georgia including the Department of Child and Family Development, the Department of Counseling and Human Development, and the School of Social Work.

Any graduate student in the previously mentioned or related programs at the University is eligible to apply for admission to the certificate program. Individuals who do not enter a graduate program of study may enroll in the Marriage and Family Therapy Post-Graduate program for continuing education credit. Contact Trudy Cain, Georgia Center for Continuing Education, Athens, GA 30602-3603, (706) 542-5654.

To be admitted to the program, the student must be admitted to the department of the university at the graduate level and then make an application to the Coordinator of the Faculty of Marriage and Family Therapy Certificate Program. The graduate student and his/her advisor in the student's academic department plan the program of study to fulfill the requirements of the certificate program. With appropriate approval, courses in the certificate program may also apply to the degree program in the student's academic department. For master's degree students, the certificate will be awarded upon completion of the certificate requirements and completion of the master's degree program in which the student is enrolled. For

students already holding a master's degree, the certificate will be awarded at the end of the quarter in which the certificate requirements are satisfied.

For further information concerning the certificate program, contact the Coordinator, Dr. Jerry E. Gale, Department of Child and Family Development, College of Family and Consumer Sciences, The University of Georgia, Dawson Hall, Athens, GA 30602-3622, (706) 542-2650.

Women's Studies

The Women's Studies Program offers a 25-hour graduate certificate in women's studies. The certificate is available to those students who are pursuing a graduate degree in any of the university's schools or colleges or to those who already hold a graduate degree. The purpose of the certificate is to expose students to the rapidly expanding interdisciplinary scholarship on women which might otherwise be neglected in their traditional curricula.

All certificate candidates are required to take the two following courses: WS 601, *Introduction to Feminist Theory*, 5 hours, and WS 701, *Women and the Construction of Knowledge*, 5 hours (prerequisite: WS 601). A student who has done extensive undergraduate or graduate course work in feminist theory may waive WS 601, without credit and substitute another approved course by petitioning the program. The 15 remaining hours may be drawn from core and related courses. Core courses are devoted exclusively or primarily to topics pertaining to women or gender. Related courses, while not having a major focus on women or gender, have units devoted to these topics or provide opportunities for students to structure their independent research and reading on women's studies.

The following courses are representative of core courses:

ART 603	Women in Art. 5 hours.
CFD 662	Women in the Family and Society. 5 hours.
CLC 611	Gender and Greek Religion. 5 hours.
DRA 628	Women in Performance. 5 hours.
EEN 813	Seminar on the Images of Women and Minorities in Literature for Young People. 5 hours.

EFN 710	Gender and Education. 5 hours.	WS 610	Lesbian and Gay Studies. 5 hours.
ENG 660T	Women and Literature. 5 hours.	WS 612	Biology and Politics of Women's Reproduction. 5 hours.
ENG 687T	Folklore Studies. 5 hours.	WS 625	Special Topics in Women's Studies. 5 hours.
ENG 886T	Seminar in Feminist Literary Theory. 5 hours.	WS 699	Directed Research in Women's Studies. 1-5 hours.
HIS 615W	Women in American History and Culture. 5 hours.	WS 802	Seminar in Advanced Feminist Theory. 5 hours.
HIS 679B	Women in Japanese History. 5 hours.		
HPB 720	Women in Health and Illness. 5 hours.		
LIN 687	Language, Gender and Culture. 5 hours.		
LS 650	Employment Law. 5 hours.		
MUS 625	Women and Music. 5 hours.		
PES 725	Women and Sport. 5 hours.		
PSY 610	Psychology of Women. 5 hours.		
REC 732	Women and Leisure. 5 hours.		
REL 644	Women in Christian History. 5 hours.		
SOC 828	Seminar in Gender Stratification. 5 hours.		
SOC 838	Seminar in Sociological Analysis of Gender. 5 hours.		

No more than 10 quarter hours may be taken with the same instructor; no more than 10 quarter hours may be taken in the same department (except in Women's Studies); no more than 5 quarter hours may be transferred from another institution.

For a complete listing of core, related, and special topics courses in women's studies and for an application to the certificate program, contact Dr. Patricia Del Rey, Director of Women's Studies, or Heather Kleiner, Associate Director, 230K Main Library, Athens, GA 30602-1647, (706) 542-2846.

Course Offerings

76-9661



African American Studies (AAM)

R. Baxter Miller, *Director*
Institute for African American Studies,
542-5197
(Psychology Building)

Currently, the Institute arranges for collaborative graduate work with the departments of English, history, drama, comparative literature, adult education, and psychology. Please consult any joint listings in the areas. Recent recruitment of new talent to the faculty prompts innovative developments in political science. Exciting venues are expected soon with Romance languages and sociology as well. Flexibly coherent programs should demonstrate disciplinary rigor along with brave new inquiries into fresh methods of scholarly integration. Especially, the Institute works to facilitate and authorize interdisciplinary options for diverse African Americanists of all kinds.

613. (PSY) Classic Studies in Black Psychology. 5 hours.

Prerequisite: AAM/PSY 315 or permission of department.

Studies which have had major social or scientific impact on a) the lives of Black Americans and b) the way Black people have been viewed within psychology. Approach will be historical and interdisciplinary.

631. (REL) Afro-American Religious History. 5 hours.

See REL 631.

632. (PSY) Psychology of Prejudice. 5 hours.

Prerequisite: PSY 101 or SOC 105.

Motivational, cognitive, social and cultural factors that lead to discrimination in our society and various perspectives found in discrimination literature.

633. (REL) Southern Religious History. 5 hours.

See REL 633.

634. (REL) The Bible in the Black Church. 5 hours.

See REL 634.

688. (ENG) Topics in African American Literature. 5 hours. (Max. 10 hours.)

See ENG 688.

Agricultural and Applied Economics (AAE)

Robert N. Shulstad, *Head*
Jack E. Houston, *Graduate Coordinator,*
542-0755
(Conner Hall)

Graduate study in agricultural economics is offered at both the masters and doctoral level. Degree programs available in agricultural economics include: 1) a Master of Science (MS) degree consisting of a minimum of 40 hours of course work and five hours of thesis; 2) a Master of Agricultural Economics (MAE) degree consisting of a minimum of 64 hours of course work and a technical report in lieu of a formal thesis; and 3) a Doctor of Philosophy (PhD) degree consisting of a minimum of 90 hours of course work beyond the bachelor's degree and a formal dissertation.

Graduate instruction and research may be undertaken in the following fields of specialization: 1) agricultural marketing; 2) agricultural business management; 3) production economics; 4) farm management; 5) agricultural policy; 6) agricultural finance; 7) agricultural prices; 8) natural resources; and 9) community resource development.

Graduate research is coordinated with the department's overall research program. Students may select a research topic related to the department's current research projects or an approved area of sponsored research in the Agricultural Experiment Station. A wide range of computer facilities are available for departmental research.

Financial assistance is available to graduate students on a competitive basis in the form of departmental research assistantships. Paid internships are also available from regional and national agribusiness firms.

602. Advanced Farm Organization and Management. 5 hours.

Prerequisite: AAE 301 or permission of department. Analysis of economic facts of individual farm plans and formation of economic models which postulate optimum allocation of land, labor and capital as guides for maximum revenue.

621. Production Economics: Theory with Applications. 5 hours.

Prerequisite: AAE 358.

The application of fundamental economic principles in determining efficient adjustments in agricultural resource use consistent with economic growth, and changing technology and economic conditions.

651. Farm Appraisal. 5 hours.

Prerequisite: AAE 258 or permission of department. An application of the methods of appraisal to farm property. A study of the factors influencing farm land and building values. The relationship of land use, soils, crops, livestock, buildings, and other factors to farm value.

658. Microeconomics: Theory with Applications. 5 hours.

Four lectures and one 2-hour lab period.

Prerequisite: AAE 358 or equivalent.

Partial and general equilibrium analyses in the study of efficient resource allocation among households and firms. Perfect and imperfect output and input markets are investigated in terms of economic efficiency.

661. Quantitative Techniques in Agricultural Economics. 5 hours.

Prerequisite: AAE 258 or permission of department.

The application of basic quantitative techniques to agricultural economic theory, emphasizing basic models used in the study of prices, marketing and production.

663. Mathematical Programming in Agriculture and Natural Resources. 5 hours.

Prerequisite: AAE 658.

Application of mathematical programming to agriculture. Linear, separable, integer, quadratic, and dynamic programming techniques as they apply to problems in agricultural and natural resource systems.

671. Rural Economic Development and Growth. 5 hours.

Prerequisite: AAE 258 or permission of department.

The relationship of inputs and outputs between agriculture and agricultural businesses; analysis of factors affecting development and economic growth in developing areas.

676. Intermediate Agricultural Prices. 5 hours.

Prerequisite: [AAE 658 and 661] or permission of department.

The integrated use of price theory and statistical techniques that allows the student to advance beyond the introductory level of analyzing agricultural prices.

680-680L. Water Resource Economics. 5 hours.

Four lectures and two 1-hour lab periods.

Prerequisite: AAE 258 or equivalent.

A study of the economic aspects of the use, supply, development and management of water resources with special emphasis on river basin and project planning, benefit-cost analyses, water demands and multiple-use management of water resources.

687. (FIN) Commodity Markets. 5 hours.

Prerequisite: Permission of department.

Development, functions, and importance of commodity markets, principles and mechanics of trading commodities on future markets. Includes study of speculation, hedging and roles of commission houses, commodity exchanges, clearinghouses. Analysis of technical and fundamental trading theories and use of future contracts as instruments for financing business activities.

693. Environmental Law and Governmental Regulation. 5 hours.

Prerequisite: AAE 258 or permission of department.

Introduction to regulatory theory, externalities and market failures, definition of key regulations affecting agribusiness, overview of local government law, and delineation of environmental laws relating to agriculture. Current environmental issues are related to statutory, administrative, and regulatory authorities.

696. International Agricultural Trade. 5 hours.

Prerequisite: [AAE 358 and 658] or equivalent.

Trade theory and an analysis of agricultural policies among nations.

698. Agribusiness Management. 5 hours.

Prerequisite: [AAE 304 or 310] and [AAE 211 or ACC 110].

Provides a broad overview of the basic skills needed to be an effective manager of an agribusiness and to help the student achieve perspective on applying and integrating these skills into a workable approach to management; provides a step-by-step approach to the application of basic practical management skills in marketing, demand analysis, forecasting, finance, plant operations and personnel.

700M. Master's Research. 1-15 hours. (Max. 60 hours.)

Prerequisite: Permission of department.

Research while enrolled for a master's degree under the direction of faculty members.

730M. Master's Thesis. 1-15 hours. (Max. 60 hours.)

Prerequisite: Permission of department.

760. Environmental Economics and Policy Analysis. 5 hours.

Prerequisite: AAE 358-358L or equivalent.

Environmental policy in both mathematical and intuitive economics including externalities, policy instruments, and implementation. Concepts are

Agricultural and Applied Economics

applied to U.S. environmental policy toward air and water pollution, hazardous substances, and implementation of environmental law.

786. (FRS) Resource Economics and Management. 5 hours.
See FRS 786.

800. Special Readings in Agricultural Economics. 5 hours. (Max. 15 hours.)
An in-depth study of the literature, the concepts and analytical tools for production economics, marketing or resource economics. Extensive assignments in the student's area of interest.

801. Seminar in Agricultural and Applied Economics. 1 hour. (Max. 5 hours.)
Prerequisite: AAE 658.
Current topics in agricultural policy, production, marketing, development, trade, agribusiness management and/or natural resources. Theoretical and methodological issues, empirical analyses, and firm/industry/academic policy and other research issues will be addressed.

802. Topics in Agricultural and Applied Economics. 2-5 hours. (Max. 15 hours.)
Prerequisite: Permission of department.
Topics in agricultural policy, production, marketing, development, trade, agribusiness management and/or natural resources. Theoretical and methodological issues, empirical analyses, firm/industry policy, and other issues will be addressed.

808. Production Economics: Theory and Application. 5 hours.
Prerequisite: AAE 658 and [AAE 661 or equivalent].
Economic theory of production, duality, applications and modeling.

810. Applied Resource Policy and Project Analysis. 5 hours.
Prerequisite: [AAE 658 or equivalent] or permission of department.
Advanced economic analysis of contemporary rural natural resources, environmental policies, and agricultural policies and projects. Application of theory and techniques to local, state, and national problems and issues, particularly those affecting rural areas, is emphasized.

812. (EHS) Roles and Responsibilities of Environmental Policy Makers. 3 hours.
See EHS 812.

814. Consumer Demand Theory. 5 hours.
Prerequisite: AAE 658 and [STA 422/622 or equivalent].
A primarily theoretical treatment of consumer demand. Utility theory and its assumptions, consumer behavior theory, and problems of application in agricultural economics are included.

821. Agricultural Programs and Policy. 5 hours.
An analysis of alternative governmental programs and policies as they relate to the solution of specific agricultural problems.

830. Agricultural Economics Research. 3 hours.
Prerequisite: Twenty hours of graduate credit, including AAE 658 and [STA 421/621 or equivalent].
Methodology, techniques and guidance for individual research in problems of agricultural economics.

840. Agricultural Market Structure and Analysis. 5 hours.
Prerequisite: AAE 658 or permission of department.
The role of the market in economic development and evaluation of structure, conduct and performance in the U.S. agribusiness sector. Problems of market coordination and associated policy issues are investigated.

870. (ECL) Environmental Policy and Management. 5 hours.
See ECL 870.

871. Advanced Agricultural Development and Growth. 5 hours.
Prerequisite: [(AAE 471/671 and ECN 410) or equivalent] and permission of department.
Analysis of major economic problems of the agricultural sector of developing countries, and a study of policy instruments which have been used to resolve these problems.

875. Natural Resource and Environmental Economics. 5 hours.
Prerequisite: [AAE 658 and (ECN 460/660 or 480/680)] or equivalent and permission of department.
Advanced theoretical and empirical concepts related to management of natural and environmental resources. Major theoretical concepts will provide a basis for examination of efficient production and consumption allocation decisions related to natural resources. Emphasis will center on economic, institutional and legal aspects which prevent private markets from efficiently valuing resources.

876. Topics in Natural Resource and Environmental Economics. 5 hours. (Max. 10 hours.)
Prerequisite: AAE 658.
Classical and contemporary topics in natural resource and environmental economics following a seminar/discussion format.

880. Dynamic Optimization in Agricultural and Resource Economics. 5 hours.
Prerequisite: AAE 658 and ECN 869 and 896.
Theory and application of dynamic optimization and optimal control techniques relevant to agricultural and resource economics. Topics covered

include: calculus of variations, the maximum principle, dynamic programming, and both open-loop and closed-loop optimal control.

900D. Doctoral Research. 1-15 hours. (Max. 60 hours.)

Prerequisite: Permission of department. Research while enrolled for a doctoral degree under the direction of faculty members.

930D. Doctoral Dissertation. 1-15 hours. (Max. 60 hours.)

Prerequisite: Permission of department.

Agricultural Extension (AET)

F. Richard Rohs, *Program Head and Graduate Coordinator, 542-2713 (Lumpkin House)*

The purpose of the graduate program in agricultural extension is to provide an opportunity for Cooperative Extension Service personnel and others to broaden and strengthen their base of technical knowledge and add the dimension of human and social relations that is essential if one is to perform effectively the duties of a general adult/youth educator within the context of the public service function of the University.

The curriculum leading to the Master of Agricultural Extension (MAEXT) degree focuses on understanding the Cooperative Extension Service and how it works. Individual programs are built around the candidate's need for additional training in appropriate subject matter, human relations, communications, management, Cooperative Extension Service organization and methods, and informal teaching-learning.

Opportunities for study and research are offered in the Extension Education Department, College of Agricultural and Environmental Sciences, other departments and divisions in the College of Agricultural and Environmental Sciences, College of Family and Consumer Sciences, School of Forest Resources, other schools and colleges in the University and in the Cooperative Extension Service.

700. Evaluation in Extension. 5 hours.

The course is designed to prepare Extension Agents to identify and select evaluation models, collect and analyze data and relate evaluation to program change for local extension educational programs.

704. Creative Programming for 4-H and Youth. 5 hours.

History, philosophy and organizational structure of Cooperative Extension 4-H and Youth Education; emphasis upon the needs of youth, teaching, program planning and evaluation methods, the management of human, program and financial resources necessary for 4-H youth work.

705. Communications in Cooperative Extension. 5 hours.

The use of communications media in Cooperative Extension work, with special emphasis on mass communications. (Not open to students with credit in AGR 505.)

706. Natural Resources Extension: Programming and Applications. 5 hours.

Prerequisite: Graduate standing plus one year of experience in Extension or closely related work, or with permission of department.

This course will introduce students to Extension programs in Natural Resources; planning, implementation and evaluation; principles, procedures and techniques in providing Extension Natural Resources Services; and methods for disseminating educational services to youths and adults.

707. Program Building in Extension. 5 hours.

Prerequisite: Graduate standing plus one year of experience in extension or closely related work.

A study of the basic problems, principles and procedures involved in program development in Cooperative Extension work.

708. Agricultural Extension Administration. 5 hours.

Prerequisite: Graduate standing plus one year of experience in extension or closely related work.

A seminar in the organization, administration, operation, and evaluation of the Cooperative Extension Service and its educational programs.

710. Practicum in Cooperative Extension. 5-10 hours. (Max. 10 hours.)

Prerequisite: Candidate selection by the Cooperative Extension Service and permission of department.

This course permits selected students to gain experience in leadership roles in the Cooperative Extension Service by working along with current leaders in a learning laboratory situation.

921. Problem Analysis in Cooperative Extension Work. 5 hours.

Prerequisite: Open only to candidates for the MAExt degree.

Functional study of a topic or problem in Cooperative Extension significant to the candidate's area of work.

Agriculture (AGR)

619. (ETH) Agricultural Ethics. 2 hours.

Discussion of ethical issues in agriculture. Among the topics considered are obligations towards the land, animal rights, sustainability of world agricultural resources, and world hunger.

Animal and Dairy Science (ADS)

Larry L. Benyshek, *Head*
George B. Rampacek, *Graduate*
Coordinator, 542-1852
(*Livestock-Poultry Building*)

The Doctor of Philosophy degree in animal and dairy science is offered with the opportunity to specialize in animal breeding, nutrition, physiology of reproduction, meats and muscle biology, and animal production. The program leading to the PhD degree in animal nutrition is also available to animal and dairy science students.

Graduate programs leading to the Master of Science degree in either animal science or dairy science are offered in all general areas of animal and dairy science. These programs are flexible enough to interest students who may want to consider the MS degree as a terminal degree and are also designed to accommodate those graduates who want to use the MS degree as a preparatory step toward the PhD degree. Courses in the department and appropriate courses in poultry science, biochemistry, statistics, microbiology, veterinary physiology, and other departments provide in-depth training and laboratory experience. Amino acid analyzers, gas-liquid chromatographs, a flame spectrophotometer, a gas flow Gieger tube

detector, a whole body counter, an atomic absorption spectrophotometer, a sonoscope, a high pressure liquid chromatograph, liquid scintillation counters, gamma counters, ultracentrifuge, enzyme kinetic spectrophotometer, scanning and transmission electron microscopes, electrophoresis equipment, tissue culture incubators and other equipment are available for use in teaching and research. Research facilities include laboratories equipped to handle radioisotopes and many chemical and biological analyses, small and large animal metabolism rooms and equipment, large animal surgery laboratory, and research facilities on swine, horse, beef cattle, and dairy cattle farms located near the campus and in the state. Service of the University Computer Center is available for data processing.

Prospective students who desire financial aid may apply for assistance directly to the animal and dairy science department. A limited number of teaching and research assistantships for training students in both research and teaching and assistance to the faculty are available. Other assistantships are available through the Graduate School and application for these should be made directly to the graduate coordinator. Additional courses related to animal nutrition are listed under animal nutrition.

611-611L. Experimental Methods in Animal Biotechnology. 5 hours.

Prerequisite: BCH/BIO 310 or MIB 350-350L or permission of department.

An introduction to laboratory methods in molecular biology stressing recombinant DNA techniques. Experiments will include recombination, cloning, restriction analysis techniques, and optional experiments chosen by students.

615. Microbial Ecology of the Rumen. 5 hours.

Prerequisite: BCH 402/602 or MIB 409/609 or permission of department. Undergraduate enrollment will be restricted.

A detailed analysis of the rumen microbial ecosystem that will examine the biochemistry, ecology, nutrition, physiology, and taxonomy of rumen microorganisms. The symbiotic relationship between rumen microorganisms and the nutrition of the ruminant animal will be emphasized. Manipulation of rumen fermentation to maximize host-animal production will also be covered.

617-617L. (FS) Experimental Techniques in Meat Science and Muscle Biology. 4 hours.

Prerequisite: BCH 402/602 and/or STA 422/622 and/or BCH 802 or permission of department.

Basic methods in laboratory techniques in meat science. Experiments will familiarize students from a wide variety of backgrounds with a number of laboratory techniques including lipogenesis, muscle histology, enzyme kinetics and muscle metabolism.

636. (AN) Ruminant Nutrition. 5 hours.

See AN 636.

637. (AN/PS) Monogastric Nutrition. 5 hours.

See AN 637.

641-641L. Applied Animal Reproductive Management. 5 hours.

Prerequisite: ADS 311, 331 and 340 and ADS 360-360L or 361-361L or 362 or 363.

This course deals with management of reproduction in farm animals for efficient livestock production. Application of reproduction management principles associated with artificial insemination, embryo transfer, pregnancy detection, semen collection and reproductive record management will be covered.

689-689L. (FS) Advanced Meat Science I. 5 hours.

Prerequisite: STA 422/622 or permission of department.

An advanced study of the methods utilized in the determination of body composition, muscle quality and palatability of meat animals. The course covers the historical aspects of grade standards as well as the important scientific methodology and techniques used to conduct research and interpret information on composition and quality/palatability.

700M. Master's Research. 1-15 hours. (Max. 30 hours.)

Prerequisite: Permission of department. Research while enrolled for a master's degree under the direction of faculty members.

730M. Master's Thesis. 1-15 hours. (Max. 20 hours.)

Prerequisite: Permission of department.

809. Introduction to Quantitative Genetics of Livestock Improvement. 3 hours.

Prerequisite: ADS 311, STA 422/622.

An introduction to the population genetic theory associated with livestock populations and their quantitative genetic improvement.

810. Statistical Methods in Animal and Dairy Science. 4 hours.

Prerequisite: STA 422/622 or equivalent and CS 500/700 and MAT 516/716 or permission of department.

A study of experimental designs and statistical procedures particularly applicable to animal research with emphasis on multiple regression and least squares analysis.

811. Advanced Quantitative Genetics of Livestock Improvement. 4 hours.

Prerequisite: MAT 516/716 and STA 422/622 and 414/614 or ADS 809 or permission of department. Advanced study of population and quantitative genetics.

840. Advanced Animal Reproduction. 5 hours.

Prerequisite: ADS 340, VPH 608. The physiological mechanisms associated with reproduction in farm animals will be studied in depth. Recent concepts on the interaction of the reproductive endocrine system, the mechanism of hormone action and hormone measurement will be studied. The reproductive processes from follicular development through parturition will be thoroughly analyzed with emphasis placed on the control of those processes.

870, 871. Special Problems in Animal and Dairy Science. 5 hours each.

Prerequisite: Permission of department. Library and laboratory problems dealing with different phases of livestock production.

873. Special Problems in Dairy Technology. 2-5 hours.

Prerequisite: Permission of department. A special course for students qualified to carry out individual projects in dairy production, bacteriology or manufacturing. Work is done independently of the regularly scheduled classes. The course is available only to advanced graduate students and with the consent of the major professor.

880. Graduate Seminar. 1 hour per quarter (Max. 6 hours.)

Prerequisite: Permission of department. Weekly meetings devoted to discussion of research problems.

900D. Doctoral Research. 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of department. Research while enrolled for a doctoral degree under the direction of faculty members.

930D. Doctoral Dissertation. 1-15 hours. (Max. 30 hours.)

Prerequisite: Permission of department.

Animal Nutrition (AN)

Gene M. Pesti, *Graduate Coordinator,*
542-1351
(*Livestock-Poultry Building*)

This program is interdepartmental, including the Departments of Animal and Dairy Science, and Poultry Science. It embraces both the basic and applied phases of nutrition including the metabolism, biochemistry, and physiology of minerals, lipids, carbohydrates, proteins, vitamins, etc., in monogastric and ruminant animals. Strong collateral support, through course offerings and research cooperation, also is available in the areas of biochemistry, physiology, genetics, statistics, veterinary medicine, and microbiology. Facilities for research include adequately equipped nutritional, biochemical, and physiological laboratories, experimental animal quarters for many farm and laboratory species and instrumentation for many types of metabolic studies including, for example, the use of isotopes. The goal is to provide a challenging program, supplying opportunity for students to develop their creative ability to the point where their knowledge and motivation will enable them to make major contributions and assume leadership in the nutrition profession.

636. (ADS) Ruminant Nutrition. 5 hours.
Prerequisite: AS 330, VPH 310, CHM 240, and BCH 310.

An in-depth study of digestive physiology and metabolism of the rumen. Treats systematically the diversity of function, complex symbiotic relationships of the rumen microfloramicrofauna, and the physiology and metabolism of the rumen as related to digestion, absorption and utilization of nutrients. Provides a framework in which practical applications can be evaluated.

637. (ADS/PS) Monogastric Nutrition. 5 hours.
Prerequisite: AS 330, CHM 240, and VPH 310 or PS 380.

An advanced course in the comparative nutrition of monogastric animals with special but not exclusive consideration of poultry and swine. Guided studies of the literature of nutrition will be made

enabling the student to witness the discovery of nutrition principles and to distinguish between established fact and unsolved problems.

831. Bioenergetics in Animal Nutrition. 3 hours.
Prerequisite: AS 330, VPH 310 or PS 380, CHM 240, BCH 401/601.

A detailed treatment of energy transformations in animals. Application of thermodynamic principles to the conservation and conversion of energy in animals. The energy values of feedstuffs as determined by various methods will be evaluated. (Offered alternate years.)

832. Vitamins in Animal Nutrition. 3 hours.
Prerequisite: AS 330, VPH 310 or PS 380, CHM 240, BCH 401/601 and/or permission of department.

A comprehensive and systematic treatment of the chemistry and physiology of the vitamins and their roles in animal metabolism. Integrates cellular biochemistry and physiology of the vitamins. (Offered alternate years.)

833. Minerals in Animal Nutrition. 3 hours.
Prerequisite: ADS 330, VPH 310 or PS 380, BCH 401/601.

A treatment in depth of the role of minerals in animals from the standpoint of their nutritional significance. Deals with the physical and chemical principles while emphasizing the dynamic behavior and function of individual elements in the organisms as a whole. (Offered alternate years.)

834. Proteins and Amino Acids in Animal Nutrition. 3 hours.
Prerequisite: CHM 240, AS 330, VPH 310 or PS 380, BCH 401/601 or 801.

A study of metabolism and utilization of dietary proteins and amino acids by animals. Methods of supplying the amino acids for most efficient utilization for maintenance, growth and the production of protein products. Evaluation of the quality of food proteins to meet nutrient requirements. Methods for separation of proteins, amino acid analysis and determination of protein quality will be studied. (Offered alternate years.)

835. Carbohydrates and Lipids in Animal Nutrition. 3 hours.

Prerequisite: ADS 330, BCH 401/601 or 801.
An examination of the utilization and metabolism of carbohydrates and lipids by animals. A systematic evaluation of biochemical properties of carbohydrate and lipid foods and their effects on absorption and metabolism of the nutrients of the animal diet. (Offered alternate years.)

838. Experimental Methods in Animal Nutrition. 5 hours.
Prerequisite: AS 330, CHM 240.

A laboratory course concerned with biochemical nutrition methodology and its utilization in performing experiments, recording and interpreting data and writing scientific reports.

839. Nutrition Seminar. 1-6 hours.

Topical discussion of current problems and papers of scientific work in animal nutrition to be presented by the students, faculty and guest speakers.

900D. Doctoral Research. 1-15 hours. (Max. 60 hours.)

Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

930D. Doctoral Dissertation. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Anthropology (ANT)

Robert E. Rhoades, *Head*
Stephen A. Kowaleski, *Graduate Coordinator*,
542-3962
(Baldwin Hall)

The Department of Anthropology offers programs leading to the degrees of Master of Arts and Doctor of Philosophy in anthropology. These graduate programs reflect training in basic anthropological knowledge and the department's focus on environmental and ecological anthropology.

Admission is only to the PhD program. Students may complete the requirements for an MA degree en route to the PhD or as the terminal degree in the program. Students are admitted and begin the PhD program only during Fall quarter. No new admissions are permitted in the Winter or Spring quarter.

Training focuses on the role of anthropology as a discipline in understanding the human-environment interface, both past and present, and from a cross-cultural perspective. The doctoral program also provides students with the flexibility to attain interdisciplinary training in other academic areas relevant to understanding issues of sustainable human ecosystems. Relevant academic areas for coursework within the university may include those offered in conjunction

with the Institute of Ecology, the Environmental Ethics Program, the College of Agricultural and Environmental Sciences, the School of Forest Resources, and allied disciplines in the College of Arts and Sciences. Graduates of the program should be qualified for teaching, research, or applied employment opportunities. Requirements for the PhD degree include satisfactory performance on written and oral comprehensive examinations, fulfillment of a research skills requirement, and an approved dissertation which reflects the student's specialization and the departmental focus.

Prospective students must complete the application process by January 15 if they wish to compete for departmental graduate assistantships to be awarded for the following academic year.

(Please contact the graduate coordinator for current course offerings.)

600. Anthropology of Economic Systems. 5 hours.

Prerequisite: ANT 102 or permission of department. Models and methods used by anthropologists to study production, distribution, and consumption of goods in subsistence and market economies. Topics from the ethnographic literature include feasting, money, managing commons, precapitalist markets, and capitalist penetration of subsistence economies.

602. Indians of North America. 5 hours.

Prerequisite: ANT 102 or permission of department. North American Indian cultures at the time of European contact. Additional topics include: origin and development of Indian culture, impact of European contact on native cultures, and problems faced by Native Americans today.

605. Cultural Anthropology. 5 hours.

Prerequisite: ANT 102 or permission of department. Concepts and methods for the analysis and cross-cultural comparison of human institutions.

609. (LIN) Cognitive Anthropology. 5 hours.

Prerequisite: ANT 102.
Folk systems of knowledge, with an emphasis on how people in different societies culturally identify, define, label, and classify phenomena such as color terms, plants, animals, and other environmental resources.

614. (ECL/FRS) Principles of Conservation and Sustainable Development II. 5 hours.

See ECL 614.

615. (REL) Anthropology of Religion. 5 hours.

See REL 615.

Anthropology

620. Field Methods in Archaeology. 5 hours.
Prerequisite: ANT 102 or permission of department.
Methods of archaeological reconnaissance, survey excavation, laboratory preparation and analysis of collected materials.

621. (ECL) Zooarchaeology. 5 hours.
Prerequisite: ANT 102 or BIO 104-104L or BIO 108-108L or permission of department.
Animal bones recovered from archaeological sites, studied in light of zoological concepts, especially osteology, and archaeological methods and theories; interpretation of identified materials in terms of human and animal behavior.

624. Laboratory Methods in Archaeology. 5 hours.
Prerequisite: ANT 102 or permission of department.
An introduction to the range of environmental, chronological, preservational, and analytical methods and techniques that are intrinsic to the accomplishment of archaeological research.

629. (ECL) Environmental Archaeology. 5 hours.
Prerequisite: ANT 102 or permission of department.
Analysis of prehistoric and historic human subsistence patterns through the methods and techniques of zooarchaeology, paleobotany, and paleonutrition. Theories of environmental reconstruction will be assessed.

631. Archaeology of Eastern North America. 5 hours.
Prerequisite: ANT 102 or permission of department.
Prehistoric and early historic aboriginal cultural variation in eastern North America.

634A. (GLY) Archaeometry. 5 hours.
See GLY 634A.

640. (SOC) Socio-political Ecology. 5 hours.
See SOC 640.

649. Foundations of Ecological Anthropology. 5 hours.
Prerequisite: Permission of department.
Human-environment interaction in anthropological perspective from the 18th century to the present.

652. History of Anthropological Theory. 5 hours.
Prerequisite: ANT 102 or permission of department.
A survey of the development of anthropological theory.

655. Ethnohistory. 5 hours.
Prerequisite: ANT 102 or permission of department.
An examination of the methods used by anthropologists to reconstruct the history of preliterate societies from archaeological evidence, documentary evidence, and oral traditions. The ethnohistory of southeastern United States will be emphasized.

656. Anthropology of Development. 5 hours.
Prerequisite: ANT 102 and 5 hours advanced social science or permission of department.
Relationships among development, culture, and environment are analyzed from the world system perspective. Concepts of dependence, hegemony, inequality, and resistance are brought to bear in exploring interlinkages between (and among) underdevelopment, resource exploitation, and local autonomy and self-reliance.

660. Microcomputers for Anthropological Research. 2 hours.
Prerequisite: ANT 102 and permission of department.
Microcomputer hardware and software packages which have utility for anthropological research. Those include word processing, data management programs, and packages designed specifically for anthropology.

661. Introduction to Research Methods. 5 hours.
Prerequisite: ANT 102 or permission of department.
Central issues, underlying assumptions, and basic premises of anthropology as a science to provide the requisite skills and methodological knowledge for designing an original research project in anthropology.

662. Methods in Sociocultural Anthropology. 5 hours.
Prerequisite: ANT 102 or permission of department.
Research methods and techniques used in sociocultural anthropology, with emphasis on ethnographic field research, including observation, participant observation, interviewing, questionnaires, testing, and mapping. Methods of data organization, storage, retrieval, and preliminary analyses will also be addressed.

663. Field Methods in Cultural Anthropology. 10 hours. (Max. 20 hours.)
Prerequisite: ANT 102 and permission of department.

Supervised research projects in a field setting. Individual projects related to a central problem or issue, using research methods and techniques in cultural anthropology, including interviews, surveys, participant-observation, and questionnaires.

670. (GLY) Archaeological Geology. 5 hours.
See GLY 670.

671. Human Origins. 5 hours.
Prerequisite: ANT 102 or permission of department.
A study of the evolutionary history of the human species through examination of the fossil record.

679. Human Adaptation. 5 hours.
Prerequisite: ANT 102, BIO 101, 102 and permission of department.

An exploration of human diversity as response to environmental stress, from both a biological and cultural perspective. Topics include: adaptation to heat, cold, altitude, malnutrition and infectious disease; the impact of westernization and technological advancement on human biological function; and growth and development of the individual under environmental stress.

686. (LIN) (EFL) Language in Culture and Society. 5 hours.
See LIN 686.

690. Special Topics in Anthropology. 5-15 hours. (Max. 15 hours.)

Prerequisite: ANT 102 or permission of department. A program of semi-independent study including reading and discussions of current developments in anthropology.

692. Advanced Archaeology. 5 hours.
Prerequisite: ANT 622.

An examination of fundamental issues in modern archaeology.

695. Advanced Cultural Anthropology. 5 hours.
Prerequisite: ANT 405/605.

An examination of cultural and social anthropology.

698. Advanced Biological Anthropology. 5 hours.

An examination of current trends in bioanthropology.

700M. Master's Research. 1-15 hours. (Max. 30 hours.)

Prerequisite: Permission of department. Research while enrolled for a master's degree under the direction of faculty members.

715. (ESS) Anthropology of Education. 5 hours.
See ESS 715.

730M. Master's Thesis. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

800. Special Topics in Anthropology. 2-5 hours. (Max. 20 hours.)

Prerequisite: Permission of department. Opportunity to do intensive study on an individual basis in the field of the graduate student's major interest.

803. Prehistorical and Historical Anthropology. 5 hours.

Prerequisite: ANT 622 or permission of department and course work equivalent to ANT 622.

A survey of the use of prehistorical and historical materials in the anthropological study of present and past societies. A critical review and examination is made of the methodology in archaeology, prehistory, and ethnohistory.

804. Seminar in Anthropology. 2-5 hours. (Max. 15 hours.)

Selected topics in anthropology.

806. Primate and Human Ecology. 5 hours.

Prerequisite: Permission of department.

A study of the interrelationships among biology, social organization, cultural diversity, and the physical environment. Emphasis is placed on the ecology of human and primate societies that affect and constrain biocultural adaptation.

811. (ECL) Tropical Ecological and Cultural Systems. 3 hours.

See ECL 811.

820AB. Seminar in Archaeology. 5 hours each. (Max. 10 hours each suffix.)

Prerequisite: Graduate standing with 15 hours of advanced anthropology.

An advanced seminar for areas of special interest in the field of archaeology. Topics to be selected according to need.

840. Human Population Ecology. 5 hours.

Prerequisite: ANT 649 or permission of department.

Theoretical population ecology applied to human populations. Biocultural aspects and multiplicity of causality in discussion/assessment of topics such as: human demography and population regulation; disease ecology and epidemiology in human populations; interrelationships of human nutrition, social inequity, resource exploitation, and population mobility/migration/spatial organization.

841. Comparative Human Ecological Systems. 5 hours.

Prerequisite: ANT 649 or permission of department.

Critical examination of concepts relevant to an ecological analysis of the formation, maintenance, and change of human social groups, considering in turn cultural, biocultural, structural, and neo-Marxist perspectives.

842. Human Ecosystem Evolution. 5 hours.

Prerequisite: ANT 649 or permission of department.

Evolutionary perspectives on the biocultural mediation of human-environment relations from the Plio-Pleistocene through the Holocene, analyzed in terms of human ecosystem structures and functions, including cybernetics and flows of energy/ matter and information. Persistence and change as evolutionary and ecological concepts.

850. Seminar in Ecological Anthropology. 5 hours. (Max. 20 hours.)

Prerequisite: ANT 649 or permission of department.

Topics in socio-cultural construction of knowledge about environmental and ecological systems, including factors that contribute to emergence and maintenance of those systems.

861. Field Methods in Ecological Anthropology. 5 hours. (Max. 20 hours.)

Prerequisite: Permission of department.

Methods of anthropological research in field settings on environmental and ecological questions and problems, including ethnography, surveys and formal measurement of resources.

862. Anthropological Data Analysis. 5 hours.

Prerequisite: ANT 661.

Procedures and techniques of analysis on anthropological data, including microcomputer software data analysis packages with, focus on issues in qualitative research, including text analysis, pattern recognition, matrix displays, and data graphics, and on issues in quantitative research, including hypothesis and model testing.

900D. Doctoral Research. 1-15 hours. (Max. 30 hours.)

Prerequisite: Permission of department.

Research while enrolled for a doctoral degree under the direction of faculty members.

930D. Doctoral Dissertation. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Art (ART)

Evan R. Firestone, *Director*

William T. Squires, *Graduate Coordinator,*
542-1624

(*Visual Arts Building*)

The Lamar Dodd School of Art offers programs for the Doctor of Philosophy in art, Master of Fine Arts, and Master of Art in art history, all organized to develop the student's creative independence and professional capability as a producing artist, designer, and scholar in a total environment of living art. In conjunction with the College of Education, the School of Art offers programs in art education leading to the Master of Art Education, Specialist in Education, and Doctor of Education degrees. The school's philosophy particularly stresses that the above goals be met for the art educator who must attain professional standards in the graduate studio as well as in the classroom.

Candidates for the PhD in art are required to demonstrate competence in either history of art or art education. When appropriate, a candidate's program of study may include

courses in the theory and criticism of art and relevant areas of study outside the School of Art. The research skills requirement, in the history of art emphasis, is a reading knowledge of two foreign languages. In the art education emphasis, the research skills requirement may be met by either statistics, computer science, or a foreign language. Satisfactory completion of written and oral preliminary examinations, a dissertation demonstrating original research, and a final oral defense before an examining committee of the faculty are also required.

Students in the MA program in art history must demonstrate a reading knowledge of a foreign language, pass a written general examination in art history, submit a thesis, and pass a final oral examination.

Applicants are admitted to all quarters. However, priority will be given to those applications completed no later than January 10th for the following four quarters. Applications for assistantships should be made to the graduate coordinator of the School of Art by January 10th for the fall quarter. Information on additional fellowships may be obtained from the Office of Student Financial Aid.

The Georgia Museum of Art is a significant resource for the School of Art. It has a major collection of American paintings and over 5000 works on paper from all periods. The museum sponsors a full schedule of in-house and traveling exhibitions each year.

The following review and evaluation procedures apply to all students enrolled in a program leading to the MFA degree in studio art:

Upon completion of 30 quarter hours of resident graduate work, the student must pass an oral examination which, with supporting creative studio work, will constitute an evaluation of his/her capability for continued enrollment in the MFA degree program. The evaluation will be conducted by a duly appointed faculty committee, which will determine if the student will be (1) continued in the regular MFA program, or (2) required to complete additional work beyond the regular MFA requirements, for the specific purpose of improving his/her skills, or (3) counseled to withdraw from the MFA program and consider alternative educational goals.

Students who successfully meet the requirements for continued enrollment in the MFA degree program, will be required to arrange a public thesis exhibition of creative studio work during the final quarter of residence. The exhibition will be evaluated by faculty, who will determine if the exhibited work represents a satisfactory level of professional accomplishment by the candidate. Faculty approval of the thesis exhibition is a requirement for graduation.

Although some courses listed below have specific prerequisites, instructors for graduate courses may waive some prerequisites if the student can demonstrate adequate training or experience. Likewise, the instructor may advise a student to withdraw from the class due to inadequate preparation or motivation. Courses in the studio areas are usually scheduled to meet two hours a day.

601. Techniques of Art Appreciation and Criticism. 5 hours.

An inquiry into alternative modes of analyzing, interpreting and evaluating works of art; the construction of art appreciation curricula; critical techniques as employed in classroom teaching strategies.

603. Women in Art. 5 hours.

Art appreciation, theory, and criticism through examination of the influence of women on the visual arts. Art, influenced by women as artists, critics, patrons, and subjects, will be considered in its cultural contexts.

604. The Art and Architecture of the City of Rome. 5 hours.

Prerequisite: ART 287 or 288.

Art and architecture of the City of Rome. Etruscan, Roman, Early Christian, Renaissance, Baroque and modern styles viewed historically and as expressions of the religious and political influences that shaped the city.

620. Seminar in Contemporary Art. 5 hours. (Max. 10 hours.)

Prerequisite: ART 332 or permission of department. Current issues in contemporary art from the point of view of studio artists.

650. Guided Foreign Study in Art History. 5 hours.

Prerequisite: Two senior division art history courses or comparable background and permission of department.

A systematic, on-the-spot study of a selected and logically unified group of art works found in foreign collections, sites, and museums. The range of

study will be determined by the instructor and basically be within the field of the visual arts. Where possible local library and archival resources will be used. Lecture and discussions before and during the period of travel will coordinate the activities and bring in factors of local environmental influence.

655. The Arts of China. 5 hours.

Major trends in the arts of China from the Neolithic age to the eve of the modern period (ca. 2500 B.C.E. to the 19th Cent. C.E.). Factors affecting important developments in style and subject matter will be studied in the context of contemporary cultural phenomena.

656. Japanese Art. 5 hours.

History of Japanese art of the proto-historic period to the exposure of Japan to the West in the mid-19th century. Emphasis on the Buddhist arts of Japan during the Imperial period, including Japanese pictorial art, architecture, and Shinto-influenced arts.

657. Art of India. 5 hours.

Traditional art of India from the Indus Valley civilization to the Muslim conquest. Major monuments of architecture, sculpture, and painting will be investigated in the context of political and religious developments in the Indian subcontinent, including the influences of the Indic religions of Buddhism, Hinduism, and Jainism.

660. Italian Renaissance and Baroque Sculpture. 5 hours.

Prerequisite: ART 288.

The development of sculpture in Italy between 1400 and 1700. Discussions of style clarified through analysis of technique. Unique properties of stucco, wood, gold, bronze and marble approached historically and symbolically through a European context.

665. Renaissance Architecture. 5 hours.

A study of the "new" architecture of the 15th and 16th Centuries, emphasizing such bases of the style as general principles, revival of classical forms, and individual contributions. Italian works by such masters as Brunelleschi, Alberti, Bramante, Michelangelo and Palladio will be discussed.

672. Venetian Art. 5 hours.

Principal monuments of Venetian art from the fourteenth through the eighteenth centuries. Special emphasis is given to painting and the work of such masters as Paolo Veneziano, Gentile and Giovanni Bellini, Giorgione, Tintoretto, Veronese, and Tiepolo.

673. The Classical Tradition in the Visual Arts. 5 hours.

A discussion of classic examples of stylistic evolution. Topics vary from year to year: aspects of the development of classic and Gothic stone carving; classic and Renaissance drawing; Phidias, Raphael, and Poussin.

674. Arts of the Bronze Age. 5 hours.

Prerequisite: ART 287 and either 288 or 289.

A study of the art of the Bronze Age in Mesopotamia, Egypt, Crete and Mainland Greece. Sculpture, wall-painting and monumental architecture from these contemporary cultures will be examined, along with possible influences of one culture on another.

675. Early Greek Art. 5 hours.

Prerequisite: ART 287 and either 288 or 289.

A study of stylistic and thematic developments in the major media of early Greek art from the proto-geometric through the archaic periods (1050-480 B.C.). Representative examples of free-standing sculpture, architecture and architectural sculpture, and vase-painting will be examined.

676. Classical and Hellenistic Greek Art. 5 hours.

Prerequisite: ART 287 and either 288 or 289.

A study of the masterpieces and major monuments of Greek art from the Classical and Hellenistic periods. Both original works and Roman copies of famous original sculptures and paintings will be presented, as well as major monuments such as the Parthenon and the Greek Altar of Zeus at Pergamon.

677. Roman Art and Architecture. 5 hours.

Prerequisite: ART 287 and either 288 or 289.

A study of the art and architecture of the late Roman Republican era and the Roman empire (ca. 100 B.C.-300 A.D.). Portraiture, relief sculpture and wall-painting will be investigated, along with major architectural structures as Pompeii and Rome.

681. History of Northern Renaissance Art. 5 hours.

Historical study of the architecture, sculpture, painting, and minor arts north of the Alps from the waning of the medieval period to around the beginning of the 17th Century. The artistic achievements in France, Germany, England, and the Low Countries will be presented against the background of their political, social, and literary accomplishments.

682. Backgrounds of Modern Art, 19th Century. 5 hours.

A study of the cultural and historical roots of modern architecture, painting and sculpture as they are found in Europe during the 19th Century. Particular attention is given to the relationship of

the arts to their political, social and economic contexts. Some consideration will be given to parallel developments in the arts of the United States.

683. Modern Art, 20th Century. 5 hours.

A study of the history of 20th-Century European architecture, painting and sculpture. Particular attention is given to the relationship of the arts to their political, social and economic contexts. Some consideration will be given to parallel developments in the arts of the United States.

684. Spirituality in Modern Art. 5 hours.

Prerequisite: ART 289 or 483/683 or permission of department.

Myth and spirituality in the abstract art of the late nineteenth and twentieth centuries, as exemplified in Gauguin, Kandinsky, Klee, Mondrian, Pollock, and Rothko.

685A. The Art of the Baroque in Italy, Spain and France. 5 hours.

An analysis, beginning with the 17th Century in France, Italy and Spain, detailing the rise of the Baroque and its development.

685B. The Art of the Baroque in Holland, Belgium and England. 5 hours.

Intensive investigation of the art of northern Europe, concentrating on such major artists as Rubens, Rembrandt, Vermeer and Van Dyck, while relating the art of the period to the political, philosophical and literary environment.

685C. Baroque Architecture. 5 hours.

Development of architecture and decoration in the 17th and 18th Centuries. Relations with sculpture, gardening, city planning and other baroque forms will be considered.

686. American Art 1875-1913. 5 hours.

Prerequisite: Ten hours from ART 287 or 288 or 289.

American Art from Victorianism to early Modernism.

691. Early Italian Renaissance Art. 5 hours.

The chief masterpieces, personalities, and issues of Italian art during the Early Renaissance.

692. Italian High Renaissance and Mannerist Art. 5 hours.

Masterpieces, personalities, and issues of Italian art during the High Renaissance and its aftermath throughout the 16th century.

693A. Early Christian and Byzantine Art. 5 hours.

An analysis of the origins and the rise of early Christian architecture and art in the Mediterranean countries and of the beginnings of Christian art in the North.

693B. Early Medieval Art. 5 hours.

A study of the architecture, painting and sculpture from the Carolingian to the Romanesque periods with emphasis on the Romanesque architectural ensembles.

693C. Gothic Art. 5 hours.

A study of Gothic architecture and art beginning with the developments of early Gothic architecture and sculpture in the 12th Century and ending with the international Gothic of the late 14th Century. Special emphasis will be given to the architecture and sculpture of the important French cathedrals.

696. American Impressionism. 5 hours.

Prerequisite: ART 498B/698B or permission of department.

History of impressionism in late nineteenth and early twentieth-century American art, with an examination of the influences of French realism and impressionism.

698A. Art of the United States 1608-1893. 5 hours.

Prerequisite: Two courses from ART 287 or 288 or 289 or permission of the department.

An in-depth examination of the art of the United States from the first days of colonial settlement to the end of the Gilded Age. The course will examine painting and sculpture in its historical, cultural and social contexts.

698B. Art of the United States 1893-1975. 5 hours.

Prerequisite: Two courses from ART 287 or 288 or 289 or permission of department.

An in-depth examination of the art of the United States from the beginning of the Gilded Age until the last quarter of the 20th Century. The course will examine painting and sculpture in its historical, cultural and social contexts.

699. Architecture of the United States. 5 hours.

The development of building arts within the continental United States from the earliest settlements to the present. Particular attention is given to regional developments and the various European traditions which influenced architecture and urban design in this country.

700M. Master's Research. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

702. Drawing and Composition. 5 hours.**703. Drawing and Composition.** 5 hours. (Max. 15 hours.)**713. Crafts for Teachers.** 5 hours.

Prerequisite: Two senior division courses in art, permission of department.

A course in crafts for classroom teachers. Emphasis will be placed on the use of simple hand tools and materials in adapting a crafts program to children at various age levels and in integrating this program with classroom activities.

717ABC. Advanced Printmaking. 5 hours each.

Prerequisite: Minimum of four senior division courses in drawing and painting.

Advanced work in printmaking media including the traditional intaglio processes of etching, engraving, dry-point, aquatint and mezzotint; the various relief and planographic processes, the collagraph and serigraph processes and the combination of these various processes.

720. Photographic Design. 5 hours.

Prerequisite: ART 320A, 320B, permission of department.

An investigation of the experimental potential of the light sensitive medium in an effort to implement an awareness and ability in this expanding and dominant mode of visual communications.

721. Internship in Photography. 3-5 hours. (Max. 15 hours.)

Prerequisite: ART 320C and permission of department.

Practical experiences with appropriate professionals in the field including photographers, designers, editors, and curators. Work with photography faculty in creative research and production assistance in the field, studio, or lab.

722A. Special Topics in Photography. 5 hours.

Prerequisite: ART 320C and permission of department.

Major historical movements in photography, including comparative studies of contemporary trends and criticism with an emphasis on research and the development of library archives.

722B. Photographic Design. 5 hours.

Proposal and solution of technical and design problems in photography based on thorough search of literature and individual experimentation.

723ABCDE. Special Problems in Art Education. 1-10 hours each. (Max. 10 hours.)

Prerequisite: Permission of department.

Specific problem areas, according to individual needs, are investigated, discussed, and evaluated. (Maximum of 10 hours toward a degree.)

- A. Specific problems and experiences in teaching art.
- B. To adult populations, e.g., prisoners and the aged.
- C. In mental health facilities.
- D. With handicapped children.
- E. In community recreation and cultural centers and museums.

726A. Book Art and Papermaking. 5 hours.

Prerequisite: Graduate standing. Advanced exploration of hand papermaking as a support for other media and as a creative medium in two or three dimensional form. The book, seen as an art form, is examined in structure and content with skills learned in various binding techniques.

726B. Book Art and Papermaking. 5 hours.

Prerequisite: ART 726A and graduate standing. Utilization of the acquired knowledge and skills in the advanced exploration of hand papermaking. Implementation of special project which demonstrates acquired skills in exploring the book as an art form.

727A. Fine Printing. 5 hours.

Prerequisite: Graduate standing. An exploration of hand printing and letterpress, with an emphasis on the creative synthesis of text and image in a narrative, serial, sequential, or experimental fashion. The book, seen as a fine art multiple, is examined in structure and content with skills learned in hand papermaking, binding, and printing techniques.

730. Multicultural and Cross-Cultural Study in Art Education. 5 hours.

Prerequisite: Permission of department. Influence and importance of various cultural traditions in the development of art in the United States with emphasis on multicultural and cross-cultural art education curricula.

730M. Master's Thesis. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

731. Painting. 5 hours.

732. Painting. 5 hours. (Max. 15 hours.)

736. The Teaching of Art in the Secondary School. 5 hours.

Prerequisite: Two senior division courses in art. For advanced students in art education and administration of secondary school programs. Recommended practice in qualitative curriculum planning, together with laboratory projects that identify the unique problems in secondary school art, including philosophical, motivational and evaluative aspects.

737. Curriculum Development in Art Education. 5 hours.

Prerequisite: Two senior division art or art education courses and permission of department. The following major substantive issues in curriculum development in art education will be considered and analyzed: meaning and method of curriculum improvement; guidelines for curricu-

lum improvement; curriculum decision making; testing and evaluating operational curriculum innovations; and focus on change.

739. Supervision of Art. 5 hours.

Prerequisite: Two senior division courses in art. A seminar approach, dealing with the specific problems of the supervisor, consultant or director of the art program in the community schools, including qualitative curriculum planning and strategies for building the art potential of the classroom teacher.

740. The Teaching of Art in the Elementary School. 5 hours.

Prerequisite: Two senior division courses in art. For advanced students in art education and administration of elementary school programs. Recommended practices in qualitative curriculum planning, together with laboratory experiments that identify the unique problems in elementary school art, including philosophical, motivational and evaluative aspects.

745. Japanese Fabrics. 5 hours.

Four lectures and one 2-hour lab period. Prerequisite: ART 350A and 351A and permission of department.

Design, uses, processes and materials of Japanese fabric techniques in a historical and cultural context with emphasis on their utilization in contemporary fiber art.

747. Peruvian Fabrics. 5 hours.

Four lectures and one 2-hour lab period. Prerequisite: ART 350A and 351A and permission of department.

Design, uses, processes and materials of pre-Columbian Peruvian fabrics in an historical and cultural context and their application to contemporary fiber arts and personal art works.

748. History of Fabric Art. 5 hours.

Study of the historical development of the fabric arts from the prehistoric period to the present.

750. Art Education and the Art Museum. 5 hours.

Prerequisite: Permission of department. History and current practices in museum education with an emphasis on application of curricular design programs to art education.

750ABC. Fabric Design-Structure. 5 hours each.

Prerequisite: Two senior division fabric design courses and permission of department. Problems in fabric structure for advanced students in fabric design who are able to carry on independent study. Research problems combining process with design in consultation with the instructor.

751ABC. Advanced Fabric Design. 5 hours each.

Prerequisite: Two senior division courses in fabric design and permission of department.

Problems in fabric decoration for advanced students in fabric design who are able to carry on independent study. Research technology combining dye, fiber and application process with design and function or selection in consultation with the instructor.

752. Jewelry and Metalwork. 5 hours.

Prerequisite: Two senior division courses in jewelry or metalwork, and permission of department. An investigation into the properties of various metals and how those properties relate to processes and function of form and aesthetics.

753ABC. Jewelry. 5 hours each.

Prerequisite: Two senior division art courses and permission of department.

An advanced study of jewelry making processes and development of individual interpretations of those processes and products.

754AB. Metalwork. 5 hours each.

Prerequisite: Two senior division art courses and permission of department.

Problems in design, forming and constructing of various metals including copper, silver and gold. Independent study and emphasis on research is employed for solutions to design problems. The examination of the uniqueness of metal as a material is aimed in both functional and sculptural directions.

754C. Metalwork. 5 hours.

Prerequisite: ART 554B/754B.

Design problems related to form and function will be emphasized, with attention to surface embellishment and forming techniques.

760ABC. Advanced Ceramic Design. 5 hours each suffix.

Prerequisite: A minimum of two senior division courses in ceramics.

This course is designed to promote individual development in the use of the materials and processes of the ceramic designer. Emphasis will be placed upon the functional and aesthetic requirements of form and ornament in contemporary ceramics.

761ABC. Historical Processes in Ceramics. 5 hours each suffix.

Prerequisite: ART 760ABC.

This course is planned to offer the graduate student an opportunity to do individual research into the ceramics of the past and to adapt the knowledge obtained to technical and aesthetic solutions of contemporary problems.

762ABC. Individual Research in Ceramics I. 5 hours each suffix.

Prerequisite: ART 761ABC.

The posing and solving of technical and design problems in ceramics based on thorough investigation of available literature and on information gained in individual experimentation.

763ABC. Individual Research in Ceramics II. 5 hours each suffix.

Prerequisite: ART 762ABC.

A continuation of ART 762ABC.

775. Advanced Figure and Portrait Study in Sculpture. 5 hours.

Advanced figure modeling. Working in a variety of media from the model, emphasizing the structural and sculptural aspects of form. Anatomy and use of anatomical forms are also stressed.

776ABC. Sculpture Materials. 5 hours each.

Prerequisite: Permission of department.

A course concerned with the student relating formal three-dimensional concepts of sculpture as they apply to material or combinations of materials. The student has a choice of working in depth in such materials as cast bronze, cast cement, direct plaster, direct cement, fire clay, welded metal, stone, and wood.

778AB. Construction Composition — Advanced Techniques in Metalcasting. 5 hours each.

Prerequisite: Two senior division courses in sculpture, permission of department.

The production of wax models, venting, investing, casting, chasing and mounting of finished work will provide the student with an opportunity to carry on independent experimentation and study within the medium of cast bronze sculpture.

789. Interior Design. 5 hours.

Prerequisite: Three senior division courses in interior design.

An investigation into the problems of the planning of architectural spaces for public and residential uses. Research studies will be made into the disposition of space, types of historical or contemporary decorative treatments, types of equipment and furnishings, materials and color coordination. Problems and readings.

790. Interior Design. 5 hours.

Prerequisite: Three senior division courses in interior design.

Investigation into the designing of special equipment: furniture, built-in equipment, special lighting, and custom design. Special emphasis on research into historical procedure in design and construction.

Art

791. Interior Design. 5 hours.

Prerequisite: Three senior division courses in interior design.

Individual creative problems or coordination of all aspects of interiors from original concept to completed finished drawings and presentations of material schedules.

792. Procedures in Interior Design. 5 hours.

Prerequisite: Permission of department.

Procedures and ethical practices of interior design execution, designer-client relations, presentation of drawings, pricing, wholesale buying, trade showrooms and preparation of various types of contracts. Studies will be made of the qualitative aesthetic value as they relate to monetary values in the preparation of plans for various types of contract work.

798ABC. Directed Study in Major Studio Area. 5 hours each.

Prerequisite: Permission of department.

A course designed for the graduate student to pursue individual studio projects in art, emphasizing investigation of specific problems under the direction of his/her major professor or under the direction of a professor approved by his/her major professor.

799. Teaching Practicum. 5 hours. (Max. 15 hours.)

Four 2-hour lab periods.

Prerequisite: Permission of department.

Methods of instruction in art at the University-level. Pedagogical readings related to the discipline of art.

800, 801. General Art. 5 hours each.

Prerequisite: Permission of department.

A course designed for the graduate student to pursue individual projects in art. Should not be taken until after ART 798ABC numbers have been used.

804. Drawing and Composition. 5 hours.

Prerequisite: ART 703, permission of department.

Advanced study of the relationship of principles to picture structure. Readings in the fields of art history and analysis.

810. Graduate Seminar in Art. 5 hours.

A seminar providing an intensive introduction to advanced research information and techniques for the visual arts which will give bases for the determination and evaluation of graduate programs and thesis problems in conformity with the ideals of broad academic and technical concepts.

811. Special Problems in Art History. 5 hours. (Max. 20 hours.)

Prerequisite: Permission of department.

Individual research and/or group presentation and discussion of specific problems in art history.

812. Directed Study in Art History. 5 hours. (Max. 15 hours.)

Individual research related to specific problems in art history.

833. Painting. 5 hours.

Prerequisite: Permission of department.

A comparative study of theories pertaining to the means in painting as they relate to the painting act. Readings in the fields of art criticism and aesthetics.

835. Art Criticism. 5 hours.

Prerequisite: Four courses in fine arts, two of which must be in the senior division.

The theory and practice of analyzing, interpreting and appraising works of art. The student will be required to demonstrate competence in critical analysis and explication.

841. History of Art Education. 5 hours.

Prerequisite: Two senior division courses in art or art education.

The development of art educational theory and practice in the institutional setting of American schools, beginning with the industrial arts and drawing instruction initiated in the Massachusetts schools in the 19th Century; the theories of Arthur Wesley Dow, Walter Smith, Royal Bailey Farnum, Norman C. Meier, John Dewey, Viktor Lowenfeld, Thomas Munro, and others. European figures such as Franz Cizek, Herbert Read, Walter Gropius, and L. Moholy-Nagy will also be considered.

843. Readings in Art Education. 5 hours.

Prerequisite: Graduate standing as art education major.

An inquiry into the dominant forces that have shaped and are influencing contemporary art education. Consideration will be given to the writings of Plato, Aristotle, Rousseau, Herbart, Pestalozzi, Froebel, Dewey, Bruner and McLuhan.

858AB. Seminar in Renaissance Art. 5 hours each.

Prerequisite: Permission of department.

This course focuses on problems in European art during the Renaissance. The subject will vary, but may include topics oriented toward a single major figure, or a genre, or a school. Problems chosen for study concern one of the major branches of art history, e.g., connoisseurship or iconography.

860AB. Seminar in Italian Baroque Art. 5 hours each.

This course will focus on a single Italian Baroque artist such as Caravaggio, Bernini, or Tiepolo, or on a regional school such as the Venetian Settecento. Selected works of art by the artist or school chosen for study, and the relevant literature, provide the raw materials for training in how to solve art historical problems using techniques

developed in areas such as connoisseurship, iconography, iconology, and source material interpretation.

869. (PSY) A Psychological Approach to Eroticism in Art. 5 hours.
See PSY 869.

870AB. Seminar in Greco-Roman Art. 5 hours each. (Max. 10 hours.)
Prerequisite: Graduate status in art, classics or history.

This course will focus on a single genre of Greco-Roman art from a limited time frame (e.g., free-standing Greek sculpture from the 6th Century B.C.), or on a single aspect (e.g., Roman historical reliefs). Areas of certain knowledge and speculation will be investigated.

891. Seminar in 19th-Century European Art History. 5 hours. (Max. 15 hours.)
Issues relating to the visual arts in 19th-century Europe. Topics will include studies of major artists or movements, as well as thematically directed projects.

892. Seminar in 20th-Century Art History. 5 hours. (Max. 15 hours.)
Issues relating to the visual arts of the 20th century. Topics will include studies of major artists or movements, as well as thematically directed projects.

899C. Reading and Seminar in the Visual Arts of United States. 5 hours.
Prerequisite: Advanced graduate standing in art history or American studies.

A study through assigned readings and seminar reports of statements by artists, critics, scholars and public officials related to art exhibitions, schools and movements in the United States.

900D. Doctoral Research. 1-15 hours. (Max. 50 hours.)
Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

921. Art Problems. 5 hours. (Max. 20 hours.)
Prerequisite: Admission to candidacy for M.F.A. degree in art.
Project of original creative works of high professional standards, together with a written report in which use is made of photographs or drawings or both. The student will be required to present a comprehensive exhibition of his graduate creative work.

930D. Doctoral Dissertation. 1-15 hours. (Max. 30 hours.)
Prerequisite: Permission of department.

Artificial Intelligence (AI)

Donald E. Nute, Jr., *Program Director*
Walter D. Potter, *Graduate Coordinator*,
542-0361
(Boyd Graduate Studies Building)

The interdisciplinary Master of Science program in artificial intelligence is intended to prepare students for careers as developers of artificial intelligence applications or for further graduate work in artificial intelligence or related areas. The program includes foundational courses in computer science, linguistics, logic, philosophy, and psychology as well as specialized courses in artificial intelligence programming languages and techniques. Seminars emphasize knowledge based systems, natural language understanding, and logic programming.

Students are admitted to the program with degrees in many areas including business, computer science, education, linguistics, philosophy, and psychology. A liberal undergraduate education with some previous experience in computing is desirable. Most students must take a few undergraduate courses to satisfy prerequisites for required graduate courses. The required graduate courses are listed under their respective departments. Typically, required courses include: AI/CS 654, CS/PHY 655, PHY 643, CS/PHY 865, and any two from [CS 805, CS/EGR 854, CS/LIN 857, and AI/CS 882]. Additional course requirements are satisfied by selecting optional courses. It normally takes two years to complete all prerequisites, all required courses, and the thesis.

A limited number of research assistantships are available. Prospective students who desire financial aid should apply to the graduate coordinator.

654. (CS) Artificial Intelligence Programming Techniques. 5 hours.
See CS 654.

700M. Master's Research. 1-15 hours. (Max. 30 hours.)
Prerequisite: Permission of department.

Research while enrolled for a master's degree under the direction of faculty members.

730M. Master's Thesis. 1-15 hours. (Max. 45 hours.)

Prerequisite: Permission of department.

800. Topics in Artificial Intelligence. 1-5 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Special topics in artificial intelligence. Topics will vary. Consult the program director for the specific topics to be offered in a given year.

880. Directed Readings in Artificial Intelligence. 1-5 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Directed reading and research in artificial intelligence in area(s) of student's special interest.

882. (CS) Computer Vision and Pattern Recognition. 5 hours.

See CS 882.

Avian Medicine (AM)

Stanley H. Kleven, *Head*

Jean E. Sander, *Graduate Coordinator,*
542-5058

(*Poultry Diagnostic and Research Center*)

The Master of Avian Medicine is designed to provide veterinarians with specialized training in the diagnosis, treatment and prevention of poultry diseases. The degree is open to students who hold the Doctor of Veterinary Medicine degree.

605. Avian Diseases. 5 hours.

Prerequisite: DVM or equivalent degree.

The signs of specific avian diseases, their causes, and contributing management factors are stressed.

610. Clinical Avian Medicine Seminar. 5 hours.

Prerequisite: DVM or equivalent degree.

Through study of case material, students learn to integrate laboratory test results into an accurate diagnosis. Appropriate treatment and prevention plans will be formulated.

612. Avian Medicine Clinical Rounds. 1 hour. (Max. 6 hours.)

Prerequisite: DVM or equivalent degree.

Faculty and students will discuss in detail clinical cases representing current avian disease problems.

614. Avian Necropsy. 5 hours.

Prerequisite: DVM or equivalent degree and/or permission of department.

Necropsy and supportive diagnostic laboratory procedures are used to establish diagnoses of avian diseases. Various therapeutic and prophylactic measures which might be applied are discussed and appropriate recommendations for clients are determined. Problem-oriented medical records are maintained for discussion and audit.

616. Poultry Disease and Management Interaction. 1-10 hours.

Prerequisite: [DVM or equivalent] or permission of department.

Interaction between current commercial management practices relative to their effect on poultry diseases. Role of field experiences in identification of health problems and recommendations for improving flock health.

621. Avian Medicine Externship. 10 hours.

Prerequisite: DVM and permission of department.

This course provides extensive field experience with poultry companies and practicing veterinarians in the diagnosis and management of avian disease problems.

680. Poultry Pharmacology and Toxicology. 5 hours.

Prerequisite: Permission of department.

Poultry pharmacology and toxicology. Major classes of naturally occurring toxicants and therapeutic pharmaceuticals. Mechanisms of toxicosis, pharmacologic benefits for different compounds, and appropriate doses to avoid tissue residues.

706. Avian Diagnostic Microbiology. 5 hours.

Prerequisite: DVM Degree and permission of department.

A course designed to provide intense practical experience and knowledge of the techniques used in the isolation, identification, and susceptibility testing of avian bacterial and mycological pathogens. Interpretation of results, quality control, economics of diagnostics, and data management are included.

805. Avian Virus Diseases. 5 hours.

Prerequisite: MMB 405 or permission of department.

A study of the serological and virological methods used to isolate and identify avian viruses of economic importance. Cell culture systems are prepared and infected with different viruses to observe their effect. Specific projects are undertaken to familiarize the student with current virological techniques.

809. Poultry Diseases and Parasites. 5 hours.

Prerequisite: Permission of department.

An intensive course in poultry disease diagnosis. Various diseases will be studied, using cases sent in from the field as materials, and the development of skill in the use of laboratory diagnostic techniques will be emphasized. (Fall quarter in conjunction with AM/PS 373.)

811. Problems in Poultry Diseases and Parasites. 5 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

This course allows students to work intensively on approved problems after selection of the specialized area with the appropriate staff member.

815ABC. Avian Medicine Seminar. 1 hour each.

Presentation and discussion of current diagnostic cases including clinical history, gross necropsy findings, laboratory data, histopathology, diagnostic possibilities, and case management. Current research activities will also be presented and discussed.

822. (VPP) Microscopic Pathology of Poultry. 5 hours.

See VPP 822.

Biochemistry and Molecular Biology

J. David Puett, *Head*

Alan E. Przybyla, *Graduate Coordinator,*
542-1720

(Life Sciences Building)

The Department of Biochemistry and Molecular Biology is in the Franklin College of Arts and Sciences. It functions largely as a graduate department with programs of study leading to the MS and PhD degrees. There are 20 large research laboratories for biochemistry and molecular biology in the Life Sciences Building, a \$36 million facility completed in 1991. The building houses a fermentation plant with facilities for the large-scale production and processing of microorganisms, animal quarters and a large suite of plant growth chambers giving the department facilities to work with any type organism. Several faculty members have labs in the Complex Carbohydrate Research Center, which is housed in a \$5 million research building and is currently composed of six faculty members and 100 support personnel.

The research laboratories are equipped with most of the specialized equipment required for modern biochemical research including automated amino acid analyzers, analytical and preparative ultracentrifuges, liquid scintillation counters, recording spectrophotometers, spectrofluorimeters and stopped-flow devices, electron paramagnetic resonance spectrometers, mass spectrometers, protein sequencers, DNA synthesizers, HPLCs, mini-computers and other specialized equipment.

Graduate students are usually admitted at the beginning of fall quarter, but in special cases a student with previous experience may be admitted in January, March, or June. Deadline for most fellowships and assistantships is January 15, but exceptional qualifications may lead to awards at other times.

In addition to the courses listed below, a number of interdisciplinary courses such as Nucleic Acids (GN 892) and Molecular Genetics (GN 893, 894) are offered to interested students in the biochemistry and molecular biology graduate program. The listings in biology, botany, cellular biology, genetics, and microbiology should be consulted to determine the range of courses available to graduate students majoring in biochemistry and molecular biology. One year of a foreign language at the high school or college level is required for a master or doctoral degree.

Biochemistry (BCH)

601. Intermediate Biochemistry. 5 hours.

Prerequisite: BCH/BIO 310 or permission of department.

An intermediate-level course in general biochemistry which stresses the physical and chemical properties of biological molecules. This course will not serve as a prerequisite for advanced subject matter specialty courses in biochemistry. (ex. BCH 806-Enzymology).

602. Intermediate Biochemistry. 5 hours.

Prerequisite: BCH 401/601.

An intermediate-level course in general biochemistry which stresses intermediary metabolism. This course will not serve as a prerequisite for advanced subject matter specialty courses in biochemistry. (ex. BCH 806-Enzymology).

Biochemistry and Molecular Biology

603. Laboratory Techniques in Biochemistry. 5 hours. One lecture and four 3-hour lab periods. Prerequisite: BCH/BIO 310 or BCH 401/601.

A course designed to acquaint the student with basic techniques in biochemistry, to include enzyme assay and purification, nucleic acid purification and characterization, chromatography, spectrophotometry, and other modern techniques.

610. General Biochemistry. 5 hours.

Prerequisite: CHM 341 or equivalent.

A beginning graduate-level course in biochemistry for students requiring an intensive one quarter theory course as a background for applied courses in the life sciences.

700M. Master's Research. 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of department.

Research while enrolled for a master's degree under the direction of faculty members.

730M. Master's Thesis. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

801. Advanced Biochemistry. 5 hours.

Prerequisite: CHM 341 or equivalent.

An advanced course in general biochemistry designed to acquaint the student with the chemistry of essential cell constituents emphasizing aspects of importance in metabolism.

802. Advanced Biochemistry. 5 hours.

Prerequisite: BCH 801.

An advanced study of the intermediary metabolism of carbohydrates, fats and amino acids including the biosynthesis and function of proteins and nucleic acids.

804. Phytochemistry. 5 hours.

Prerequisite: BCH 802 and one course in botany.

A course emphasizing autotrophic aspects of plant metabolism, photosynthesis, nitrogen fixation, and integration with unique metabolic pathways in plants.

805. Biochemistry of Macromolecules. 5 hours.

Prerequisite: BCH 802 and two courses in physical chemistry.

A study of the chemical and physical principles employed in the study of macromolecules of biological importance.

806. Enzymology. 5 hours.

Prerequisite: BCH 802.

A study of enzyme kinetics, multi-enzyme systems, and the structure, regulation and biosynthesis of enzymes.

807. Advanced Enzymology. 5 hours.

Prerequisite: BCH 806.

A course stressing advanced theory in enzymology to include computer techniques in enzyme kinetics, rapid reaction kinetic analysis, determination of enzyme structure, active site analysis of enzymes, coenzyme function, and related topics.

808. Biochemical Research Techniques. 5 hours.

Prerequisite: BCH 802 and permission of department.

A course designed to acquaint the advanced student with research techniques used in biochemistry, including techniques for isolation, identification and analysis of biological compounds.

810. Biochemistry Seminar. 1-8 hours. (Max. 75 hours.) (A/S grading.)

Prerequisite: Permission of department.

811. Cell and Molecular Biochemistry. 3 hours. (Max. 15 hours.)

Prerequisite: BCH 801 and 802.

This course covers biochemistry of the structure, biosynthesis, assembly and function of the structural, architectural and cell-surface proteins of eucaryotic cells.

812A. Special Topics in Biochemistry. 3 hours.

Prerequisite: Permission of department.

814. Introduction to Research in Biochemistry. 5 hours. Three lectures and two library or lab periods.

Prerequisite: Permission of department.

A course designed to acquaint the incoming student with biochemical laboratory, computer, and library facilities.

822-822L. (CHM) Physical Methods in Inorganic and Bioinorganic Chemistry. 5 hours.

See CHM 822-822L.

823. (CHM) Bioinorganic Chemistry. 3 hours.

See CHM 823.

830. Biochemistry of Reproduction. 5 hours.

Prerequisite: BCH 802 or permission of department.

A study of the biochemical events which influence the process of mammalian reproduction.

852. (CB/MIB) Topics in Molecular Genetics and Biochemistry of Parasites. 5 hours.

See CB 852.

896. (GN) Fungal Genetics. 3 hours.

See GN 896.

900. Laboratory Research in Biochemistry. 1-15 hours. (Max. 75 hours.)

Prerequisite: Permission of department.

900D. Doctoral Research. 1-15 hours. (Max. 105 hours.)

Prerequisite: Permission of department.

Research while enrolled for a doctoral degree under the direction of faculty members.

901. Problems in Biochemistry. 1-15 hours. (Max. 75 hours.)

Prerequisite: Permission of department.

930D. Doctoral Dissertation. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Biological and Agricultural Engineering

E. Dale Threadgill, *Head*
 Brahm P. Verma, *Graduate Coordinator*,
 542-0870
 (Driftmier Engineering Center)

Programs of study leading to an MS in agricultural engineering and a PhD in biological and agricultural engineering are offered in several fields of interest including biochemical engineering, enzyme engineering, biosensors, biomechanics, bioprocessing, machine vision, robotics, artificial intelligence, electronics and controls, X-ray computed tomography, NMR spectroscopy, postharvest engineering, applied electrostatics, food engineering, agro-meteorology, animal environments, materials handling, environmental quality, water quality, machine systems, soil and water engineering, and waste management for biological, food and agricultural systems.

The department has 38 full-time faculty and over 40 research projects housed in four units located at the Athens, Griffin and Tifton campuses of the University. The principal facilities for academic instruction are located in the Driftmier Engineering Center on the Athens campus. Excellent research facilities and specialized modern laboratories are available not only on the Athens campus but also at the Griffin and Tifton campuses. The three locations provide exceptional opportunities for laboratory and field research under diverse environmental conditions. In addition, the department has aggressive interdisciplinary research programs with other departments in the College of Agricultural & Environmental Sciences, Division of Biological Sciences and College of Veterinary Medicine.

The Department accepts applications from graduates with a BS or a MS degree in engineering, physics, chemistry, biological sciences, mathematics, food science and agricultural sciences. Qualified applicants with a non-engineering degree are required to complete a prescribed set of undergraduate engineering science courses.

A candidate for a MS degree is required to complete 40 quarter hours of course credit and 10 hours of thesis research. The primary goal of this course of study is to have the candidate acquire a) deeper understanding in the selected field of knowledge, b) ability to synthesize knowledge, c) rational problem solving skills, and d) confidence in conducting independent work.

The PhD course of study is designed to achieve proficiency in unifying the diverse knowledge bases of the biological, agricultural, physical, social and engineering sciences to enable the student to lead in the discovery of engineering solutions critical to the development of complex biological and agricultural systems. The department places high value on advanced proficiency in mathematics, statistics, selected area(s) of science and knowledge of research methods. The selection of courses must be guided to have the student acquire a) in-depth knowledge in selected area(s) of science, b) ability to integrate diverse knowledge, c) creative thinking ability for defining problems, and d) ability to conduct original research.

The department provides research and teaching assistantships to qualified candidates based on availability of funds. Applicants desiring financial assistance should apply directly to the Graduate Coordinator of the department by January 31. Applications from under-represented groups are highly encouraged. Applicants from these groups may additionally qualify for financial assistance from sources specifically targeted to supporting them.

Engineering (EGR)

610. Introduction to Finite Element Analysis. 5 hours.

Prerequisite: [MAT 358 and EGR 355] or permission of department.

Biological and Agricultural Engineering

Introduction of fundamental finite element theory for the solution of engineering problems. Geometric modelling techniques, element selection, and tests for accuracy with emphasis on problems in structural mechanics and elasticity.

615. Research Methods. 2 hours.

Introduction to engineering research; factors affecting problem selection; research problem literature reviews; writing and presenting a research proposal; writing and presenting a thesis.

620. Design of Water Quality Control Systems. 5 hours.

Prerequisite: [EGR 330 and MAT 253] or permission of department.

Engineering design of water treatment systems to include potable water supplies, municipal and agricultural-industrial wastewaters. Conventional and emerging technologies such as created wetlands, land application, and water reuse.

625. Irrigation System Design. 5 hours.

Prerequisite: EGR 295 and 325.

The principles of soil-water-plant relationships, water supply, hydraulics and economics as they apply to the design and management of irrigation systems.

626. Open Channel Hydraulics and Sediment Transport. 5 hours.

Prerequisite: MAT 358 and EGR 325 and permission of department.

Design of unlined and lined channels for drainage in agricultural and related environmental applications. Analysis of flow measurement techniques based on critical flow concepts and background for applying the physics of sediment transport to agricultural and environmental problems.

630. Physical Properties of Biological Materials. 5 hours.

Four lectures and one 2-hour lab period.

Prerequisite: [EGR 355 and BIO 108-108L] or permission of department.

Mechanical properties of biological materials, modeling of load response, mechanical function of organisms, analysis, and problem solving.

641. Electrical Systems and Controls. 3 hours.

Two lectures and one 2-hour lab period.

Prerequisite: EGR 383.

The design of electrical systems for production and processing applications which involve electrical energy for light, heat, power, control, radiation and measurement with special emphasis on the design and utilization of control systems.

644. Water Management Systems. 5 hours.

Prerequisite: EGR 325.

An engineering design course utilizing the principles of hydrology, hydraulics, soil mechanics, erosion control, and economics in designing a

multiple-use water management system for a rural and/or urban watershed.

648. Instrumentation for Environmental Quality. 5 hours. Three lectures and two 2-hour lab periods.

A study of the basic principles of operation of instrumentation used to measure physical variables which determine environmental quality. The engineering design and application of measuring systems for airborne particulates, gaseous contaminants, odor and noise will be emphasized.

649. Design of Energy Systems. 5 hours.

Prerequisite: EGR 374.

The application of basic engineering sciences to the design of alternate energy systems. Particular emphasis is placed upon solar energy system design and also upon wind, biomass combustion, and low head hydro-electric energy systems. Energy storage and delivery systems will also be considered.

655. Processing Plant Design. 5 hours.

Prerequisite: EGR 381.

Design of systems for processing agricultural products including plant layout and process analysis.

658. (CSS) Soil Erosion and Conservation. 5 hours.

See CSS 658.

661. Momentum and Heat Transport Processes. 5 hours.

Prerequisite: MAT 358 or permission of department.

Integrated introduction to transport processes with emphasis on momentum and heat transfer. Equations of change are developed for continuous media and applied to problems in agricultural, biological, and environmental systems.

662. Mass Transport Processes. 4 hours.

Prerequisite: EGR 661 or permission of department.

Principles of mass transfer phenomena with emphasis on engineering applications arising in agricultural, biological, and environmental systems.

665. Machine Design II. 3 hours.

Prerequisite: EGR 365.

Design and selection of parts and components for mechanical systems; bearings, shafts, belts, chains, gears, clutches, brakes, fasteners, welds, springs.

666. Feedback Control Systems. 3 hours. Two lectures and one 2-hour lab period.

Prerequisite: MAT 358 and Senior status in engineering or permission of department.

Development and solution of differential equations that describe systems encountered in engineering will be reviewed. Feedback principles will include block diagram representation and simpli-

fication, system transfer functions, system types and characteristics, stability criterion, root locus and frequency response methods of systems analysis and compensation, and control system design.

670. Biomechanical Systems Design. 3 hours.
Prerequisite: EGR 351 and BIO 108-108L] or permission of department.
Corequisite: EGR 430/630.
Analysis of human body motions; modeling of forces of the human musculoskeletal systems.

671. Advanced Agricultural Structural Design. 5 hours.
Prerequisite: EGR 355 and 371 and permission of department.

An engineering design course in the design of agricultural and light-frame structures utilizing techniques of hot-rolled steel, cold-rolled steel and wood design.

680. Microprocessor-Based Control Systems. 5 hours.
Prerequisite: EGR 384.

The necessary background to enable students to design and develop microprocessor-based control systems is covered. Coverage of system architecture, input/output problems and programming will equip student for system design.

682. Advanced Structural Environment. 3 hours.
Two lectures and one 2-hour lab period.
Prerequisite: EGR 382.

Management of structural environments including greenhouse equipment, sensors and systems for environmental control, air quality, heating and cooling system, controlled atmosphere storage, models for air flow, animal and plant growth, and optimization of production.

690. Engineering and Design of Biochemical Processes II. 5 hours.
Prerequisite: EGR 250.

Kinetics of enzyme catalyzed reactions, applied enzyme catalysis, metabolic stoichiometry and energetics, cell culture kinetics, biochemical transport phenomena, design and analysis of biological reactors.

692. Engineering Design. 5 hours.
Prerequisite: Permission of department.
Identification of current engineering problems, principles of engineering design, and application of engineering fundamentals to a supervised design project.

695. Engineering and Design of Biochemical Processes III. 4 hours. Three lectures and one 3-hour lab period.
Prerequisite: EGR 490/690.

Design and evaluation of unit operations used for biological processing including filtration, centrifugation, cell disruption, isolation, extraction, crystallization and chromatographic purifications.

697. Bioprocess Monitoring and Control. 5 hours.
Prerequisite: [EGR 380 and 490/690] or permission of department.

Concepts of biological process control; modern control techniques and the optimization of batch, fed-batch and continuous bioreactors, and other biological systems.

700M. Master's Research. 1-15 hours. (Max. 15 hours.)
Prerequisite: Permission of department.

Research while enrolled for a master's degree under the direction of faculty members.

730M. Master's Thesis. 1-15 hours. (Max. 15 hours.)
Prerequisite: Permission of department.

802. Advanced Topics in Engineering. 1-5 hours. (Max. 20 hours.)

Prerequisite: Permission of department.
Special problems in engineering design, analysis, or synthesis.

803. Bio-Engineering Systems. 5 hours.

Prerequisite: EGR 374.
Engineering principles applied to plant and animal systems and environments, including principles of thermodynamics and kinetics which underlie the function of living cells and organisms.

809. Industrial Electronics. 5 hours.
Prerequisite: MAT 401/601, EGR 387 or equivalent.

Coverage of basic electronic components and circuits essential in the successful interfacing of transducers of light, moisture, heat, sound, counters, mechanical motion, etc. to research or industrial systems. Emphasis will be on the utilization of system building blocks, i.e., integrated circuits as opposed to circuit construction with discrete components.

816. Instrumentation for Engineering Research. 5 hours.
Prerequisite: EGR 384 and 387.

Electronic transducers, signal conditioning, and recording of physical variables in engineering research; data analysis; microcomputer-based instrumentation systems.

817. Finite Element Analysis. 3 hours.
Prerequisite: [EGR 374 and 356] or permission of department.

Development of finite element analysis using Galerkin's Method. Emphasis on heat transfer and fluid mechanics problems.

818. System Simulation. 5 hours.

Prerequisite: STA 422/622 or BSAE or equivalent.

Application of computer simulation to the solution of engineering problems in agricultural systems. Development of continuous and discrete simulation models as an aid to agricultural research and to the analysis of agricultural production management strategies.

820. Graduate Seminar. 1 hour. (Max. 4 hours.)

This course will be a series of seminars related to agricultural engineering research and will be presented by faculty, graduate students, and other selected researchers.

825. Modeling Water Quality for Nonpoint Sources. 5 hours.

Prerequisite: [MAT 358 and CSS 460/660] or permission of department.

Advanced mathematical modeling of watersheds. Equations are presented for the routing of surface runoff, sediment, and chemicals. Subsurface transport is discussed briefly. The student is introduced to several nonpoint source models, and a specific model is selected for detailed evaluation. Confidence limit analysis is introduced.

830. Theory of Drainage – Saturated Flow. 5 hours.

Prerequisite: [MAT 358 and CSS 460/660] or permission of department.

Quantitative analysis of flow in porous media with emphasis on saturated flow. Theoretical development and analytical and numerical solutions of the governing equations. Analysis of flow to subsurface drains, ditches, and wells. Design of agricultural drainage systems.

854. (CS) Computational Intelligence. 5 hours. See CS 854.

900D. Doctoral Research. 1-15 hours. (Max. 60 hours.)

Prerequisite: Permission of department. Research while enrolled for a doctoral degree under the direction of faculty members.

930D. Doctoral Dissertation. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Engineering Technology (ET)

609. Advanced Topics in Engineering Technology. 1-5 hours. (Max. 20 hours.)

Prerequisite: Permission of department. Advanced topics of study in engineering technology (for non-engineering students).

625-625L. (ENT/CSS) Pesticide Management and Utilization. 5 hours.

See ENT 625-625L.

660. Electric Power for Agri-Industrial Applications. 5 hours.

Prerequisite: ET 380.

Fundamentals and utilization of electric power relative to energy transmission, AC and DC electrical machines, industrial controls, and power semiconductors; equipment—theory of operation, evaluation, and selection for given tasks.

Biology (BIO)

Daniel V. DerVartanian, *Chairman*
(*Biological Sciences Building*)

The Division of Biological Sciences consists of the Departments of Biochemistry and Molecular Biology, Botany, Cellular Biology, Entomology, Genetics, Marine Sciences, Microbiology, the Institute of Ecology, and the Faculty of Cell and Developmental Biology. Degrees are granted only through the departments.

650. (BOT/CSS) Introduction to Gene Technology. 5 hours.

See BOT 650.

660. (GN) Evolutionary Biology. 5 hours.

Prerequisite: BIO/GN 320 or permission of department.

An introduction to the processes of evolution. Topics include: population genetics, speciation, systematics, coevolution, chemical origin of life, history of life, geological record and evolution of humans. (Fall quarter.)

701. (CB) Theory of Electron Microscopy. 3 hours.

Prerequisite: BIO 108-108L or equivalent, 3 quarters of introductory chemistry, 3 quarters of introductory physics, and/or permission of department. Instrument theory and theory of specimen preparation with emphasis on transmission electron microscopy. Fundamentals of scanning electron microscopy.

703. (CB/VAR) Electron Microscopy Laboratory. 2 hours. Two 3-hour labs.

Corequisite: BIO 501/701.

Preparation and examination of specimens using ultramicrotomy, metal shadowing and other basic methods for preparing specimens primarily for transmission electron microscopy. Limited introduction to techniques used in scanning electron microscopy.

704. (VAR/CB) Scanning and Analytical Electron Microscopy. 3 hours.

Prerequisite: Permission of department.

The principles and applications of the scanning electron microscope and its imaging and analytical (X-ray) detector systems are presented. Emphasis is placed on the preparation of biological and material specimens, instrumentation and analysis.

705. (VAR/CB) Scanning Electron Microscopy Laboratory. 2 hours. Two 3-hour lab periods.

Corequisite: BIO/VAR 504/704.

Preparation and examination of specimens using critical point drying, freeze drying, carbon evaporation and other basic SEM methods.

708. Current Topics in Biology. 3 hours. (Max. 15 hours.)

Twenty lectures and five 4-hour lab periods.

Current topics in biology for high school teachers.

800. Tropical Biology: An Ecological Approach. 12 hours.

Prerequisite: Graduate standing in one of the biological sciences; at least one course each in botany, cellular biology and general ecology. Given in Costa Rica February-March and July-August by Organization for Tropical Studies.

Introduction to biological concepts in the tropics through intensive field study. Applications required usually before November 1 and December 1.

Botany (BOT)

Alan J. Jaworski, *Head*

W. Marshall Darley, *Graduate Coordinator,*
542-1797

(*Plant Sciences Building*)

Graduate work leading to the MS or PhD degree in botany may be undertaken by qualified students. Within specifications set by the Graduate School (see General Degrees), all degree requirements are determined by the major professor and student in consultation with an advisory committee, including whether to require foreign languages. Inquiries by prospective students should be addressed to: Coordinator of Graduate Studies, Department of Botany. He will advise you of available financial assistance.

Facilities for graduate training in botany include a monoclonal antibody facility, greenhouses, growth chambers, field plots, a her-

barium, culture collection of algae and fungi, electron microscope laboratory, molecular cytology facility, fully equipped computer and word processing facilities, and modern research laboratories. Students planning careers in modern plant biology are encouraged to take courses in other areas of biology and related plant science departments. Research opportunities are also offered in the University Computer Center, the Electron Microscopy Laboratory, and the Institute of Ecology.

Field work may be done at the university marine laboratories at Sapelo and Skidaway Islands, Savannah River Ecology Laboratory, and several inland sites ranging from the coastal plains to the Blue Ridge mountains.

603. (LAR) Plant Communities of the Southeast. 5 hours.

See LAR 603.

610-610L. Biology of the Algae. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: BIO 104-104L or BIO 108-108L or BOT 122-122L.

Algal phylogeny, taxonomy, cytology, reproduction, and ecological relationships. Emphasis on the organismal biology of algae. Laboratories will concentrate on examination of living materials and will include methods for the isolation and culture of algae. (Spring quarter of even numbered years.)

613. (GGY) Plant Ecology and Biogeography. 5 hours.

See GGY 613.

620-620L. (PAT) Introductory Mycology. 5 hours.

See PAT 620.

623-623L. Plant Anatomy. 5 hours.

Prerequisite: BIO 104-104L or BIO 108-108L or BOT 122-122L and BIO 340 or permission of department.

Structure and growth of meristems; development and structure of cells, tissues, and tissue systems; comparative anatomy of stems, roots, leaves, flowers, and fruits; survey of recent advances in study of growth and development of form and emphasis on experimental approaches. Assumes elementary knowledge of cell and tissue structure. (Fall quarter.)

625. Biology of Secondary Plant Products. 5 hours.

Prerequisite: BOT 122, CHM 241-241L or permission of department.

Botany

An examination of the role of secondary plant metabolites such as alkaloids, terpenes and pigments on the relationships and interactions among plants and between plants and animals. (Alternate Spring quarters.)

626-626L. (ECL/ENT) Biological Collections Management. 5 hours.
See ECL 626-626L.

631. Evolutionary History of Land Plants. 3 hours.

Prerequisite: BIO 108-108L or BOT 122-122L or permission of department.

Major evolutionary events and trends that have shaped the history and diversification of land plants from their inception (Silurian) to present times. Both reproductive and vegetative character advances will be examined and analyzed. Course assumes elementary knowledge of land plant diversity (major taxa) and basic plant cell and tissue structure.

635-635L. Biochemical Systematics. 5 hours.

Three 1-hour lectures and two 2-hour labs.

Prerequisite: BOT 121, 122, CHM 240-241.

Application of natural product chemistry and biochemistry to problems in plant systematics. Laboratory will present general screening procedures for selected classes of natural products commonly used in plant systematics. (Winter quarter of even numbered years.)

650. (CSS/BIO) Introduction to Gene Technology. 5 hours.

Prerequisite: BCH/BIO 310 or BIO/GN 320 or equivalent or permission of department.

Methods and applications of gene cloning techniques will be taught, together with general concepts in molecular biology. Topics covered will include structure and synthesis of nucleic acids and proteins, gene regulation, cDNA and genomic libraries, and polyclonal and monoclonal antibodies. This course is not intended for those majoring in molecular biology.

665-665L. Plant Taxonomy. 5 hours. Three 1-hour lectures and two 2-hour lab periods. Weekend field trips.

Prerequisite: BIO 104-104L or BIO 108-108L or BOT 122-122L.

History of taxonomy, nomenclature, characters, identification principles, classification, taxonomic relationships, taxonomic literature, species biology, collecting and herbarium, floristic studies. (Spring and Summer quarters.)

671-671L. Principles of Plant Systematics. 5 hours. Three 1-hour lectures and two 2-hour lab periods. Weekend field trips.

Prerequisite: BIO 104-104L or BIO 108-108L or BOT 122-122L.

Principles of systematics, principles of nomenclature, concepts of rank and taxa, characterization and description, problem design, analytical procedures, data presentation, identification of special groups, classification, phylogenetic relationships, polymorphism, literature and bibliographic aids. Labs: Morphology and arrangement of selected phylogenetically significant families; preparation of a revision of small genus or species complex. (Fall quarter of even numbered years.)

672-672L. Variation and Evolution in Plants. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: BIO 104-104L or BIO 108-108L or BOT 122-122L; a course in genetics or cytology would be useful but is not required.

Processes and mechanisms of variation and evolution, genotypic and phenotypic patterns, chemosystematics, adaptation, breeding systems, polyploidy, hybridization, apomixis, polymorphisms, use of evolutionary data taxonomically, literature, experimental design, population sampling. Variation analysis, breeding techniques, data presentation, population analysis, cytotoxic techniques, scanning electron microscope. (Spring quarter of odd numbered years.)

676. (GGY) Plant Geography. 5 hours. Five lectures.

Prerequisite: BIO 104-104L and 350, or equivalent; plus five hours at the 300-level or above in botany, or ecology, or geology, or physical geography.

Theories of phytogeographical zonation, plant-geographic processes, and current potential natural vegetation. Includes physical and environmental factors, plant-environment relations, plant roles and types, vegetation dynamics, geographic responses to disturbance, and vegetation of main world biomes. Emphasis on global-scale patterns and relationships.

677-677L. Community Ecology. 5 hours. Three lectures and two lab periods.

Prerequisite: BIO 350 and MAT 253 or permission of department.

The study of community structure, classification, distribution and development. (Spring quarter.)

683-683L. Plant Physiology. 5 hours. Three lectures and one triple lab period.

Prerequisite: BIO/BCH 310 or equivalent.

Plant physiology for students with cell physiology or biochemistry background. Water relations, mineral nutrition, transport of materials, respiration, photosynthesis, growth and development. (Spring quarter.)

691. Plant Molecular, Cellular, and Developmental Biology I. 5 hours.

Prerequisite: [BCH/BIO 310 or BIO/GN 320] or equivalent.

Principles and experimental methods in plant genetics and gene expression including model genetic systems, genetic and RFLP maps, the structure and expression of plant genes, genetic engineering, genome organization and evolution and computer analysis of protein and DNA databases. (Fall quarter.)

692. Plant Molecular, Cellular, and Developmental Biology II. 5 hours.

Prerequisite: [BOT 691 or BOT/BIO/CSS 650] or equivalent.

Structural, physiological and biochemical properties of plant cells and their organelles, membranes, cytoskeletal systems and cell walls. Biogenetic pathways for formation of these structures are also considered. Interrelated to topics covered in BOT 691 and BOT 693. (Winter quarter.)

693. Plant Molecular, Cellular, and Developmental Biology III. 5 hours.

Prerequisite: [BOT 691 or BOT/CSS/BIO 650] or equivalent.

Concepts and experimental methods in plant development integrating molecular genetic and organismal approaches, including theoretical treatments, growth regulators, signal transduction, responses to the environment, cell-cell interactions, embryogenesis, and the differentiation of each of the organ systems. (Spring quarter.)

700M. Master's Research. 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of department.

Research while enrolled for a master's degree under the direction of faculty members.

730M. Master's Thesis. 1-15 hours. (Max. 24 hours.)

Prerequisite: Permission of department.

802. Introduction to Botanical Research. 1-5 hours. (Max. 5 hours.) Three lectures and two library or lab periods.

Prerequisite: Permission of department.

A course to acquaint the incoming student with the breadth of current botanical research and with the facilities available for botanical research. (Fall quarter.)

804A. Botanical Research. 1-5 hours. (Max. 10 hours.) Three 5-hour lab periods.

Prerequisite: Permission of department.

Faculty-directed, laboratory or literature research of a botanical problem. Not for thesis or dissertation research.

805-805L. Terrestrial Biogeochemical Cycling.

5 hours. Two 1-hour lectures and two 3-hour labs.

Prerequisite: BIO 350, STA 421/621, 422/622, and permission of department.

Examination of plant processes which mediate biogeochemical cycling on land. Includes survey of global element cycling, functions of essential elements, element acquisition, translocation and loss by plants, litter decomposition, and methods of estimating standing stocks of elements in and transfer rates of elements between ecosystem components. (Spring quarter of odd numbered years.)

812-812L. (ECL) Plant Reproductive Ecology. 5 hours.

See ECL 812-812L.

814. Algal Ecology. 3 hours.

Prerequisite: [BOT 410/610-410L/610L] or permission of department.

Physiological ecology of algae found in various habitats including phytoplankton, benthic microalgae, seaweeds and symbiotic associations. (Spring quarter of odd numbered years.)

814L. Algal Ecology Lab. 2 hours.

Two five-hour lab periods.

Prerequisite: [BOT 410/610-410L/610L] or permission of department.

Techniques for phytoplankton enumeration, nutrient and pigment analysis, measuring photosynthesis and nutrient uptake and culturing algae in chemostats; using both natural populations and cultures. (Spring quarter of odd numbered years.)

821-821L. (PAT) Biology of Ascomycetes. 5 hours.

See PAT 821.

823. Monoclonal Antibodies as Research Tools.

5 hours. Two hours lecture and three 3-hour lab periods.

Prerequisite: BCH 402/602 and MIB 410/610 or permission of department.

Course emphasizes the theoretical and practical aspects of antibodies as research tools in the life sciences. Production of both polyclonal and monoclonal antibodies will be considered, as well as their applications for immunovisualization, immunopurification, immunoquantitation, and other analytical applications.

831. (ECL/FRS) Population Ecology. 5 hours.

Three 2-hour meetings per week including lecture, discussion, and readings from the current literature.

See ECL 831.

832-832L. (PAT) Biology of Phycmycetes. 5 hours.

Prerequisite: BOT/PAT 420/620.

Comparative morphology of the Phycmycetes and related groups. Discussion of the physiology of growth and development in these organisms. (Fall quarter of even numbered years.)

834-834L. (PAT) Experimental Mycology. 5 hours.

Prerequisite: PAT/BOT 420/620-420L/620L or permission of department.

Experimental approaches to the study of fungal biology and ecology and the use of fungi as experimental organisms in the study of development and molecular biology and genetics.

860. Aquatic Plants. 5 hours. Two one-hour lectures or discussion periods and three double laboratory periods.

Prerequisite: Any two courses numbered above 300 in botany, entomology, or zoology which would provide training in the fundamentals of taxonomy of any group(s) of organisms.

Identification and biology of aquatic macrophytes with emphasis on field work. Local and over-night field trips required.

870. Plant Population Biology Seminar. 1-2 hours. (Max. 16 hours.)

Prerequisite: Permission of department.

Seminar on current botanical research topics.

877. Communities and Ecosystems. 5 hours.

Prerequisite: BOT 477/677 or equivalent.

Advanced synthesis of Physiological, Population, Community and Ecosystem studies in the major terrestrial plant associations of the world. (Winter quarter of even numbered years.)

880. Plant Systematics and Evolution Seminar. 1-2 hours. (Max. 16 hours.)

Seminar on current botanical research topics. (Winter quarter.)

881. Lower Plants Seminar. 1-2 hours. (Max. 16 hours.)

Seminar on current botanical research topics.

882. Plant Physiology Seminar. 1-2 hours. (Max. 16 hours.)

Seminar on current botanical research topics.

884. Plant Ecology Seminar. 1-2 hours. (Max. 16 hours.)

Seminar on current botanical research topics. (Fall, Winter and Spring quarters.)

886. Plant Anatomy, Morphology, and Cytology Seminar. 1-2 hours. (Max. 16 hours.)

Seminar on current botanical research topics.

888. Advanced Plant Developmental Biology. 5 hours.

Prerequisite: BOT (CSS/BIO) 650 and BOT 423/623-423L/623L or permission of department.

Concepts and experimental methods in plant developmental biology, including morphological, anatomical, physiological, and molecular genetic approaches. Cell division, meristems, growth regulators, model systems, embryogenesis, morphogenesis, roots, shoots, leaves, flowers, senescence, cell/cell interactions, cell culture, differential gene expression, genome instability.

889-889L. Environmental Physiology. 5 hours. Four hours lecture and one 3-hour lab period.

Prerequisite: BOT 483/683 or permission of department.

Energy balances, water relations, stomatal physiology, gas exchange, environmental aspects of mineral nutrition, stress physiology, and productivity. (Fall quarter.)

890. (CSS) Advanced Plant Genetics. 5 hours. See CSS 890.

900D. Doctoral Research. 1-15 hours. (Max. 100 hours.)

Prerequisite: Permission of department.

Research while enrolled for a doctoral degree under the direction of faculty members.

930D. Doctoral Dissertation. 1-15 hours. (Max. 20 hours.)

Prerequisite: Permission of department.

Business

Albert W. Niemi, Jr., *Dean*

Kay L. Keck, *Academic Coordinator of Graduate Studies, 542-5671 (Brooks Hall)*

Eight graduate degree programs are offered by the Terry College of Business: the Master of Business Administration, Master of Accountancy, Master of Marketing Research, Master of Arts in business administration and in economics, Master of Applied Mathematical Science, and Doctor of Philosophy in business administration and in economics. The MBA, MAcc, and MMR degrees lead to professional and managerial careers. The MA programs are used for intensive specialization or as a path to the PhD. The PhD programs lead to research and/or teaching careers.

MBA

The one-year MBA program and MMR program admit students in the summer only. The two-year MBA program admits students in the fall only. All other programs in the Terry College of Business admit students quarterly.

The MBA degree requires two years for students without undergraduate preparation

in business administration and one year for students entering with an AACSB accredited BBA degree. Broadly speaking, the MBA program provides a mixture of practical and theoretical studies to prepare the student to become a first-rate managerial problem-solver in either the private or the public sector. Through its curriculum and faculty research, the program exposes the student to the thought processes necessary to fulfill important business roles in a rapidly changing environment.

The program's basic objectives are:

1. To provide a basic analytical tool kit for management, including fundamental concepts and principles from the various management disciplines, and an understanding of the major institutions in business and government.
2. To develop skill in using these tools in an imaginative, orderly, problem-solving capacity.
3. To advance the ability to make and carry out decisions.
4. To develop a basis for dealing effectively with others, in person and in writing.
5. To encourage continuous learning from experience.
6. To instill a thorough understanding of today's economic, political, and social environment.

These objectives are central to the curriculum design, faculty selection and promotion, and to the commitment of resources to new programs and research efforts. But in addition to providing a foundation upon which to build and grow, the program ensures each student a strong area of competency.

The first year consists of core course work. These courses introduce tools, concepts, and techniques for managerial decision making in the basic areas of business. Courses include accounting, finance, production management, information systems, ethics, statistics, economics, legal environment of business, marketing, and organizational behavior. The second year consists of sequence and elective course work, business policy, and the Executive Lecture Series.

The one-year MBA consists of four consecutive quarters of course work. Between 12 and 16 hours of required core courses are

taken during the first quarter. During the rest of the year, the student takes eleven electives, business policy, and the Executive Lecture Series.

Each student must take three courses in two areas of concentration. Five electives are available to gain additional breadth or depth in the concentration. A calculus course is a prerequisite for enrollment. Please refer to the MBA brochure for additional program information.

MAcc

The MAcc program is designed to prepare students for professional careers in financial accounting, public sector accounting, auditing, managerial accounting and controllership, information systems, or taxation. Students usually enter this program after having earned a baccalaureate degree. However, the currently enrolled accounting majors at The University of Georgia may enter at the beginning of the senior year, in which case the student will earn both a baccalaureate and master's degree. The program involves 47 quarter hours beyond the business and accounting foundation.

MA

The MA programs enable students to secure a working knowledge in business administration or economics. After satisfying undergraduate foundation requirements, the student, counseled by a major professor, designs a program of at least 40 quarter hours built around a research field. The thesis and course work represent an integrated program of study. Master of Arts programs are offered in economics, finance, management, management sciences, real estate, and risk management and insurance.

PhD

The PhD programs provide a background for careers in government, business, academia, and research. The doctoral program is individually planned for each student by the major professor and advisory committee. There is no foreign language requirement.

Business

Students in the PhD in Business Administration develop a high level of competency in a major field of business, a minor field, and a research methodology. In addition, all students must have knowledge of mathematics through differential and integral calculus. Programs leading to the PhD in Business Administration are offered in:

- Accounting
- Business Finance
- Management Information Systems
- Management Sciences
- Marketing
- Human Resource Management
- Production/Operations Management
- Real Estate
- Risk Management and Insurance
- Strategic Management

The PhD in Economics is offered with emphasis on microeconomic theory, macroeconomic theory, and two of the following fields:

- Financial Economics
- Econometrics
- Economic Development
- Economic History
- Industrial Organization
- International Economics
- Labor Economics
- Monetary Economics
- Public Finance
- Productivity Analysis

In addition, all students must have knowledge of differential and integral calculus.

Accounting (ACC)

Russell M. Barefield, *Director*
Jennifer J. Gaver, *Graduate Coordinator,*
(PhD), 542-3699
Russell M. Barefield, *Graduate Coordinator,*
(MAcc), 542-1616
(Brooks Hall)

703. Advanced Accounting. 4 hours.
Application of accounting theory to specialized accounting areas including accounting for equity investments and for business combinations, preparation of consolidated financial statements, accounting for the effects of foreign currency exchange rate fluctuations, and accounting for non-profit organizations.

710. Managerial I. 4 hours.
Prerequisite: ACC 110 and 111.

Emphasis is upon utilization of cost data in planning and controlling activities. Internal and external data are woven into the planning models. Specific areas are: process, job order, standard, functional relationships, and budgeting.

720. Auditing I. 4 hours.
Prerequisite: ACC 530/730 and MS 312.

An in-depth review of the profession's auditing standards and of the steps involved in (1) planning the audit, (2) reviewing the system of internal control, (3) performing substantive auditing procedures, and (4) writing audit reports. Emphasis is placed on statistical sampling and auditing computerized systems. An overview of SEC regulations is provided.

730. Systems I. 4 hours.
Prerequisite: MAN 209-209L or 219H-219L and ACC 500.

Electronic data processing, software applications, file maintenance data structure, transactions flow, systems analysis, and systems control.

740. Tax I. 4 hours.
Prerequisite: ACC 111 or 113H or 799.

A basic federal income tax course, involving a study of history and background, general concepts of taxation, income, deductions, and federal income taxation primarily relating to individuals. This course is designed for accounting majors to emphasize the application of technical rules to factual situations such as those typically encountered by an accountant.

741. Tax II. 4 hours.
Prerequisite: ACC 540/740.

A continuation of ACC 740. Includes the study of income tax laws applicable to corporations, subchapter S corporations, partnerships, estates, trusts, and an introduction to social security taxes and estate and gift taxes, and tax research methodology.

742. Tax III. 4 hours.
Prerequisite: ACC 540/740.

Selected sections of the Internal Revenue code, primarily dealing with corporations, are used to emphasize tax planning and research. Limited treatment of estate planning is given.

771. Professional Accounting. 3 hours.
Ethics, responsibility and liability of the accountant.

799. Principles of Accounting. 4 hours.
An introduction to the collection of business data, to the preparation and interpretation of financial statements, and to the limitations inherent in them. An introduction to cost accounting techniques and preparation of information for managerial decision-making.

801. Theory I. 4 hours.

Prerequisite: ACC 502.

Examination of the development of accounting theory, policy, and institutions. Emphasis is placed upon the objectives of financial reporting and the conceptual framework for income measurement. Some attention is given to the substantive issues involved in contemporary problems.

810. Managerial II. 4 hours.

Prerequisite: ACC 510/710.

A major emphasis of this course is the application of cost accounting techniques to "real world" problems, so that the student can learn the difficulties and complexities involved in using the cost accounting techniques learned in this course and previous managerial accounting courses.

814. Accounting and Information Systems. 4 hours.

Prerequisite: ACC 111 or equivalent.

Managerial accounting, planning and control. Cost behavior, costing methods, standards, flexible budgets. Responsibility accounting and the contribution approach. Economic evaluation of alternatives: relevant cost analysis for problem solving. Evaluation of segmental performance in multi-unit enterprises. Transfer pricing. (Not open to MAcc students.)

814A. Accounting and Information Systems. 2 hours.

Prerequisite: Permission of department.

Same as ACC 814. This course is primarily for the MBA program.

820. Auditing II. 4 hours.

Prerequisite: ACC 520/720.

Practice cases are used to give the student practical experience in auditing concepts covered in ACC 720. Students are required to compute a practice case. A series of cases are assigned in which a specific problem is addressed requiring the student to research and write a report detailing the solution.

830. Systems II. 4 hours.

Prerequisite: ACC 530/730 or equivalent.

To develop an understanding of and an appreciation for financial information systems, design and control, with an emphasis on electronic data processing systems.

831. Systems III. 4 hours.

Prerequisite: ACC 530/730.

An in-depth examination of particular financial information systems. Emphasis is placed on current developments in the area.

841. Tax IV. 4 hours.

Prerequisite: ACC 542/742 or permission of department.

A detailed study of tax problems of corporations and their shareholders.

842. Tax V. 4 hours.

Prerequisite: ACC 542/742 or permission of department.

This course involves an examination of fundamental legal concepts, technical rules, and computational procedures relating to federal taxation of partnerships and partners. Areas of emphasis include partnership formation, operations, and termination. Additional topics covered include changes in partner ownership, family partnerships, and limited partnerships.

843. Tax VI. 4 hours.

Prerequisite: ACC 542/742 or permission of department.

This course should be taken last in the tax sequence. Emphasis on role of accountant in life-time planning and administration of estates.

844. Tax VII. 4 hours.

Prerequisite: ACC 542/742 or permission of department.

An examination of the fundamental legal concepts, technical rules, and computational procedures relating to federal taxation of corporations and shareholders. Areas of emphasis include corporate reorganizations, Subchapter S corporation, and the filing of consolidated tax returns.

849. Tax Implications in Management Decisions. 4 hours.

Prerequisite: ACC 799.

Furnish the potential manager with an understanding of selected provisions of federal income and estate taxation relevant in making business decisions. (Not open to MAcc students.)

872. Accounting Policy. 3 hours.

An analytical examination of the broad policy issues facing accountants in all areas of society. An integration of the functional fields of business and the component areas of accounting.

899. Directed Study in Accounting. 1-15 hours. (Max. 30 hours.)

Prerequisite: Permission of department.

Directed study or research in the area of accounting.

900D. Doctoral Research. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Research while enrolled for a doctoral degree under the direction of faculty members.

910. Research Seminar I. 5 hours.

Research methodology is the focus of the first half of this seminar. Various methodological approaches are studied in general, and specific accounting applications are studied in more detail. The second half of this seminar is focused on

Business

management accounting research. The current state of the art of management accounting research and prospects for the future are emphasized.

911. Research Seminar II. 2-5 hours.

Prerequisite: ACC 910.

An in-depth review of selected research in financial accounting. Emphasis is on empirical research and appropriate research methodology.

912. Research Seminar III. 5 hours.

Prerequisite: ACC 910 and 911.

Students prepare and present a formal research proposal. Proposals serve as a prototype of an eventual dissertation proposal. However, it is not a requirement that the proposal represent the student's final dissertation subject area.

930D. Doctoral Dissertation. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Banking and Finance (FIN)

James A. Verbrugge, *Head*
William L. Megginson, *Graduate*
Coordinator, 542-3648
(Brooks Hall)

654. Small Business Finance and Venture Capital. 5 hours.

Prerequisite: FIN 330 or FIN 800 or equivalent.

Principles of small business finance and the raising and management of venture capital. Financial planning and forecasting. Capital budgeting and working capital management in the small firm. Sources of capital.

681. International Finance: Theory and Policy. 5 hours.

Prerequisite: FIN 330.

Balance of payments analysis, international equilibrium and the mechanism of adjustment, international money markets and monetary standards, capital movements and the objectives of international monetary policy and international corporate finance.

687. (AAE) Commodity Markets. 5 hours.

See AAE 687.

700M. Master's Research. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Research while enrolled for a master's degree under the direction of faculty members.

730M. Master's Thesis. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

800. Financial Management. 2-4 hours.

Intensive analysis of financial decision-making in the firm with emphasis on both short-term and long-term asset and financing decisions. Analytical tools of finance will be introduced. The course will focus upon valuation concepts, risk-return analysis, financial statement analysis, financial planning and forecasting, working-capital management, capital budgeting, and capital structure.

801. Investments. 4 hours.

Prerequisite: FIN 800 or equivalent.

Examination of theories and evidence about the securities markets. Examined are classes of securities rather than specific securities, efficient markets hypotheses, the Capital Asset Pricing Model, and empirical evidence.

802. Advanced Portfolio and Capital Market Theory. 4 hours.

Prerequisite: FIN 800 or equivalent.

Comprehensive study of the theory underlying the management of portfolios consisting of securities and other types of assets. Measurement of risk and return, utility analysis, construction of optimal portfolios, capital market theory, and the evaluation of portfolio performance.

805. Financial Markets and Investments. 2 hours.

Prerequisite: FIN 800.

A study of how financial markets work. Topics include capital market efficiency and risk, portfolio risk, asset-pricing models, interest rate risk and duration, futures markets, and option contracts. Particular emphasis is placed upon the efficiency and equilibrating mechanisms of these markets.

806. Advanced Financial Management. 4 hours.

Prerequisite: FIN 800.

Extension of long-term financing and capital budgeting as covered in FIN 800. Specific topics include intermediate term financing, theory of leverage, valuation, convertibles and warrants, acquisitions and bankruptcy.

808. Management of Financial Institutions. 4 hours.

Prerequisite: FIN 800 or equivalent.

Analysis of the financial management problems of financial institutions. Special attention will be devoted to commercial banks, savings institutions and pension funds.

809. Advanced Working Capital Management. 4 hours.

Prerequisite: FIN 800 or equivalent.

An intensive study of working capital management. Modern developments in the areas of cash management, credit policy, inventory policy and overall working capital management are emphasized.

820. (ECN) Monetary Policy. 5 hours.

See ECN 820.

830. Long-Term Financial Decisions. 4 hours.

Prerequisite: FIN 800 or equivalent.

Long-term capital investment and financing decisions, including an intensive study of risk analysis in the selection of capital investments. The cost of capital.

833. Advanced Speculative Markets. 4 hours.

Prerequisite: FIN 800 or equivalent and MS 800 and MAT 253 or equivalent.

Advanced treatment of the economics of financial futures and options markets. Advanced theory of hedging with speculative financial instruments.

851. Money Market Institutions. 4 hours.

A study of the flow of funds, credit instruments, role of financial institutions, and the structure of interest rates.

881. Seminar in International Finance. 4 hours.

World monetary system, international money and capital markets, financing for multinational business.

899. Directed Study in Finance. 1-15 hours.

(Max. 15 hours.)

An examination of the most recent professional contributions in the various special fields of finance. Student and instructor interests determine which particular field is brought under scrutiny.

900D. Doctoral Research. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Research while enrolled for a doctoral degree under the direction of faculty members.

930D. Doctoral Dissertation. 1-15 hours. (Max. 75 hours.)

Prerequisite: Permission of department.

931. Seminar on Investments. 5 hours.

Prerequisite: Master's degree or permission of department.

Basic concepts in stochastic processes and in calculus are reviewed and applied to topics in investments theory. Equilibrium models of option pricing and term structure are developed.

951A. Seminar in Theory of Finance I. 5 hours. (Max. 10 hours.)

Prerequisite: Master's degree or permission of department.

Basic theory of asset valuation in perfectly competitive capital markets under conditions of certainty. The individual's optimal consumption-

investment decision and its implication, the role of capital markets in smoothing consumption patterns, and the characteristics of firms that will outbid others for society's scarce resources are set forth. Irrelevance of dividends.

951B. Seminar in Theory of Finance II. 5 hours.

(Max. 10 hours.)

Prerequisite: FIN 951A.

Extension of the analysis of FIN 951A into a risk and uncertainty context. Expected utility, the consumption-investment decision in a risky environment, and the impact of risk on asset values, rates of return, and the characteristics of general capital market equilibrium are studied.

951C. Seminar in Theory of Finance III. 3-10 hours. (Max. 10 hours.)

Prerequisite: FIN 951B and permission of department.

Advanced survey of contemporary issues in finance with emphasis on the nature of research. Topics will include theory and tests of market efficiency, models of asset pricing, corporate financial policy, etc.

961. Seminar in Financial Institutions and Markets. 5 hours.

Prerequisite: Master's degree or permission of department.

Many institutions, once regarded as specialized firms, are diversifying into new products and markets. This seminar will apply the tools of financial management to analyze the elements of this new competitive environment and their effects. PhD skills in teaching and research will be developed. Research component will be stressed.

Economics (ECN)

Fred Bateman, *Head*

Arthur A. Snow, *Graduate Coordinator,*

542-3752

(Brooks Hall)

647. The Economics of Industrial Organization. 5 hours.

Prerequisite: ECN 861.

Industrial organization is a theoretical and empirical study of how structure and conduct of industries affect economic performance and public policies. Structure includes studies of concentration, barriers to entry; conduct includes analysis of pricing and product strategy; performance includes price-cost patterns, profits and technology; public policies include antitrust law.

647A. The Economics of Industrial Organization. 4 hours.

Prerequisite: Permission of department.

Business

Same as ECN 647. This course is primarily for the MBA program.

648. Public Utilities, Regulation and Enterprise. 5 hours.

Prerequisite: ECN 861.

Nature, background and significance of public utilities in our economy; economic and philosophical basis for government regulation and ownership in the public utilities sector; legal basis for and restrictions upon federal, state, and local regulatory authorities; development characteristics, rights, and duties of regulated industries; utility problems of regulation (rates, service securities).

648A. Public Utilities, Regulation and Enterprise. 4 hours.

Prerequisite: Permission of department.

Same as ECN 648. This course is primarily for the MBA program.

649A. Economic Analysis of Law. 4 hours.

Prerequisite: Permission of department.

This course will deal with the economics of law and government. The court (common law) and legislative (statute law) systems are viewed as resource allocating mechanisms which supplement or replace the market. An economic analysis of the behavior of these systems and of the output of the systems is provided; consideration is given to the implications of each system for efficiency.

694. Labor Market Analysis. 5 hours.

Prerequisite: ECN 861.

A presentation of current theories, recent empirical investigations, and historical and current data source materials in the area of labor supply at the local, state, regional, and national levels. The course will focus upon: (1) evaluation of the quality and quantity of the labor resource available to a labor market, (2) application of labor market data by firms and government agencies, and (3) the role of the labor resource in explaining the South's regional position in the national economic setting.

694A. Labor Market Analysis. 4 hours.

Prerequisite: Permission of department.

Same as ECN 694. This course is primarily for the MBA program.

696. Managerial Economics. 5 hours.

Prerequisite: ECN 861.

Concepts, tools and methods of economic analysis relevant to a broad cross section of decisions within the business firm; analysis of market demand, cost relevant to various decisions; capital budgeting; and interrelationships between price policy, costs, promotion outlays, operating rates, capital budgets and financing in the short and long run.

696A. Managerial Economics. 4 hours.

Prerequisite: Permission of department.

Same as ECN 696. This course is primarily for the MBA program.

697. Economic Evolution of the United States. 5 hours.

Prerequisite: ECN 861.

Economic evolution of the United States, emphasizing use of tools of quantitative and qualitative analysis as applied to American economic evolution.

697A. Economic Evolution of the United States. 4 hours.

Prerequisite: Permission of department.

Same as ECN 697. This course is primarily for the MBA program.

700M. Master's Research. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Research while enrolled for a master's degree under the direction of faculty members.

730M. Master's Thesis. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

800. Micro Economic Theory. 5 hours.

Prerequisite: ECN 106 and 107.

Economic theory of households and firms. Determination of equilibrium product and factor prices, allocation of resources, and distribution of income.

801. Macro Economic Theory. 5 hours.

Prerequisite: ECN 106 and 107.

National income theory and policy. Determination of income, employment, prices and interest rates.

802. Economics Workshop. 2 hours. (Max. 12 hours.)

Prerequisite: Permission of department.

Lectures and discussions on a diverse set of topics. Emphasis is on detailed presentations of research papers by students, faculty, and visiting scholars. Topics and methodology will vary from session to session.

804. Public Finance. 5 hours.

Prerequisite: ECN 800 or permission of department.

Theories of market failure, collective choice, welfare measurement, and criteria for microeconomic evaluation of public policy. Analysis of selected expenditure and redistributive programs. Theories of optimal taxation and tax incidence. Effects of taxation on saving and labor supply. Analysis of selected tax systems.

805. Advanced Economic Theory I. 5 hours.

Prerequisite: Core courses in economics.

An analysis of selected problems in microeconomic theory.

806. Advanced Economic Theory II. 5 hours.

Prerequisite: ECN 805.

An analysis of selected problems in macroeconomic theory.

809. Advanced Economic Theory III. 5 hours.

Prerequisite: Advanced training in economic theory and permission of department.

An application of the concepts of macro and micro economic theory to a world of disturbance, change, and growth. Attention is given to the micro economic foundations of employment and inflation under conditions of equilibrium and disequilibrium.

812. Advanced Microeconomic Theory. 5 hours.

Prerequisite: MAT 255 and ECN 805.

Modern general equilibrium analysis and welfare economics with an emphasis on consumer theory. Familiarity with calculus and aspects of modern mathematics (convex analysis) is assumed.

820. (FIN) Monetary Policy. 5 hours.

Prerequisite: ECN 800 and 801 or permission of department.

Monetary theory and how it affects monetary policy; objectives, techniques, and problems involved; treasury, fiscal and debit management policy as they affect and are affected by Federal Reserve policy.

848. Advanced Industrial Organization. 5 hours.

Prerequisite: ECN 448/648.

Advanced industrial organization topics in the field of industrial organization including the structure, conduct, and performance in relevant product and geographic markets; the nature, background, significance and issues in public policy with emphasis on federal and state public utility and antitrust regulation; technological change; industry studies; and economic capacity.

850. Monetary and Banking Theory. 5 hours.

Prerequisite: ECN 800 and 801 or permission of department.

The development of monetary and banking theories in economic thought from David Hume to the present. Emphasis is on the implications of monetary theories as they are reflected in various demands for money.

860. Survey of Business Economics. 2 hours.

Theories of consumer and producer behavior and models of market structure, with discussions of the nature of the firm and various aspects of government and business relations.

861. Business Economics I. 4 hours.

The objectives of this course are to explain (1) the economic basis for the existence of the firm; (2) the primary external environment of the firm, called markets; (3) the basis for government influence on economic entities and how economic entities

use government to meet their objectives; and (4) production and distribution decision-making within the firm.

862. Business Economics II. 2 hours.

This course (1) studies historical observations and facts about the U.S. economy on such aggregate quantities as the gross national product, the unemployment rate, the inflation rate, the interest rates, and the foreign exchange rates, (2) develops workable theories to explain these observations and facts, and (3) studies formation, implementation, and evaluation of fiscal and monetary policies.

869. Mathematical Analysis for Economics. 5 hours.

Prerequisite: Permission of department.

Selected topics from differential and integral calculus of multiargument functions. Also included are those techniques of differential and difference equations required in dynamic economic models.

870. Mathematical Economics I. 5 hours.

Prerequisite: Permission of department.

Application of mathematical methods to economic theory and problems including joint supply and demand relationship, general equilibrium, cost curves and production functions.

872. Seminar in Economic Theory. 2-5 hours. (Max. 10 hours.)

Prerequisite: ECN 800, 805, and 812 or permission of department.

Intensive study of research papers relating to a central theme of special interest in the field of economic theory. The focus is on the presentation and critical evaluation of published and unpublished research papers employing advanced theoretical models.

879. International Trade: Theory and Policy. 5 hours.

Prerequisite: Permission of department.

Theoretical analysis, historical survey and current problems of international trade; an examination of international economic policies and institutions especially as they relate to national political and economic objectives; trade barriers and controls.

880. Seminar in International Trade. 5 hours.

Prerequisite: ECN 879, FIN 481/681, or equivalent and permission of department.

Advanced international trade and payments theory and the application of concepts to current problems. Special attention will be given to problems of adjustment to changing patterns of international trade and payments.

889. Economics of the Labor Market. 5 hours.

Prerequisite: ECN 800 and 895.

Business

Application of neoclassical economic theory to the study of the market and non-market allocation of time. Topics to be covered include labor demand and supply, human capital investment, unions, discrimination, public sector labor markets, the distribution of earnings and income, and unemployment.

891. Research in Applied Economic Statistics. 5 hours.

Prerequisite: STA 421/621, 422/622 or equivalent and permission of department.

Individual research in the application of statistical methods to economic problems.

894. Seminar in Economic History. 5 hours.

Prerequisite: Permission of department.

A seminar on selected topics in economic history. Special emphasis is placed on issues of current interest to economic historians. Included will be discussion of railroads, slavery, post-Civil War South, and the Great Depression.

895. Applied Economic Statistics. 5 hours.

Prerequisite: ECN 891.

Sample design, applications of sampling theory and significance testing in economics and business, elementary analysis of variance, and multiple regression and correlations.

896. Econometric Theory I. 5 hours.

Prerequisite: ECN 895 or equivalent.

A study of advanced econometric topics. Topics covered include large and small properties of conventional estimators, pre-test estimators, Stein-like estimators, multicollinearity, properties of estimated generalized least squares estimators, finite and infinite distributed lags. Applications of each topic are considered.

897. Econometric Theory II. 5 hours.

Prerequisite: ECN 896 or equivalent.

A study of advanced econometric topics. Topics covered include procedures for pooling time-series and cross-sectional data, models with qualitative and limited dependent variables, errors in variables models, simultaneous equations models. Application of each topic is considered.

898. Seminar in Applied Econometrics. 2-5 hours. (Max. 10 hours.)

Prerequisite: ECN 897 or permission of department.

Lectures on and discussions of selected topics in the field of econometrics. The focus is on the presentation and critical evaluation of published and unpublished research papers employing advanced econometric methods.

899. Economics Seminar. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

A research problem in the field of major concentration under personal supervision of major professor.

900D. Doctoral Research. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Research while enrolled for a doctoral degree under the direction of faculty members.

930D. Doctoral Dissertation. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

992. (RE) Urban Economics. 5 hours.

Economic analysis of growth and development of urban areas and discussion of public policy responses to urban problems.

Legal Studies (LS)

Sandra G. Gustavson, *Head*
(Brooks Hall)

650. Employment Law. 5 hours.

Legal implications of the employment relationship, with particular attention to discrimination based upon gender, disabilities, race, religion, and national origin.

660. International Legal Transactions for Business. 5 hours.

Prerequisite: LS 270.

Legal problems involving international trade, licensing and investment issues, dispute resolution and extraterritorial jurisdiction.

660A. International Legal Transactions for Business. 4 hours.

Prerequisite: LS 270.

Same as LS 660. This course is primarily for the MBA program.

711. (RE) Real Estate Law. 5 hours.

See RE 711.

711A. (RE) Real Estate Law. 4 hours.

Prerequisite: Permission of department.

Same as LS/RE 711. This course is primarily for the MBA program.

740. Introduction to Negotiation. 2 hours.

Basic concepts and tools of principle-based negotiations; lectures and simulated negotiations cases.

750. Conflict Resolution and Negotiation. 4 hours.

Principles of conflict resolution and negotiation theories including methods of reducing and preventing disputes as well as how to resolve conflicts. Role playing in simulated business environments will be a key element of the instruction.

776. Business Law II. 5 hours.

Prerequisite: LS 470 or permission of department. Business organization, property, bankruptcy, secured transactions and commercial paper.

776A. Business Law II. 4 hours.

Prerequisite: Permission of department. Same as LS 776. This course is primarily for the MBA program.

800. Legal and Social Environment of Business. 4 hours.

A foundation approach to the interrelationship of law, society and business. The study of established socio-legal concepts and the investigation of the development of the rule of law in society and society under the law. Particular emphasis is placed on cases and writings involving plural concepts or categories of study.

899. Directed Study in Legal Studies. 1-5 hours. (Max. 5 hours.)

Prerequisite: [LS 800 or undergraduate equivalent] and permission of department. Directed study of the legal environment of business.

Management (MAN)

Robert D. Gatewood, *Head*
Richard T. Watson, *Graduate*
Coordinator, 542-3706
(Brooks Hall)

667. Interviewing. 5 hours. Two double periods weekly.

A review of various theories of interpersonal communication and of pertinent research in the area of interviewing. Application of modern communication theory to interview situations. A consideration of the various types of interviews and the problems unique to each type with a variety of teaching techniques employed.

667A. Interviewing. 4 hours.

Prerequisite: Permission of department. Same as MAN 667. This course is primarily for the MBA program.

700M. Master's Research. 1-15 hours. (Max. 25 hours.)

Prerequisite: Permission of department. Research while enrolled for a master's degree under the direction of faculty members.

701. Executive Lecture Series. 1 hour. (Max. 2 hours.)

Prerequisite: MBA student or permission of department.

The Executive Lecture Series integrates the curriculum of the MBA program. Multiple industries and current business topics will be investigated.

710. Organization and Management of the Nonprofit Institution. 5 hours.

Prerequisite: MAN 351. History, legal basis, organization, management and activities of the nonprofit organization. Specific attention is given to board roles, resource development, and fund-raising as well as budgeting and strategic management in a nonprofit institution.

730M. Master's Thesis. 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of department.

740. Business and Society. 5 hours.

Prerequisite: MAN 351 or 362H. A study of the major facets of the American business system in their historical and social background; growth of corporate capitalism and industrial state and business institutions in their interaction with cultural and social environment.

749. Entrepreneurship/New Venture Formation. 5 hours.

Prerequisites: MAN 351, ACC 110, MKT 360, FIN 330.

This course will deal with the characteristics of the entrepreneur, a brief history of independent business, causes of success and failure of independent businesses, and the factors involved in starting up an independent business on a sound basis.

749A. Entrepreneurship/New Venture Formation. 4 hours.

Prerequisite: Permission of department. Same as MAN 749. This course is primarily for the MBA program.

756. Special Problems in Small Business. 5 hours.

Prerequisite: MAN 549/749, MAN 554. This course begins with a study of the environment of small businesses and the factors leading to success and/or failure, then moves into the particular approaches and tools utilized by the more successful businesses, and applies those tools to an operating concern. The final part of the course involves the student serving as a counselor to a small business that has requested assistance.

756A. Special Problems in Small Business. 4 hours.

Prerequisite: Permission of department. Same as MAN 756. This course is primarily for the MBA program.

792. Problems in Human Resource Utilization. 5 hours.

Prerequisite: MAN 351 or 362H.

A treatment of selected areas of current concern regarding the utilization of human resources.

801. Interpersonal Managerial Communication. 1-2 hours.

An examination of communication concepts and skills essential to effective managerial functioning. Topics include relationships between communication and motivation, negotiation, meeting management, creativity, and decision-making.

802. Production/Operations Management. 4 hours.

Prerequisite: MS 312 or equivalent.

Long-, medium-, and short-range operations planning in both service and manufacturing organizations is introduced. Productivity and quality measures are discussed. Techniques for priority planning, capacity planning, priority control are emphasized. Single unit models such as time-phased reorder point and periodic review, and lot sizing techniques such as economic order quantity are presented. In addition, aggregate inventory management techniques, e.g., cycle counting, ABC analysis and aggregate inventory investment curves are reviewed. Concepts of quality control are emphasized.

819. Minicomputer/Microcomputer Concepts in Business. 4 hours.

Prerequisite: MS 799.

An examination of small computer hardware and software applied in the business environment. Criteria for developing hardware and software specifications for selecting, testing, and employing small computer systems in business is provided.

820. Advanced Productivity Management. 4 hours.

Prerequisite: MAN 802 or equivalent.

This course provides coverage of four important areas in measuring and improving productivity: time study, predetermined time study, facility layout (computerized and manual), and methods improvement. Various productivity improvement programs are also examined. Current research topics including group technology, robotics and flexible manufacturing are also presented.

821. Production Planning and Control I. 4 hours.

Prerequisite: MAN 802 or equivalent.

This course covers inventory planning and control techniques. Short-term forecasting techniques are examined. Order point and time-phased models and various lot sizing techniques are discussed. Research topics, including distribution requirements planning, zero inventories, and spare parts management are also presented.

822. Production Planning and Control II. 4 hours.

Prerequisite: MAN 821 or equivalent.

This course provides a background in production planning, scheduling, and control concepts for dependent demand inventory items. Material requirements planning, capacity planning (long-, medium-, and short-range), and production activity control techniques are discussed in detail. Research topics including Just-in-time and Kanban are also presented.

823. Project Management. 4 hours.

Prerequisite: MAN 802 or equivalent.

Project management is an increasing area of concern and requires significantly different approaches to planning, organizing, and controlling activities. This course examines management techniques appropriate for this dynamic environment. Emphasis is on current research.

827. Quality Management. 4 hours.

Prerequisite: MAN 802 or equivalent.

Introduction to the management of the quality control function. Methods and application of quality control techniques commonly used in manufacturing and service organizations are presented. Quality costs, both direct and indirect, are discussed and approaches to measuring these costs are illustrated. Product liability and other current research topics are discussed.

828. Advanced Management of Service Operations. 4 hours.

Prerequisite: MAN 802 and/or permission of department.

In-depth analysis of the operations management role in the service sector. This course will focus on the concepts, skills, experience, and research issues necessary to improve the efficiency and effectiveness of U.S. service organizations. Quality of service delivery and productivity improvement issues are central themes.

829. Advanced Operations Management. 4 hours.

Prerequisite: MAN 820 and 822.

This course is an integrative case studies course. Cases related to both manufacturing and service industries are examined in detail by using techniques taught in prerequisite courses. Students present and write technical reports based on either an in-depth examination of one area of production or an examination of the interrelatedness of several functional areas.

839. Data Base Models in Business. 4 hours.

Prerequisite: ACC 530/730 or permission of department.

Examination of the use of data base models in business. This will include a discussion of various data structure techniques and their implementa-

tion in computer software. Projects involving the use of data structures applied to various business models will be required.

855. Managing Technological Innovation and Entrepreneurship. 4 hours.

This course focuses on the Innovation-Entrepreneurship process within business organizations. It provides a conceptual framework and multiple perspectives for viewing and assessing the process. It then provides techniques for better management of the process.

872. Data Administration. 4 hours.

Prerequisite: MS 799 and MAN 941.

The study of data administration concepts, including data management, database administration, the fundamentals of database management systems, data sharing and data dictionaries, data proliferation, and data integrity. Significant experience with mainframe DBMS is provided.

873. Building Effective Decision Support Systems. 4 hours.

Prerequisite: MAN 951 or permission of department.

The building of decision support systems is covered. Topics include the DSS concept, applications, organizational issues, hardware and software technology, developmental methodology, data-model-user relationships, implementation strategies, and evaluation procedures.

874. Managing Data Telecommunications and Networking. 4 hours.

Prerequisite: MAN 941 and MS 799.

The application of data communications and networking technology to support the organizational information systems mission. Communication architectures, modes and protocols are examined, along with current commercial offerings, equipment, software, network design principles and network management techniques.

876. Information Resource Management. 4 hours.

Prerequisite: MAN 951 or permission of department.

Emphasizes the tools, technologies and issues related to effectively and efficiently managing the information systems function. Managing the systems development process and operations center.

878. Development of Knowledge-Based Systems in Business. 4 hours.

Prerequisite: MAN 941 and MS 799.

Knowledge-based systems are a subset of artificial intelligence that deal with computer applications that replicate the decision making and problem solving skills of experts. Students learn how to identify, build, implement, and manage knowledge-based systems.

896. Seminar in Communication and Conflict. 5 hours.

A study of communication in situations of conflict. Communication problems in such areas as race relations, campus confrontation, and labor-management disputes will be analyzed.

896A. Seminar in Communication and Conflict. 4 hours.

Prerequisite: Permission of department.

Same as MAN 896. This course is primarily for the MBA program.

899. Directed Study in Management. 1-15 hours. (Max. 75 hours.)

Directed study in management will involve the preparation of research papers giving particular attention to specialized problems in any field of management.

900. Organizational Behavior. 4 hours.

Prerequisite: MAN 799F or equivalent.

Critical analyses of research and theory on complex organizational behavior. Theory building in both structure and process.

900D. Doctoral Research. 1-15 hours. (Max. 25 hours.)

Prerequisite: Permission of department.

Research while enrolled for a doctoral degree under the direction of faculty members.

904. Seminar in Management Assessment and Development. 5 hours.

A study of methods utilized by contemporary organizations to assess management potential, with an emphasis on the assessment center approach. Consideration of various approaches to the development process; examination of the interface among assessment, development, and management resource planning.

905. The Systems Approach. 4 hours.

The systems approach is primarily a way of thinking. It is a viewpoint that conceptualizes institutions as organized complexities, i.e., as organic (open) systems. The interdisciplinary character of the systems approach is exemplified by the development of general systems theory and cybernetics. This course relates the theories and findings of such interdisciplinary research to the study of human organizations.

910. Contemporary Management Problems. 1-15 hours. (Max. 75 hours.)

Prerequisite: Permission of department.

An intensive examination of a limited number of key problems in current management practice and applications — together with a study of research techniques and models for probing them more deeply.

926. Seminar in Materials Management. 5 hours. Prerequisite: MAN 822 or equivalent.

Business

This is the final materials management course and provides the student a thorough background in state-of-the-art techniques in materials management. Evaluation of available materials applications provides the student with a bridge between research concepts and methodology and industrial applications.

928. Manufacturing Simulation with GEMS. 5 hours.

Prerequisite: MAN 822 and MS 805 or equivalent. This course provides the student a background in using a generalized manufacturing simulation language (GEMS). Production environments including job shops and repetitive manufacturing are simulated to examine various scheduling and lot sizing rules.

930D. Doctoral Dissertation. 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of department.

941. Information Systems for Management. 2 hours.

An introduction to the information systems area including a discussion of decision support systems, transaction processing, office automation, end-user computing and data communications. A study of the development, implementation, evaluation and operation of information systems within the organization.

950. Design of Computerized Systems. 4 hours.

An introduction to the steps in the development of computer-based information systems. Feasibility studies, principles of analysis and design, tools and equipment used by designers, and factors associated with successful systems are considered.

952. International Business Strategy. 4 hours.

Focuses upon the formulation and implementation of integrated corporate strategy by multinational business organizations. Examines diverse aspects of the planning, direction and control of the many flows (products, technology, capital, personnel, and funds) linking the multinational company to its affiliates while operating within a plurality of political, economic, and sociocultural systems.

953. Business Policy Formulation and Administration. 4 hours.

Prerequisite: MBA standing and courses in finance, marketing, and production/operations management.

The final integrating course for the analytical application of business functions and administrative skills. To develop analytical skills and attitudes of top management in administering the company as a whole, and the interrelationships of all problems in the organization. Setting strategic objectives, analysis of changing environments,

developing corporate strategies, formulating business policies, and analysis of problems in management functions terms in addition to other analyses in the organization.

954. Small Business Management. 4 hours.

This course is intended to familiarize the student with the role of small business ownership in an economic environment. Special consideration will be given small business enterprise management in its effort for survival and growth, with consideration given to research and development, marketing, finance, and acquisitions and mergers.

956. Business and Competitive Strategy. 4 hours.

Prerequisite: MBA standing and permission of department.

This course covers the latest case materials and conceptual tools available for analysis of specific industry structures and industry evolution, and analyzes the effect that industry characteristics have on competitive strategies and decisions about strategic responses to competitive and industry change.

962. Research in Administration. 5 hours.

A study of research methodology, with major emphasis on the function and design of administrative research, techniques of data-gathering and data analysis as well as reporting and utilization of findings. There will be extensive use of existing business research reports.

970. Management Information Systems Research Seminar. 5 hours.

Prerequisite: MAN 941.

A wide variety of research is being conducted in the management information systems field. This course explores research frameworks, research concepts and methods, and exemplary research.

985. Personnel/Human Resource Management. 5 hours.

An in-depth study of the field of personnel/human resource management, and an overview of basic functions and processes. The course will address challenges faced by contemporary organizations, and will examine suggested approaches to dealing with them.

985A. Personnel/Human Resource Management. 4 hours.

Prerequisite: Permission of department.

Same as MAN 985. This course is primarily for the MBA program.

988. (PSY) Seminar in Staffing. 5 hours.

Prerequisite: MAN 985 or equivalent, or permission of department.

A concentrated investigation of the methods appropriate to the development and administration of the staffing process in contemporary organiza-

tions. The strategies and the statistics of the validation of personnel screening devices — personnel testing, interviewing and biographical information — are discussed in detail.

988A. Seminar in Staffing. 4 hours.

Prerequisite: Permission of department.

Same as MAN 988. This course is primarily for the MBA program.

989. Federal Regulation of Personnel/Human Resource Management. 5 hours.

A review of federal regulation of human resource management in areas such as equal employment, occupational safety and health, and employee retirement plans.

989A. Federal Regulation of Personnel/Human Resource Management. 4 hours.

Prerequisite: Permission of department.

Same as MAN 989. This course is primarily for the MBA program.

991. Strategic Management: Concepts and Issues. 5 hours. (Max. 10 hours.)

Prerequisite: MAN 953 or equivalent or permission of department.

Corequisite: MAN 953 or equivalent.

The field of strategic management is concerned with those issues that affect the basic character and success of any organization and with the functions and duties of those managers who are responsible for resolving such issues. This course will examine the major concepts, theories, and research challenges confronting this field today.

995. The Evolution of Strategic Management Theory. 3-5 hours. (Max. 10 hours.)

Prerequisite: Permission of department.

This seminar examines the evolution of strategic management theory through in-depth discussions of literature which builds the field's foundation. The benefits and limitations of key authors' contributions will be reviewed from a teaching, research, and management point of view.

997. Organizational Theory. 5 hours.

An elaboration of recent literature in organization theory and behavior with an emphasis on empiricism and methodology and their relationship with theory.

998. Methods for Personnel/Human Resource Decision Making. 4 hours.

Development of modeling and problem-solving skills for dealing with various personnel/human resource problems. Examination of alternative methods for formulating and analyzing problems in areas such as human resource planning and forecasting, recruiting, staffing, compensation and collective bargaining.

999. Business Policy. 5 hours.

Prerequisite: M.B.A. standing and at least one course from each of the major functional areas. A course dealing with corporate planning and the critically important role of top management in assuring its success; basic tools and methods in making planning decisions; conceptual and operational models of comprehensive corporate planning, including planning in major functional areas; process, development, and structure of such planning; translating objectives and strategies into current operational plans.

Management Sciences and Information Technology (MS)

Sandra G. Gustavson, *Head*
Andrew F. Seila, *Graduate Coordinator*
(MA, MAMS, PhD), 542-3586
(Brooks Hall)

700M. Master's Research. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Research while enrolled for a master's degree under the direction of faculty members.

730M. Master's Thesis. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

799. Introduction to Computing for Business. 2 hours.

Prerequisite: MAT 204.

This course is designed to introduce the student to computing, business software, data processing applications and information technology for microcomputers. The operating system, spreadsheets and macros (Lotus 1-2-3/Symphony) and a word processor are studied in depth and used to solve business-related problems.

800. Survey of Operations Research. 4 hours.

Prerequisite: MS 799 or equivalent and 810 or equivalent.

This course surveys the methods and techniques of operations research along with their application to managerial problems in business. The focus is at the modeling and solution interpretation levels. Topics include linear programming, integer programming, network programming, goal programming, network models, simulation, queueing theory, and others. Computer software is employed to illustrate the use of the models and techniques.

805. Simulation. 4 hours.

Prerequisite: MS 800 and computer programming language or permission of department.

Introduction to simulation as a tool for model analysis. Topics include random number and random variate generation, techniques for modeling complex systems, simulation program design, validation, implementation, and applications in business. Assignments will involve computer exercises.

808. Decision Support Systems and Models. 4 hours.

Prerequisite: MS 799 or equivalent and MS 800 and MAN 839.

Theory, methodology, and implementation of computer-based decision support models are presented. Computer-based decision models involve an integration of quantitative tools, financial concepts, accounting, and computing. Emphasis is on the structure and development of such models. The design, development and use of computer-based decision support systems for managerial decision making is examined. Models and implementation of real-world systems will also be discussed.

810. Statistical Methods in Business I. 4 hours.

Three hours lecture and one hour lab.

Prerequisite: MAT 204.

Descriptive statistical measures, basic probability notions, estimation and hypothesis testing for the mean, proportion and variance in a population, and simple linear regression models. Emphasis is on applications in a business environment. Computer software packages are used for data analysis.

811. Statistical Methods in Business II. 4 hours.

Prerequisite: MS 810 or equivalent.

Statistical methods in business emphasizing regression and forecasting. Topics include fitting and diagnostic checking of multiple regression models; use of multiple regression models for forecasting; selection and fitting of time series models; and use of time series models for forecasting.

812. Applied Statistical Methods I. 4 hours.

Prerequisite: MS 810 or equivalent.

Statistical analysis as applied to business. Statistical inferences about population means and variances; inferences from categorical data; nonparametric methods; regression analysis. Computer software packages are used for data analysis.

813. Applied Statistical Methods II. 4 hours.

Prerequisite: MS 812 or equivalent.

Multiple regression; analysis of variance; applications to problems in business. Computer software packages are used for data analysis.

815. Linear Programming. 4 hours.

Prerequisite: MAT 256 and MS 800 or equivalent. Models, theory, and algorithms that relate to linear programming are presented. Business applications in various disciplines are discussed. Emphasis is on algorithmic procedures such as the primal and dual simplex methods, product form of the inverse, upper bounding and the simplex method for networks.

816. Multiple Criteria Optimization. 4 hours.

Prerequisite: MS 800.

Techniques of multiple criteria optimization and their use in solving large-scale linear, integer, and nonlinear mathematical programming problems that possess conflicting objectives. Efficient points, nondominated criterion vectors, vector-maximum principles, and the development of interactive solution procedures in a decision support systems environment are discussed.

817. Stochastic Models. 4 hours.

Prerequisite: MAT/STA 471/671 or equivalent.

Introductory treatment of stochastic models in management science; Markov chains; birth and death processes; queueing and inventory models; reliability and maintenance models.

847. Artificial Intelligence/Expert Systems in Business. 4 hours.

Prerequisite: MS 799 and 800 and 808.

This course is designed to introduce the student to the role of artificial intelligence and expert systems as applied to problems in business. The course contains an overview of artificial intelligence and then focuses on the design, testing, validation, and use of expert systems in business applications. Relevant topics such as knowledge-acquisition will also be discussed. Computer-based projects and the study of existing systems will be employed to reinforce concepts.

899. Directed Study in Management Sciences. 1-15 hours. (Max. 15 hours.)

Designed to permit the student to perform independent and directed study and research. To offer a student the opportunity to study and research subject matter in management sciences not offered as complete subject matter in another course.

900D. Doctoral Research. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Research while enrolled for a doctoral degree under the direction of faculty members.

915. Decision Support and Artificial Intelligence Topics in Business. 4 hours.

Prerequisite: MS 808 and 816 and 847 and 926.

Advanced topics in decision support and artificial intelligence from the management sciences perspective. These may include multicriteria decision support systems; network applications, models

and methods; model generation; simulation; neural networks and artificial intelligence; and problem solving on novel computer architectures.

926. Networks Models in Business. 4 hours.

Prerequisite: MS 815 or MAT 477/677.

Models, theory and algorithms for solving network programming problems are presented. Graph theoretic concepts are covered. Algorithmic procedures such as that of finding the shortest path through a directed graph and the primal simplex method on a graph are discussed. Implementation issues such as list structures for basis representation, basis types, and pricing rules are emphasized along with modeling and computer implementation. Real-world network-based decision support systems are also discussed.

930D. Doctoral Dissertation. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Marketing (MKT)

George M. Zinkhan, *Head*
Srinivas K. Reddy, *Graduate Coordinator*
(PhD), 542-3759

Malcolm A. McNiven, *Graduate*
Coordinator (MMR), 542-3540
(Brooks Hall)

700M. Master's Research. 1-15 hours. (Max. 30 hours.)

Prerequisite: Permission of department.

Research while enrolled for a master's degree under the direction of faculty members.

710. Masters Internship. 1-5 hours. (Max. 10 hours.)

Prerequisite: Permission of department and enrollment in the MMR program.

A professional internship during which students gain a practical, working knowledge of the field and refine knowledge, skills and attitudes developed in the classroom. Students work directly with cooperating manufacturers, agencies and research firms and are assigned responsibility for various products and or research projects.

751. Marketing Management. 4 hours.

Prerequisite: Permission of department.

Process by which customer needs determine the structure of the marketing organization, the choice of market segments, the positioning of product/service offerings, and the efforts to deliver both the promotional message and the offering to the customer.

751A. Marketing Management. 2 hours.

Prerequisite: Permission of department.

Same as MKT 751. This course is primarily for the MBA program.

759. Logistics Management. 5 hours.

Prerequisite: MKT 360.

Logistics activities including movement and storage of inventories and the dynamic forces affecting logistics decisions will be reviewed and discussed. Concepts, methods and analytical techniques used by logistics managers to gain and retain competitive advantages will be examined. Topics include traffic management, inventory control, warehousing, and freight transportation.

761. Qualitative Research in Marketing. 2 hours.

Prerequisite: Permission of department

Qualitative approaches to conducting marketing research. Topics include: paradigmatic assumptions; research design issues; various types of qualitative inquiry, with the primary focus on interviewing and observational methods; issues related to collecting and analyzing data; reporting the findings; and working with clients.

763. Creative Problem Solving. 1-5 hours. (Max. 5 hours.)

Prerequisite: Permission of department.

Focuses on understanding the creative process, stimulating creative thinking in problem solving situations, and applying problem solving techniques to marketing. Introduces tools and techniques for developing skills in idea generation and creative problem solving.

764. Marketing Research for Direction. 4 hours.

Prerequisite: Permission of department.

The course is designed to instruct students on how to identify and use relevant secondary and syndicated services for environmental scanning or strategic review, and to improve the effectiveness of the oral and written presentation of the material collected.

765. Marketing Research for Decisions I. 4 hours.

Prerequisite: Permission of department.

A study of the application of marketing techniques. Focuses on the process of developing a product from idea generation and screening through product testing and copy/positioning evaluation.

766. Marketing Research for Decisions II. 4 hours.

Prerequisite: Permission of department.

Continuation of MKT 765. Focuses on evaluating the market potential of new product systems, i.e., product plus price, package and positioning. Also covers pre-test market evaluation systems, test marketing, tracking studies, research for claim support and the impact of UPC and scanner technology.

769. Strategic Logistics. 5 hours.

Prerequisite: MKT 360 and 559/759.

Comprehensive analysis of physical distribution systems. Case format will be used to apply logistics principles presented in MKT 559/759 and introduce advanced methods and techniques. System component parts: analytical tools used in planning, implementing, and controlling the system; and coordination with other functional areas will be emphasized.

770. Brand Management. 4 hours.

Prerequisite: Permission of department.

Provides overview of brand management activities necessary to meet rather than set goals for the product. Focuses on the place of brand management within the corporation, the effects of volume and profit commitments on decision making, and the need for internal coordination within the marketing division and the firm.

772. (JRL) Advertising Management. 4 hours.

Prerequisite: Permission of department.

Provides management perspective on planning, developing and evaluating advertising programs. Focus moves from agency-client relationships and the opportunities for advertising for a product or service to analyzing elements of advertising: market, messages, production and measurement.

773. (JRL) Media Planning. 4 hours.

Prerequisite: Permission of department.

Acquaints students with the responsibilities, practices and tools of the media planner so as to enable future managers to be conversant with media planners and to understand and evaluate media plans.

780. Marketing Professional Services. 4 hours.

Prerequisite: Permission of department.

Services businesses and their marketing challenges.

790. Marketing Research Design and Execution. 2 hours.

Prerequisite: MKT 760 or permission of department.

Overview of marketing research techniques. Emphasizes the design and execution of custom research projects.

791. Marketing Data Collection Procedures. 4 hours.

Prerequisite: MKT 762 or permission of department.

Special data collection procedures used in marketing research are considered, particularly questionnaire design and qualitative interviews.

844. Business-to-Business Marketing. 4 hours.

Prerequisite: Approval of MBA director.

Marketing of products and services to businesses, government bodies, and other institutions for use in business operations or resale. Emphasis on the growing importance of technology, changing patterns of final demand, increasing market complexity, and global competition. Comparison of consumer marketing and business-to-business marketing.

845. Behavioral Theory and Marketing. 4 hours.

Study of the role of behavioral theories and models in marketing and public policy decision making. Emphasis is on relevant concepts from psychology, sociology, economics, demography, and anthropology as applied to the decision areas of products, prices, promotion, and distribution.

860. Marketing Strategy. 4 hours.

Strategic marketing decisions and the development of a cohesive marketing strategy that integrates the elements of the marketing mix within the competitive and market environment faced by the firm.

862. Personal Selling. 4 hours.

Prerequisite: MKT 360 or 760 or equivalent or College of Business Administration requirements for foundation courses (MBA).

Provides opportunity to examine the practice of salesmanship and to learn generally accepted sales techniques of trade and industrial salespeople. Emphasizes the sales presentation skills of pre-approach, opening, probing, handling objections, and closing. Research projects will culminate with an actual videotaped sales presentation.

866. New Product Development. 4 hours.

Prerequisite: Permission of department.

Techniques to develop new products and services and successful marketing strategies.

899. Directed Study in Marketing Policy. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Students design and complete research projects or management audits in the area of marketing management under the supervision of a faculty member. Special assignments in simulations and business games may also be undertaken.

900D. Doctoral Research. 1-15 hours. (Max. 30 hours.)

Prerequisite: Permission of department.

Research while enrolled for a doctoral degree under the direction of faculty members.

921. Sales Management. 4 hours.

Study of field sales management with emphasis on the role of personal selling in the marketing mix, building an effective organization, and controlling and evaluating the sales force.

923. International Marketing. 4 hours.

An analysis of planning, organization, and control aspects of multinational marketing operations and the effects of comparative economies, societies, and cultures on marketing opportunities.

930D. Doctoral Dissertation. 1-15 hours. (Max. 60 hours.)

Prerequisite: Permission of department.

950. Business Ethics. 2 hours.

An analysis of the changing character of the relationships of business management to social groups, including the development of honesty and integrity as fundamental values of managerial development.

961. Marketing Theory. 4 hours.

Essential elements of philosophy of science and their use in marketing are considered. Emphasizes the structure of theoretical explanation and the interaction between marketing theory and practice.

963. Measuring Marketing Effectiveness. 4 hours.

Prerequisite: MKT 961, MS 799 or permission of department.

Analysis of marketing data emphasized. Covers the use of models, regression analysis, and experimental design in marketing research. Emphasizes analysis of historical marketing data and the design and analysis of field experiments in marketing.

965. Marketing Research Methodology. 4 hours.

Prerequisite: MKT 760 or three undergraduate courses in marketing and permission of department.

Examines the philosophy, concepts, and methods of marketing research design. Covers experimental methods, sampling procedures, measurement techniques, and other methodological problems in marketing research. The student is introduced to data reduction and statistical modeling programs.

967. Measurement Issues in Marketing. 5 hours.

Prerequisite: PhD standing or permission of department.

Seminar in proper design and execution of a research project in marketing. Both descriptive and experimental research designs are discussed in terms of reducing measurement error caused by improper conceptual definitions, sampling procedures, data collection methods, and scale construction.

968. Marketing Models. 5 hours.

Prerequisite: MS 812 and 813.

An overview of quantitative models used to investigate consumer behavior and attitudes, marketing strategies, and market structures.

974. Advances in Causal Modeling. 5 hours.

Prerequisite: MKT 965 or permission of department.

Statistical techniques known collectively as structural equation modeling, causal modeling, or analysis of covariance structures.

990. Seminar in Marketing Management. 5 hours.

Prerequisite: Permission of department.

Seminar emphasizing current research in the Marketing Management area, including such content topics as consumer and industrial product development and management, advertising and sales promotion management, pricing, distribution and retail issues, sales management and personal selling as well as the philosophies and methods relevant to applied managerial research.

997. Seminar in Buyer Behavior. 5 hours.

Prerequisite: PhD standing or permission of department.

Theories, concepts, and research in Marketing, Psychology, Demography, Sociology, Anthropology, and other behavioral disciplines and their application to understanding individuals as consumers. Consumer decision making, its determinants, and implications for marketers will be emphasized.

Real Estate (RE)

Sandra G. Gustavson, *Head*
James B. Kau, *Graduate Coordinator*,
542-9110
(Brooks Hall)

700M. Master's Research. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Research while enrolled for a master's degree under the direction of faculty members.

711. (LS) Real Estate Law. 5 hours.

Real estate law is a study of how the law affects real property. Topics covered include property ownership and interests, restrictions on such interests, real estate sales documents, landlord-tenant agreements, conveyances, and broker-owner relationships. Also discussed are the licensing requirements for brokers and sales people.

711A. (LS) Real Estate Law. 4 hours.

Prerequisite: Permission of department.

Same as RE/LS 711. This course is primarily for the MBA program.

715. (LAR) Land Development Studio. 5 hours.

Prerequisite: Permission of department.

Directed study in the process of land development.

730M. Master's Thesis. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

893. Corporate Real Estate Asset Management. 4 hours.

A study of planning, choosing and implementing programs to provide and allocate real property to meet corporate objectives. An intense case course in corporate real estate decision making.

899. Directed Study. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

900D. Doctoral Research. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Research while enrolled for a doctoral degree under the direction of faculty members.

930D. Doctoral Dissertation. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

992. (ECN) Urban Economics. 5 hours.

See ECN 992.

994. Advanced Valuation Theories. 4 hours.

A review of the historical development and present trends in appraisal theory. The course emphasizes the theoretical problems in applying valuation techniques.

995. Real Estate Finance. 4 hours.

Prerequisite: Permission of department.

An analysis of the role of financing in real estate decisions, including such topics as mortgage risk, financial leverage, mortgage techniques and secondary mortgage markets.

996. Research Seminar. 2-5 hours. (Max. 20 hours.)

Topics in real estate research for doctoral students. Discussion of current research, proposal writing, and research methods.

Risk Management and Insurance (INS)

Sandra G. Gustavson, *Head*
Robert E. Hoyt, *Graduate Coordinator*,
542-4290
(Brooks Hall)

702A. Casualty Insurance Problems. 4 hours.

Prerequisite: Permission of department.

Advanced study of all types of casualty insurance; automobile, professional and general liability, multi-line coverage, and how these relate to the risk-bearing function; legal and technical aspects

of selection of risk, contract underwriting and loss adjustment. This course is primarily for the MBA program.

703A. Property Insurance Problems. 4 hours.

Prerequisite: Permission of department.

Practical application of property insurance policies, including multiple-lines, to specific riskbearing problems; survey and insurance counseling to complex problems; legal and technical aspects of selection of risk, contract underwriting, and loss adjustment. This course is primarily for the MBA program.

707. Insurance Agency Management. 5 hours.

Prerequisite: INS 381 and 485.

The economic functions performed by the general agency and its position in the insurance distribution system. Emphasis is given to the management aspects of agency operations from the sales, administrative and financial viewpoint.

707A. Insurance Agency Management. 4 hours.

Prerequisite: Permission of department.

Same as INS 707. This course is primarily for the MBA program.

711. Pension Planning and Employee Benefits. 5 hours.

Private approaches to the problems of employee financial security. Components of employee benefit programs. Employee attitudes toward benefits. Theory of group programs. Group life and health insurance. Basic features of pension plans. Funding, vesting, tax, actuarial and communication problems. Profit sharing. Plans for self-employed. Effect of ERISA. Cases and problems.

711A. Pension Planning and Employee Benefits. 4 hours.

Prerequisite: Permission of department.

Same as INS 711. This course is primarily for the MBA program.

713. Business Risk Management. 5 hours.

Prerequisite: INS 485 and 511/711 — 711A.

An analysis of the risks faced by the business enterprise and the study of the various methods of handling these risks including loss prevention, risk retention, self-insurance, and corporate insurance programs. Extensive use of case method and logical decision making.

713A. Business Risk Management. 4 hours.

Prerequisite: INS 485 and 511/711 — 711A.

Same as INS 713. This course is primarily for the MBA program.

730M. Master's Thesis. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

899. Directed Study in Risk Management. 1-15 hours. (Max. 15 hours.)

A field study project in risk analysis and risk management and emphasis on the analysis of both pure and speculative risk in the enterprise and how risk affects business policy and the discharge of management function.

900D. Doctoral Research. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

930D. Doctoral Dissertation. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

945. Property and Liability Insurance Seminar. 5 hours. (Max. 10 hours.)

Prerequisite: Permission of department.
Selected topics in property and liability insurance. Special emphasis on academic research. Topics include loss reserves, adverse selection, insurer solvency, underwriting cycles, capital budgeting and property and liability insurance, property and liability rate regulation, and liability insurance issues.

955. Life and Health Insurance Seminar. 5 hours. (Max. 10 hours.)

Prerequisite: Permission of department.
Selected topics in life and health insurance. Special emphasis on academic research. Topics include pensions, group health, moral hazard, demand for life insurance, industry structure and productivity, life insurance products and costs, disability insurance, and life insurer asset/liability management.

965. Risk Theory Seminar. 5 hours.

Prerequisite: Permission of department.
Examination of risk theory and its applications including basic concepts of actuarial mathematics. Importance of utility theory and ruin theory to modeling of the insurance process is investigated. Application of probability and statistical techniques to the analysis of pure losses and loss distributions.

988. Risk Management Seminar. 4 hours.

Prerequisite: Admission to a graduate program in the College of Business Administration or permission of department.

The concept of risk management. How attitudes toward risk influence business decisions. Risk management as a functional area of business. Methods of handling risk, including assumption, transfer, commercial insurance, loss control, and avoidance. Self-insurance and the captive insurer movement. Pure vs. speculative risk. International risk management problems. Cases and problems.

992C. Employee Benefits. 4 hours.

A study of employee and/or employer oriented fringe benefit plans to include group life, group health, pension and retirement programs, private and public. Relationship of insurance to non-insurance benefits.

Cellular Biology (CB)

Raymond T. Damian, *Head*
Charles H. Keith, *Graduate Coordinator*,
542-3310
(*Biological Sciences Building*)

The Department of Cellular Biology offers MS and PhD degrees. Requirements for the MS include 40 hours of course work, satisfactory performance on written and oral examinations, and an acceptable thesis embodying original research in a specialized area. Requirements for the PhD include satisfactory performance on written and oral examinations, fulfillment of a research skills requirement with a foreign language, statistics, or computer science, and an acceptable dissertation. Course work is determined by the advisory committee to suit each student's program. Incoming students are required to take CB 613 – Introduction to Research in Cellular Biology, offered in the Fall quarter only.

The department's research strengths are in cell biology, integrative physiology, and molecular cell parasitology. Facilities for graduate training include campus laboratories fully equipped with computers and modern instrumentation for cell sorting and image analysis, electron and confocal microscopy, molecular biology, radioisotope studies, and animal rooms. Available off-campus facilities include the Yerkes Primate Center in Atlanta and its field station in Lawrenceville, Georgia. The department also has strong working relationships with the Centers for Disease Control in Atlanta and Chamblee, Georgia and with several laboratories in Brazil.

Contact the Graduate Coordinator, Dr. Charles H. Keith, if you have questions regarding the graduate program.

600-600L. Cell Structure and Organization. 5 hours. Three lectures and two 3-hour lab periods. Prerequisite: CB 300-300L or equivalent.

A study of the tissues and their organization into organs and organ systems in animals.

610. (MIB) Immunology. 5 hours.
See MIB 610.

613. Introduction to Research in Cellular Biology. 2 hours.
Prerequisite: Student must be enrolled in the cellular biology graduate program.

A course designed to acquaint the incoming graduate student with various areas of research in cellular biology, special facilities at field research sites; and use of isotopic, computer, library, and other auxiliary research facilities.

634. Biology of Aging. 5 hours.
Prerequisite: GNT 400/600.

Biological processes accompanying aging in human and other organisms. Emphasis on physiological decline; theoretical explanations; attempts to prolong life; and the utility and limitations of model systems used to analyze human aging.

650-650L. Medical Parasitology. 5 hours. Three lectures and two double lab periods.
Prerequisite: Permission of department.

A comparative study of internal parasites of man and the lower animals.

660-660L. Biology of Protists. 5 hours.
Three lectures and two double lab periods.

A general and comparative study of unicellular eukaryotes (protozoa, algae, and zoospore fungi) which are collectively known as protists. Topics include protistan structure and function, evolutionary relationships among protists, life histories, and symbiotic origin of organelles.

672. Adaptational Physiology. 3 hours.
Prerequisite: Permission of department.

The environmental physiology of animals; osmotic and ionic regulation; temperature regulation; gas exchange.

673. Endocrinology. 5 hours.
Prerequisite: CB 300-300L or 370-370L or permission of department.

A general and comparative study of vertebrate endocrinology and the principles of chemical integration, emphasizing the physiology and evolution of regulatory mechanisms and the molecular bases of hormone action.

700M. Master's Research. 1-15 hours. (Max. 30 hours.)

Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

701. (BIO) Theory of Electron Microscopy. 3 hours.
See BIO 701.

703. (BIO/VAR) Electron Microscopy Laboratory. 2 hours.
See BIO 703.

704. (BIO/VAR) Scanning and Analytical Electron Microscopy. 3 hours.
See BIO 704.

705. (BIO/VAR) Scanning Electron Microscopy Laboratory. 2 hours.
See BIO 705.

730M. Master's Thesis. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

805-805L. Techniques in Modern Microscopy. 5 hours.

Three lectures and two 2-hour lab periods.
Prerequisite: Permission of department.

Theory and practical aspects of modern microscopical techniques including: brightfield, phase, DIC, fluorescence, confocal, scanning tunneling, and scanning and transmission electron microscopy. Other topics include X-ray microanalysis photomicrography, and image analysis and processing.

815. Techniques in Cellular Immunology. 5 hours.

Prerequisite: Permission of department.
Laboratory approaches to problems in cellular immunology are emphasized. Technical skills will be developed in the following: cell structure, hybridoma production, proliferation responses, RIA/ELISA, cell cloning, plaque assays, *in vitro* antibody responses, lymphokine production and measurement, cell separation techniques and limiting dilution analysis.

840. Advanced Cell Biology. 5 hours.

Prerequisite: BCH/BIO 310 or BIO/GN 320 and BIO 340 or equivalent or permission of department.

A study of the structure and function of living cells. Biological questions, molecular mechanisms, and experimental approaches will be addressed.

845. Techniques in Cellular Biology. 5 hours.
Prerequisite: Permission of department.

Laboratory approaches to problems in cellular biology are emphasized. Technical skills and analytic techniques will be developed in the following areas: cell culture and growth analysis; ultracentrifugation; immunofluorescence microscopy; protein separation by affinity and gel filtration chromatography; ligand-receptor binding on intact cells.

849. Seminar in Cell Biology. 1 hour. (Max. 6 hours.)

Prerequisite: Permission of department.

Weekly meetings devoted to discussion of current research in cell biology. A different main theme will be selected for each quarter offered to give emphasis to areas showing especially significant advances.

850. Immunology and Cellular Biology of Parasites I. 5 hours.

Prerequisite: MIB 410/610 and CB 450/650-450L/650L or their equivalents or permission of department.

Major protozoan and helminth parasites with particular emphasis on selected parasites of humans. The host-parasite interaction is examined from immunological, biochemical, cell biological and molecular biological perspectives. Modern approaches to prevention and treatment of parasitism.

851. Immunology and Cellular Biology of Parasites II. 5 hours.

Prerequisite: CB 850 and permission of department. A continuation of CB 850.

852. (BCH/MIB) Topics in Molecular Genetics and Biochemistry of Parasites. 5 hours.

Prerequisite: BCH 802 and GN 892 and permission of department.

Unique aspects of parasite cellular biochemistry and molecular genetics with potential for rational drug design will be discussed. Topics including DNA replication, RNA editing, nucleic acid salvage pathways, polyamine metabolism and glycosylphosphatidylinositol (GPI) anchors.

854. (PAR) Parasitic Protozoa. 5 hours.

See PAR 854.

856. (PAR/PS) Seminar in Parasitology. 1 hour. (Max. 6 hours.) (A/S grading.)

Prerequisite: Permission of department.

Weekly meeting devoted to discussions of parasitological subjects.

859. Seminar in Modern Parasitology. 5 hours.

Prerequisite: Permission of department.

Recent developments in the cellular biology and molecular genetics of parasites. Critical evaluation of experimental design will be emphasized.

870. Advanced Physiology. 5 hours.

Prerequisite: Permission of department.

An intensive study, through reading, discussion and laboratory investigation, of special topics in physiology.

873. Advanced Cell and Molecular Endocrinology. 3 hours. (Max. 12 hours.)

Prerequisite: CB 473/673 or equivalent or permission of department.

An advanced study of modern vertebrate endocrinology, emphasizing special topics in research of physiological regulatory mechanisms and the molecular bases for hormone actions.

892. Cellular Biology Research Techniques.

2-4 hours. (Max. 12 hours.) Three 4-hour lab periods.

Prerequisite: Permission of department.

Corequisite: CB 613.

Laboratory research techniques in cellular biology.

900. Problems in Cellular Biology. 1-15 hours. (Max. 75 hours.)

This course allows students to work intensively on approved problems in certain fields of cellular biology.

900D. Doctoral Research. 1-15 hours. (Max. 30 hours.)

Prerequisite: Permission of department.

Research while enrolled for a doctoral degree under the direction of faculty members.

930D. Doctoral Dissertation. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Chemistry (CHM)

Charles R. Kutal, *Head*

Robert A. Scott, *Graduate Advisor,*
542-1936

Michael A. Duncan, *Graduate*
Coordinator, 542-1936
(*Chemistry Building*)

The Department of Chemistry offers courses of study and research leading to the Master of Science and Doctor of Philosophy degrees. The candidate for the Master of Science degree must complete a program of study approved by his/her major professor, the graduate coordinator, and the dean of the Graduate School. The student must complete and defend a thesis based upon his/her research. This research should involve contributions of a publishable quality. There is no foreign language reading requirement for the MS degree in chemistry.

The PhD applicant chooses a major concentration in analytical, inorganic, organic, or physical chemistry. A program of study including course work in the major field and the student's research objectives must be

completed and approved by the major professor, the graduate coordinator, and the dean of the Graduate School. A Research Skills Requirement (satisfied by a reading knowledge of German, French or Russian, or completion of approved alternative courses) is required of all PhD students. After satisfactorily completing his/her prescribed course of study, the research skills requirement, and a comprehensive written and oral examination in his/her major field, the student is officially admitted to candidacy for the PhD degree. This degree is awarded for proficiency and scholarship in research and a thorough acquaintance with a specific field of knowledge which the candidate demonstrates by the presentation and defense of a dissertation based upon independent work which contributes significantly to knowledge in the student's field.

Unless otherwise specified, all laboratory periods are three hours.

617. Principles of Molecular Spectroscopy. 3 hours. (Max. 12 hours.)

Prerequisite: CHM 491C/691C or equivalent. The general theory of specific areas of spectroscopy such as ultraviolet, infrared, NMR, ESR or mass spectrometry.

618. Methods of Molecular Spectroscopy. 2 hours. (Max. 8 hours.)

Prerequisite: CHM 491C/691C or equivalent. Complements CHM 417/617 by studying the instrumentation and operation of specific instruments.

626, 627. Intermediate Inorganic Chemistry. 3 hours each.

Prerequisite: CHM 491C/691C or equivalent. A two-quarter sequence designed as an introduction to modern theories of bonding and structure, reaction mechanisms and synthetic methods in inorganic systems.

630. Intermediate Organic Chemistry: Structure. 3 hours.

Prerequisite: CHM 342 and 491C/691C or permission of department.

A course describing molecular structures of organic molecules in terms of molecular orbital theory, stereochemistry and conformational analysis.

631. Intermediate Organic Chemistry: Mechanism. 3 hours.

Prerequisite: CHM 342 and 491C/691C or permission of department.

A course describing the concepts and techniques used in the determination of reaction mechanisms. Current theories of mechanisms of important organic chemical transformations are presented.

632. Intermediate Organic Chemistry: Synthesis. 3 hours.

Prerequisite: CHM 342 and 491C/691C or permission of department.

A study of established organic synthetic procedures as applied in selected important reactions. The course describes synthetic strategies and retrosynthetic analysis.

637. Advanced Organic Synthesis. 3 hours.

Prerequisite: CHM 342.

Practical introduction to ultraviolet, infrared, H- and C-nuclear magnetic resonance, and mass spectroscopy as tools for characterization of the structure of organic molecules, with particular emphasis on identifying structures from representative sets of spectra.

644. Heterocycle Chemistry. 3 hours.

Prerequisite or corequisite: CHM 342.

A study of the structures, spectra, reactions and synthesis of heterocyclic compounds.

691ABC. Physical Chemistry. 4 hours each.

Prerequisite: CHM 139 or 280, 341, PCS 229 or 239, MAT 255.

A three-quarter sequence in the fundamental principles of physical chemistry. Kinetic molecular theory, thermodynamics, equilibria, electrochemistry, reaction kinetics, quantum mechanics and molecular spectroscopy. Intended for students who will enter chemistry as a profession or will do advanced study in chemistry.

700M. Master's Research. 1-15 hours. (Max. 75 hours.)

Prerequisite: Permission of department.

Research while enrolled for a master's degree under the direction of faculty members.

730M. Master's Thesis. 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of department.

780. Instrumental Methods of Analysis. 3 hours.

Prerequisite: CHM 341, 381, 496C/696C.

The use of electrochemical (ion selective electrodes, polarography and coulometry), radiochemical, thermal (thermogravimetry, scanning calorimetry) and kinetic methods of analysis.

781. Chemical Instrumentation. 4 hours.

Prerequisite: PCS 128 or 138.

A systematic study of electronic measurements including the design and construction of instruments to solve practical chemical problems.

781L. Chemical Instrumentation Laboratory. 2 hours. Two lab periods.

Prerequisite or corequisite: CHM 581/781.

785. Modern Analytical Spectroscopy. 3 hours. Fundamental theory, instrumental principles, and current applications associated with modern optical analytical spectroscopy. Both atomic and molecular spectroscopic methods are covered, including atomic absorption and emission, rotational, IR, Raman, electronic, and photoluminescence spectroscopy. Modern methods of analytical Fourier transform spectroscopy as applied to optical spectroscopy will also be covered.

811. Chemical Seminar. 1-2 hours. (Max. 18 hours.) (A/S grading.)

Prerequisite: A bachelor's degree with a major in chemistry.

A study by the seminar method of some phase of current research in chemistry.

821A. Modern Inorganic Theory. 3 hours.

Prerequisite: 20 hours of chemistry with laboratory.

The first of a three-quarter sequence dealing with the theoretical aspects of modern inorganic chemistry. Emphasis will be placed upon current theories of chemical bonding and the use of mathematical models in the interpretation and treatment of experimental data.

821B. Modern Inorganic Theory. 3 hours.

Prerequisite: CHM 821A.

821C. Modern Inorganic Theory. 3 hours.

Prerequisite: CHM 821B.

822-822L. (BCH) Physical Methods in Inorganic and Bioinorganic Chemistry. 5 hours.

Four lectures and one 3-hour lab period.

Prerequisite: CHM 821A or permission of department.

Physical techniques in inorganic and bioinorganic chemical research including vibrational, (magnetic) circular dichroism, electron paramagnetic resonance, nuclear magnetic resonance, x-ray absorption, and Mossbauer spectroscopies, and magnetochemistry.

823. (BCH) Bioinorganic Chemistry. 3 hours.

Prerequisite: CHM 821B or BCH 801 or permission of department.

Biological processes and molecules, mainly proteins and nucleic acids, which incorporate metal ions. Topics include metal binding to biopolymers, the roles of metal ions in biological processes such as electron transfer, atom or group transfer, and the use of metal complexes as therapeutic agents.

824. Current Topics in Inorganic Chemistry. 3 hours. (Max. 21 hours.)

Prerequisite: CHM 821C or equivalent.

An in-depth treatment of selected specialized topics of current interest to inorganic chemists. Topics will vary from quarter to quarter depending upon the instructor and the student demand.

831A. Modern Organic Theory. 3 hours.

Prerequisite: CHM 342 or equivalent.

Selected organic reactions will be discussed in modern electronic terms. Important mechanisms of reactions will be presented and modern theories will be introduced.

831B. Modern Organic Theory. 3 hours.

Prerequisite: CHM 831A or equivalent.

This course is a continuation of CHM 831A. Organic reactions, mechanisms, and modern theories of organic chemistry will be presented.

831C. Modern Organic Theory. 3 hours.

Prerequisite: CHM 831B or equivalent.

This course will consist of lectures and discussions of various topics of modern organic chemistry conducted at an advanced and scholarly level.

834. Current Topics in Organic Chemistry. 3 hours. (Max. 15 hours.)

Prerequisite: CHM 831C or permission of department.

Three hours lecture and discussion in current subjects of interest in organic chemistry, or equivalent library and report work. The course will be designed to help keep the student abreast of current developments in a rapidly expanding, ever-changing discipline.

849. Introduction to Research. 5 hours. One consultation and four library or lab periods.

Prerequisite: CHM 427/627 or 441/641 or 491C/691C or 580/780.

Introduction to measurements, syntheses, and design of experiments applicable to the solution of current research problems in various chemical fields.

881A. Advanced Analytical Chemistry. 3 hours.

Prerequisite: CHM 491C/691C.

The course will offer a rigorous treatment of selected principles of analytical chemistry such as homogeneous and heterogeneous equilibria, separation techniques, use of organic reagents for precipitation and extraction of metals.

881B. Advanced Analytical Chemistry. 3 hours.

Prerequisite: CHM 881A.

881C. Advanced Analytical Chemistry. 3 hours.

Prerequisite: CHM 881B.

884. Current Topics in Analytical Chemistry. 3 hours. (Max. 15 hours.)

Prerequisite: CHM 881AB.

Three hours lecture and discussion in current subjects of interest in analytical chemistry or equivalent library and report work. The course will

be designed to help keep the student abreast of current developments in a rapidly expanding and changing discipline.

892. Chemical Thermodynamics. 3 hours.
Prerequisite: CHM 491C/691C or equivalent.
Classical and statistical thermodynamics as applied to chemical reactions, phase equilibria, and solutions.

894. Chemical Kinetics. 3 hours.
Prerequisite: CHM 491C/691C or equivalent.
Mechanisms and energetics of chemical reactions in the gas phase and in solution. Heterogeneous reactions, collision and transition state theories and relaxation methods.

895A. Advanced Quantum Chemistry I. 3 hours.
Prerequisite: CHM 693 or permission of department.

Exact and approximate solutions to Schrodinger's equation as they apply to systems of chemical interest. Emphasis is on treatment of model systems, as well as methods that are useful for a variety of problems.

895B. Advanced Quantum Chemistry II. 3 hours.
Prerequisite: CHM 895A.

895F. Special Topics in Physical Chemistry. 3-9 hours. (Max. 9 hours.)

Prerequisite: Permission of department.
Advanced topics of current interest and importance in physical chemistry.

897. Statistical Thermodynamics. 3 hours.
Prerequisite: CHM 491C/691C.

A study of the thermodynamic properties of macroscopic systems in terms of molecular properties. Boltzmann, Bose-Einstein and Fermi-Dirac distributions and their application to chemical and physical systems.

900D. Doctoral Research. 1-15 hours. (Max. 115 hours.)

Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

901. Problems in Chemistry. 1-50 hours. (Max. 50 hours.)

Prerequisite: 50 hours in chemistry.
Intensive work on approved problems in certain fields of chemistry.

930D. Doctoral Dissertation. 1-5 hours. (Max. 5 hours.)

Prerequisite: Permission of department.

Classics

Richard A. LaFleur, *Head*
Naomi J. Norman, *Graduate*
Coordinator, 542-2187
(Park Hall)

Graduate work is offered in Greek, Latin, or classics leading to a Master of Arts degree. Requirements for the degree include 40 hours of course work, exclusive of thesis, of which 20 hours must be in the major language (for the degree in Latin or Greek), or 30 hours in Greek and Latin combined (for the classics degree), and the remainder in any of a variety of courses in Greek, Latin, classical civilization, Greek or Roman history, archaeology, art, philosophy, linguistics, or other related areas, to be chosen in consultation with the department. All candidates complete a thesis related to their major language, and must pass both a reading list exam based on a list of readings in ancient authors and modern criticism and an oral examination on their thesis. All candidates must also demonstrate a reading knowledge of German, French, or Italian.

Master's candidates in classics may apply for admission to any of the University's doctoral programs in comparative literature, linguistics, art history, or philosophy. The University's College of Education provides courses that may be taken simultaneously with those in classics to obtain teacher certification (in Georgia, Certificates T-5, T-6 and D-7). The MEd, EdS, and PhD degrees in language education/Latin are also available.

Graduate credit is offered for summer quarter participation in the Georgia Excavations at Roman Carthage (North Africa) and/or in The University of Georgia Classics Studies Abroad Program in Rome.

Several teaching and non-teaching assistantships are available, for which application must be completed by January 15.

All degrees, except the PhD and MA degrees in Greek and classics, may be earned on a summers-only basis; Latin teachers from out of state are awarded tuition waivers, reducing fees to the in-state level.

Classical Culture (CLC)

Classical Culture courses require no knowledge of Greek or Latin, except where indicated.

611. Gender and Greek Religion. 5 hours.

Prerequisite: CLC 150 or WS 201 or CLC 120.
Ancient Greek religions and culture in light of Feminist Theory; scrutiny of ancient Greek values pertaining to gender and religion; reconstructions, through examining literary and archaeological evidence, of ancient Greek religious beliefs and practices pertaining to a) goddesses, their sanctuaries and festivals and b) life cycle events for males and females.

620. Selected Topics in Ancient Civilization. 5 hours. (Max. 15 hours.)

Prerequisite: CLC 120 or 121 or 205H or 206H or permission of department.
In-depth study of special topics in the civilization of Greece or Rome. Topics will vary as demand requires.

649. Archaic Greece. 5 hours.

Prerequisite: Ten hours of language and literature courses.

Close study of the expanding world of Greek culture in the period from 750 to 480 B.C., including consideration of the many new and influential developments in art, literature, history, political science, and philosophy and their interrelationships.

651. Greek Sanctuaries and Festivals. 5 hours.

Prerequisite: CLC 120 (205H) or permission of department.

An examination of the major Greek sanctuaries and their physical remains, and of the Greek religious calendar and its important festivals, including the Olympic Games and the Panathenaia.

652. Classical Archaeology. 5 hours.

A survey of Greek and Roman archaeology, including a discussion of the development of field techniques from Schliemann to the present day.

653. Ancient Cities of Greece and Rome. 5 hours.

Survey of selected Greek and Roman cities and their architecture to understand the principles upon which they were planned and laid out. Students will study the theories of Hippodamus and others and the writings of Vitruvius. Detailed study of the topography of Athens and Rome.

655. Pompeii and Herculaneum: The Buried Cities. 5 hours.

Prerequisite: CLC 121 or 206H or HIS 325 or 439F/639F or 439P/639P or permission of department.

An in-depth study of Pompeii, Herculaneum, and the area destroyed by the eruption of Mt. Vesuvius. Concentration will be on political, social, religious, and economic life combined with a study of the painting, sculpture, and architecture of the excavated cities and villas.

657. Ancient Tragedy. 5 hours.

Prerequisite: Five hours of literature or ancient history or drama.

Examination of the conventions of classical tragedy as exemplified in the plays (in English translation) of the Greek dramatists Aeschylus, Sophocles, and Euripides, as well as the Roman tragedian Seneca.

660. Roman Epic Poetry. 5 hours.

Prerequisite: CLC 121 or 206H or HIS 325 or 439F/639F or 439P/639P or permission of department.

A study of the epic poetry of ancient Rome with special emphasis on the three outstanding epic writers: Ennius, Vergil, and Lucan. The historical background of epic will be examined, and the poems will all be read in English translation, some attention being given to Renaissance and modern translations.

662. The Archaeology of the Greek Colonies. 5 hours.

Prerequisite: CLC 120 or HIS 111 or 325 or 438M/638M or 438P/638P or ART 287.

An examination of the archaeology of the Greek colonies in Ionia, Magna Graecia, and the Black Sea area to identify and explain the combination of Greek and indigenous cultures in these areas on the fringes of the Greek world.

663. The Hellenistic World. 5 hours.

Prerequisite: CLC 120 or ART 287 or HIS 111 or 325 or 438M/638M or 438P/638P or 439F/639F or 439P/639P.

An in-depth examination of archaeology, art, culture and history of Greece and the East from the rise of Alexander to Rome's annexation of Egypt.

664. The Archaeology of Rome's Provinces. 5 hours.

Prerequisite: CLC 121 or 206H or HIS 111 or ART 287 or HIS 439P/639P or ART 477/677 or CLC 453/653 or permission of department.

An examination of the archaeology of the Western and/or Eastern provinces of the Roman Empire, concentrating on the major cities and sanctuaries and their physical remains.

680. Practicum in Classical Archaeology. 5 hours.

Prerequisite: CLC 120 or 121 or permission of department.

Corequisite: CLC 481/681.

Classics

Introduction to all aspects of modern field archaeology on a classical site, including excavation techniques, the keeping of field records and the classification and conservation of finds from the moment of recovery to their final deposition in museums. (Open only to students participating in the University's Carthage excavation.)

681. Archaeology of Punic and Roman Carthage. 5 hours.

Prerequisite: CLC 120 or 121 or permission of department.

Corequisite: CLC 480/680.

An intensive study of the civilization of Roman North Africa from the Punic period through the Arab Conquest, using the important city of Carthage as a model. (Open only to students participating in the University's Carthage excavation.)

700M. Master's Research. 1-15 hours. (Max. 20 hours.)

Prerequisite: Permission of department.

Research while enrolled for a master's degree under the direction of faculty members.

730M. Master's Thesis. 1-15 hours. (Max. 20 hours.)

Prerequisite: Permission of department.

800. Proseminar in Classics: Bibliography and Methods of Research. 1 hour.

A survey of methods, history, and bibliography in philology and other areas of the classics as a background to graduate study in Greek and/or Latin.

801. Greek Civilization. 5 hours. (Max. 20 hours.)

Prerequisite: Ten hours of approved advanced courses in classics and/or Greek and/or Latin.

Topics in Greek literature or civilization.

802. Roman Civilization. 5 hours. (Max. 20 hours.)

Prerequisite: Ten hours of approved advanced courses in classics and/or Greek and/or Latin.

Topics in Roman literature or civilization.

Greek (GRK)

601. Homer. 5 hours.

Prerequisite: Ten hours of 400-level Greek or equivalent.

A detailed study of selections from the *Iliad* and/or the *Odyssey*.

602. Hesiod. 5 hours.

Prerequisite: Ten hours of 400-level Greek or equivalent.

Close study of Hesiod's two surviving poems, *Theogony* and *Works and Days*, with special attention to the relationship of his language and religious thinking to that of Homer.

603. Greek Lyric Poets. 5 hours.

Prerequisite: Ten hours of 400-level Greek or equivalent.

A study of the whole body of extant Greek elegy and lyric, with attention to the political and social background, and to the relation of these literary types to epic and dramatic poetry.

604. Herodotus and Thucydides. 5 hours.

Prerequisite: Ten hours of 400-level Greek or equivalent.

The Persian and Peloponnesian Wars through selected readings.

605. Aeschylus. 5 hours.

Prerequisite: Ten hours of 400-level Greek or equivalent.

Close study of two or three of Aeschylus' seven surviving plays, with emphasis on his theology and special uses of the Greek language.

606. Sophocles. 5 hours.

Prerequisite: Ten hours of 400-level Greek or equivalent.

Close study of two or three of Sophocles' seven surviving plays, with emphasis on the poet's religious and humanistic values and his dramatic style.

607. Euripides. 5 hours.

Prerequisite: GRK 304.

Selected plays of Euripides with emphasis on the poet's dramatic style and his treatment of social, political, and religious themes.

608. Aristophanes. 5 hours.

Prerequisite: Ten hours of 400-level Greek or equivalent.

Reading, translation, and analysis of selected comedies of Aristophanes. Emphasis is placed on the language, style, and thought of Aristophanes, and on the characteristics of Greek Old Comedy.

609. Advanced Readings: Plato. 5 hours.

Prerequisite: Ten hours of 400-level Greek or equivalent.

Advanced reading, translation, and analysis of the dialogues of Plato. Emphasis is placed on the language, style, and philosophical thought of Plato.

610. Attic Orators. 5 hours.

Prerequisite: Ten hours of 400-level Greek or equivalent.

A study of the orations of Demosthenes, Lysias, and Aeschines, with emphasis on the function and techniques of persuasion in oratory and on the political and social contexts of these orations.

620. Readings in Selected Greek Authors. 5 hours. (Max. 15 hours.)

Prerequisite: Ten hours of 400-level Greek or equivalent.

Study of less commonly read Greek authors, such as Pindar, Xenophon, Menander, Lucian, Plutarch, to be chosen according to the interests of students and instructor.

700M. Master's Research. 1-15 hours. (Max. 20 hours.)

Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

730M. Master's Thesis. 1-15 hours. (Max. 20 hours.)

Prerequisite: Permission of department.

801. Readings and Research in Greek Prose. 5 hours. (Max. 15 hours.)

Prerequisite: Ten hours of advanced Greek.
Intensive readings in Greek prose literature and in pertinent critical writings. The topic, author, or genre covered will be determined by the student's previous training and interests.

Latin (LAT)

602. Roman Epic. 5 hours.

Prerequisite: Ten hours of 400-level Latin or equivalent.

Selected readings from the Latin epic poets Ennius, Vergil, Lucan, and others.

603. Roman Historians. 5 hours.

Prerequisite: Ten hours of 400-level Latin or equivalent.

Selected readings from such Roman historical writers as Caesar, Sallust and Ammianus Marcellinus.

604. Roman Elegy and Lyric. 5 hours.

Prerequisite: Ten hours of 400-level Latin or equivalent.

Selected readings from the works of the poets Catullus, Tibullus, Horace, Ovid, and others. Studies in the development of Latin poetic form, meter, and diction.

605. Roman Epistles. 5 hours.

Prerequisite: Ten hours of 400-level Latin or equivalent.

Selected readings from the letters of Cicero, Seneca, Pliny the Younger, and others.

606. Roman Satire. 5 hours.

Prerequisite: Ten hours of 400-level Latin or equivalent.

Selected readings from the satirists Horace, Juvenal, and others.

607. Roman Drama. 5 hours.

Prerequisite: Ten hours of 400-level Latin or equivalent.

Selected readings from the comedies of Plautus and Terence, and the tragedies of Seneca and others.

608. Roman Didactic Poetry. 5 hours.

Prerequisite: Ten hours of 400-level Latin or equivalent.

The poet as teacher. Major portions of Lucretius' poetic treatise on Epicureanism, the *De Rerum Natura*, and Vergil's *Georgics*. The manner in which poetic form and imagery express philosophy.

609. Medieval Latin. 5 hours.

Prerequisite: Ten hours of 400-level Latin or equivalent.

Selected readings from one or more Medieval Latin authors. A study of Latin vocabulary and style during the Middle Ages.

613. Livy. 5 hours.

Prerequisite: LAT 304 or permission of department.

Selected readings from the *Ab Urbe Condita* of Livy, with attention given to literary and historical issues surrounding the author and his work.

614. Tacitus. 5 hours.

Prerequisite: LAT 304 or permission of department.

Selected readings from the *Annales*, *Historiae*, and/or minor works of Tacitus, with attention given to literary and historical issues surrounding the author and his works.

615. Horace. 5 hours.

Prerequisite: LAT 304 or equivalent.

Readings from the works of Horace, including studies in the cultural context of Roman poetry, as well as the development of Latin poetic form, meter, and diction.

616. Ovid. 5 hours.

Prerequisite: LAT 304 or equivalent.

Readings from the *Metamorphoses* and non-elegiac works of Ovid, including studies in the cultural context of Roman poetry, as well as the development of Latin poetic form, meter, and diction.

617. Roman Elegy. 5 hours.

Prerequisite: LAT 304 or equivalent.

Readings from the elegiac work of Tibullus/Sulpicia, Propertius, and Ovid, including studies in the cultural context of Roman poetry, as well as the development of Latin poetic form, meter, and diction.

618. Catullus. 5 hours.

Prerequisite: LAT 304 or equivalent.

Readings from the *Carmina* of Catullus, including studies in the cultural context of Roman poetry, as well as the development of Latin poetic form, meter, and diction.

620. Advanced Readings in Latin. 5 hours. (Max. 15 hours.)

Prerequisite: Ten hours of advanced work in Latin. Selected readings on one or more Latin authors or genres. Topics to be selected on the basis of students' needs.

700M. Master's Research. 1-15 hours. (Max. 20 hours.)

Prerequisite: Permission of department. Research while enrolled for a master's degree under the direction of faculty members.

730M. Master's Thesis. 1-15 hours. (Max. 20 hours.)

Prerequisite: Permission of department.

777. Latin Teaching Apprenticeship. 1 hour. (Max. 3 hours.)

Prerequisite: Satisfactory performance on Latin proficiency examination.

An apprenticeship in the teaching of elementary Latin at the college level; an introduction to methods and materials. Observations and limited practice teaching are required.

801. Readings and Research in Latin Prose. 5 hours. (Max. 15 hours.)

Prerequisite: Ten hours of advanced Latin. Intensive readings in Latin prose literature and in pertinent critical writings. The topic, author, or genre covered will be determined by the student's previous training and interests.

802. Readings and Research in Latin Poetry. 5 hours. (Max. 15 hours.)

Prerequisite: Ten hours of advanced Latin. Intensive readings in Latin poetic literature and in pertinent critical writings. The topic, author, or genre covered will be determined by the student's previous training and interests.

Comparative Literature (CML)

Hugh M. Ruppensburg, *Acting Head*
Gabriel Ruhumbika, *Graduate Coordinator*,
542-2274
(Park Hall)

Foreign language requirements: MA, fluent reading knowledge of one and reading competence in a second; PhD, fluent reading knowledge of two and reading competence in a third.

Students in the Comparative Literature Department do part of their work in this

department and part in the departments of the various literatures. The MA requires 45 credit hours of course work, plus a thesis on a comparative topic. Twenty-five hours must be in graduate CML courses, and 15 hours in graduate courses in other language and literature departments. The PhD requires 55 credit hours of course work, of which 30 hours must be in graduate CML courses and 15 hours in graduate courses in other language and literature departments. Graduates for the PhD are required to pass examinations in a national literature, in a period or genre, and in the history of literary criticism, critical theory, and methodology of comparative literature. The dissertation must be on a comparative topic.

The prospective student in comparative literature should look over the announcements of the offerings in the departments of the individual literatures in which he/she is interested, as well as those of the Comparative Literature Department.

Prerequisite for admission to any of the following courses is a fluent reading knowledge of at least one foreign language or permission of department.

605. Literature and Nature. 5 hours. (Max. 10 hours.)

Prerequisite: Permission of department. A comparative study of literary and philosophical texts of various historical periods that reveal the changing relationship between human beings and their nonhuman environment.

607. Renaissance European Literature. 5 hours.

A survey of the literatures of Western Europe (Italian, French, Spanish, Germanic, and English), 1450-1600, with emphasis on literary types and prevailing ideas. Reading of representative works.

608. Romantic European Literature. 5 hours.

A comparative study of the rise and development of Romanticism in the 18th and 19th Centuries, with reading of selected literature and criticism.

609. Modern Poetry. 5 hours.

A study of experimental trends in lyric poetry from the mid-19th Century to the present.

610. Mannerist and Baroque Literature. 5 hours.

Literary forms and issues in Europe ca. 1550-1700, with special attention to the intellectual background, and the interrelationships between literature and the other arts and sciences.

611. Medieval European Literature. 5 hours.

A study of the literatures of medieval Europe with emphasis on major literary genres and the philosophical and social presuppositions which inform them.

612. 18th Century European Literature. 5 hours.

A survey of the literature of England, France, and Germany in the 18th Century, with emphasis on literary types and prevailing ideas. Reading of representative works.

615. The Novel to 1900. 5 hours.

A study of the novel as a genre. Origins of prose fiction, theory of the novel, and representative readings of novels in the Western tradition from the 16th through the 19th Centuries.

617. The Modern Novel. 5 hours.

A study of experimental trends in the 20th-century novel, with reading of representative works in the Western tradition.

620. Literature and the Visual Arts. 5 hours. (Max. 10 hours.)

Prerequisite: Graduate status in the Division of Language and Literature or Fine Arts, or permission of department.

Formal, philosophical, and thematic relationships between literature and one or more of the visual arts in a given period. Instructor will determine focus of course.

621. Literature and Cinema. 5 hours. (Max. 10 hours.)

Formal, philosophical, and thematic relationships between literature and cinema.

625. Seminar in the Comic Mode. 5 hours.

A seminar exploring the relation of humor to the philosophical and ideological orientation of culture in comic literature from Europe and Latin America from the Middle Ages to the present.

626. Seminar in the Tragic Mode. 5 hours.

A study of the nature of the tragic and the relationship of tragic literature to the philosophic, religious, and ideologic orientation of its culture from Antiquity to the present in the literatures of Europe and America. Instructor will determine the focus of the course.

627. Seminar in the Didactic Mode. 5 hours.

A study of didactic literature in relation to the ideology of its culture (dominant or subversive) in European and American letters. Instructor will determine focus of the course.

640. Central European Literature. 5 hours.

Prerequisite: Satisfaction of core curriculum literature requirement.

The literatures of Central Europe, including works from Central European nations.

660. Survey of East Asian Literature I. 5 hours.

A survey and analysis of poetry, prose, and drama in traditional China and Japan. The works will be in English translation.

661. Survey of East Asian Literature II. 5 hours.

A continuation of CML 660 with emphasis on the 19th and 20th Centuries. The works will be in English translation.

662. East Asian Novel. 5 hours.

A survey and analysis of the major/minor novelists and their works, especially those of the 19th and 20th Centuries. The novels are in English translation.

674. (LIN/EEN) Discourse Analysis. 5 hours.

See LIN 674.

687. (LIN) Language, Gender, and Culture. 5 hours.

See LIN 687.

700M. Master's Research. 1-15 hours. (Max. 10 hours.)

Prerequisite: Permission of department.

Research while enrolled for a master's degree under the direction of faculty members.

730M. Master's Thesis. 1-5 hours. (Max. 20 hours.)

Prerequisite: Permission of department.

771. (JUR) Law and Literature. 3 hours.

Literature and literary theory relevant to procedural problems in death cases; criminal responsibility and plea bargaining; rape; obscenity modern tort law; and the parole evidence rule. Works include Euripides, Koestler, Kierkegaard, Fisch, Durskin, Ecco, Nussbaum, Posner, Fish, Foucault, and Nietzsche.

802. Seminar in Literary Periods. 5 hours. (Max. 25 hours.)

An examination of a specific literary period from an international perspective, with emphasis on theoretical problems in periodization and the relationship of literature to other cultural institutions. Topics will vary.

803. Seminar in Literary Genres. 5 hours. (Max. 30 hours.)

A study of a major genre (e.g., the lyric, the epic) in the literatures of Europe and America, with particular attention to recent developments in genre theory. Topics will vary.

804. Problems in Literary Translation. 5 hours. (Max. 15 hours.)

An examination of the problems and principles of literary translation, with emphasis on the practice of translation.

813. Seminar in Literary Themes and Types. 5 hours. (Max. 25 hours.)

A detailed study of a specific literary theme or type (e.g., the Faust-motiv) and the modification of its configuration in various cultural and historical contexts.

828. Problems in the History of Literary Criticism—I. 5 hours. (Max. 10 hours.)

Selected problems in literary criticism from Classical Antiquity through the mid-18th century with attention to the theoretical issues and assumptions underlying the specific critical problems.

829. Problems in the History of Literary Criticism II. 5 hours. (Max. 10 hours.)

An intensive study of selected problems in literary criticism from the late 18th century to the present. Particular attention will be paid to the theoretical issues and assumptions underlying the specific critical problems under investigation.

830. Seminar in Contemporary Literary Theory and Criticism. 5 hours. (Max. 10 hours.)

Prerequisite: Open to graduate students in the humanities.

An examination of representative contemporary trends in literary theory and critical method, as exemplified by diverse figures from a number of differing national and linguistic cultures.

840. Literature and Science. 5 hours. (Max. 10 hours.)

A comparative study of models of reality implicit in "scientific" and "literary" texts.

886T. (ENG) Seminar in Feminist Literary Theory. 5 hours. (Max. 15 hours.)

See ENG 886T.

888T. (ENG) Seminar in Psychoanalytical Literary Criticism and Theory. 5 hours. (Max. 15 hours.)

See ENG 888T.

898. Readings in Comparative Literature. 5 hours. (Max. 15 hours.)

Prerequisite: Permission of department. Independent reading with regular conferences and reports, in some aspects of comparative literature.

900D. Doctoral Research. 1-15 hours. (Max. 30 hours.)

Prerequisite: Permission of department. Research while enrolled for a doctoral degree under the direction of faculty members.

930D. Doctoral Dissertation. 1-15 hours. (Max. 30 hours.)

Prerequisite: Permission of department.

Japanese (JPN)

650. Readings in Japanese Literature. 5 hours. (Max. 15 hours.)

Prerequisite: JPN 303 or equivalent proficiency in Japanese.

Selected readings of Japanese literature in the original language. Texts will vary, with focus on reading of works of literature and discussion of issues in literary criticism in Japanese.

Computer Science (CS)

E. Rodney Canfield, *Head*

John A. Miller, *Graduate Coordinator,*
542-2911

(*Boyd Graduate Studies Research Center*)

The Master of Science degree in computer science at The University of Georgia is a comprehensive, intensive program of study designed to give qualified and motivated students a thorough foundation in the theory, methodology, and techniques of computer science. Graduates of the program will be prepared to pursue further graduate study or to enter a career in teaching, business, or industry.

A baccalaureate degree with a major in computer science or an allied discipline is required. Students with insufficient background in computer science must take undergraduate computer science courses to remedy this. In addition to the above, Graduate Record Examinations (GRE) test scores are required including the Advanced Test in computer science.

The curriculum consists of core courses in design and analysis of computer algorithms, design and construction of compilers, automata and formal languages, computer system architecture, and database management; at least three advanced courses (800-level) in computer science; at least one graduate seminar; additional courses in computer science sufficient to satisfy all necessary prerequisites and to bring the total plan of study to 40 academic hours; and a Master's thesis.

Two interdisciplinary degree programs with a high computer science content are also offered: the Master of Applied Mathematical Science (MAMS), and the Master of Science in Artificial Intelligence (AI). The MAMS degree program combines course work in computer science, mathematics, statistics, and management sciences to form an interdisciplinary quantitative background. Candidates complete their programs of study with additional advanced work primarily in computer science or an application area.

The AI degree program requires two years of study and is administered by an interdisciplinary faculty. Artificial Intelligence is at the intersection of several traditional fields of study, including computer science, cognitive psychology, linguistics, logic, and philosophy, and the program draws on experienced faculty members in all of these areas.

605. Software Engineering. 3 hours.

Prerequisite: CS 303 and 361.

Provides an in-depth study and practicum of the systems engineering methodologies as applied to the complete life cycle of software systems.

614. Numerical Methods for Computation I. 3 hours.

Prerequisite: CS 303 and MAT 255.

Corequisite: MAT 256.

Computer arithmetic and errors, numerical solutions of nonlinear equations, polynomial interpolation, numerical differentiation and integration, numerical solution of systems of linear equations, and computer problems and applications.

615. Numerical Methods for Computation II. 3 hours.

Prerequisite: CS 414/614.

Spline functions, numerical solutions of ordinary differential equations (initial and boundary value problems), numerical solutions of systems of ordinary differential equations, numerical solutions of partial differential equations, scientific problem solving using standard mathematical software, and computer problems and applications.

627. (MAT) Graph Theory. 3 hours.

See MAT 627.

637. Database Management I. 3 hours.

Prerequisite: CS 303.

A two-quarter sequence on computerized data management. The first quarter concentrates on computer file organization, access, and retrieval techniques. Consideration is given to sequential files, indexed sequential files, and direct files.

638. Database Management II. 3 hours.

Prerequisite: CS 437/637.

A continuation of CS 437/637. Large database management systems based on the hierarchical model, the network model, and the relational model are studied.

647. (MAT) The Design and Analysis of Computer Algorithms I. 3 hours.

See MAT 647.

648. (MAT) The Design and Analysis of Computer Algorithms II. 3 hours.

See MAT 648.

650. Programming Languages. 3 hours.

Prerequisite: CS 303 and 361.

A survey of the structure and design of modern programming languages. Topics include procedure, control, object and data abstraction, modularization and concurrency, as well as vector operations, list processing, string manipulation, logical inferencing and exception handling.

654. (AI) Artificial Intelligence Programming Techniques. 5 hours.

Three lectures and two 1-hour lab periods.

Prerequisite: CS 203 or permission of department.

Corequisite: CS/PHY 455/655.

An introduction to programming in LISP and PROLOG, with emphasis on artificial intelligence techniques. Other languages used for artificial intelligence work will be presented more briefly.

655. (PHY) Artificial Intelligence. 5 hours.

Three lectures and two 2-hour lab periods.

Prerequisite: CS 203 or permission of department or [PHY 110 and one of PHY 301, 303 or 361].

An examination of the artificial intelligence approach to modeling cognitive processes. Includes an introduction to heuristic methods, problem representation and search methods, classic AI techniques, and a review of the controversial issues of the AI paradigm of cognition as computation.

657. Design and Construction of Compilers I. 3 hours.

Prerequisite: CS 303 and 361 and 371.

First of a three-quarter sequence covering compilers for high-level programming languages. Emphasis is on context free grammars, various parsing techniques, and a project in which a working compiler is developed.

658. Design and Construction of Compilers II. 3 hours.

Prerequisite: CS 457/657.

A continuation of CS 457/657.

661. Automata and Formal Languages. 3 hours.

Prerequisite: CS 361.

A survey of the fundamental mechanisms which underlie computer science, including finite state machines, tape machines, Turing machines, push-

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down automata. Corresponding formal language constructs and computability criteria will be covered.

667. (MAT) Introduction to Combinatorics I. 3 hours.

See MAT 667.

668. (MAT) Introduction to Combinatorics II. 3 hours.

See MAT 668.

672. Computer System Architecture. 3 hours.
Prerequisite: CS 303 and 361 and 371.

Functional structure of hardware components and their interrelationship, input/output facilities, control functions, microprocessors.

673. Computer Operating Systems. 3 hours.

Prerequisite: CS 303 and 371.

Introduction to the theory and structure of operating systems. Issues of efficient resource allocation and management in multiprogramming systems.

674. Systems Programming. 3 hours.

Prerequisite: CS 473/673.

Introduction to computer languages, equipment, and techniques for developing operating system facilities and interfacing and control of external devices to computing facilities.

676. Data Communications and Networks. 3 hours.

Prerequisite: CS 303 and 361 and 371.

Planning, design, and implementation of data communication and distributed processing networks. Overview of existing systems and current and future technologies. Algorithms and analysis techniques pertaining to scheduling, routing, and performance.

681. Introduction to Computer Graphics. 3 hours.

Prerequisite: CS 303 and 371 and MAT 256.

Corequisite: MAT 255.

An introductory course in the principles and practices of display in computing systems, including plotters and window-oriented refreshed displays. Hardware characteristics and software methods and conventions for display systems are discussed, including data structures.

682. Computer Graphics. 3 hours.

Prerequisite: CS 481/681.

A course in the principles and practices of display, especially raster displays. Hardware characteristics and software methods and conventions are discussed, with emphasis on data and code structures for color raster displays and interaction with the user.

690. Special Topics in Computer Science. 1-5 hours. (Max. 10 hours.)

Prerequisite: CS 303 and 371 and 361.

A special topics course for upper-division computer science majors. Various advanced topics.

695. Directed Study in Computer Science. 1-5 hours. (Max. 10 hours.)

Prerequisite: Permission of department.

Content will vary in response to the interests, needs and capabilities of the students and faculty involved. Individual, guided study in computer science.

700. Computer Programming. 5 hours.

Prerequisite: MAT 109 or 116.

Introductory computer systems and programming course for graduate students who are not majoring in computer science. Algorithms, programs, computing systems, programming methodology, program projects in a structured language.

700M. Master's Research. 1-5 hours. (Max. 25 hours.)

Prerequisite: Permission of department.

Research while enrolled for a master's degree under the direction of faculty members.

702. FORTRAN Programming. 2 hours.

Prerequisite: CS 201 or 500/700.

A second course in programming using the FORTRAN Language. Program exercises will use the FORTRAN language, and the features of the language will be presented.

704. Introduction to UNIX™ and C Programming. 3 hours.

Prerequisite: CS 201 or 700 or equivalent to one of these courses.

An introduction to the UNIX™ operating system, including basic system commands, editing, shell programming, and use of software management tools. An introduction to the C Programming language.

706. UNIX Systems Administration. 3 hours.

One lecture and two 2-hour lab periods.

Prerequisite: CS 504/704 or equivalent experience.

Management and administration of UNIX computer systems. Includes account, process, disk, terminal, and network management; installation, startup and shutdown; backups and troubleshooting. Hands-on lab emphasized.

710T. Technical Report. 1-5 hours. (Max. 5 hours.)

Prerequisite: 40 hours at the 600 or 800 level.

For use with the professional Master's degree in Applied Mathematical Science.

730M. Master's Thesis. 1-5 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

733. Data and File Processing. 5 hours.

Prerequisite: CS 201 or 500/700 or STA 221-222 or MS 209 or 219H.

Data and file processing for upper-division non-majors and graduate students. Computer applications to file and data processing such as sorting, merging, updating of master files, and others in data processing systems.

805. Knowledge Based Systems. 5 hours. Three lectures and two 2-hour lab periods.
Prerequisite: CS/PHY 455/655 or 865.

Theory and practice of knowledge-based system construction. Topics will include knowledge-base construction, inference engines, reasoning from incomplete or uncertain information, and user interfaces.

814. Numerical Computation and Supercomputing. 5 hours.

Prerequisite: CS 414/614 and 415/615 or permission of department.

An overview of supercomputer architectures, and algorithms for use on supercomputers. Emphasis will be on numerical applications and development of special algorithms for solving various numerical problems.

835. Enterprise Integration. 5 hours.

Prerequisite: CS 437/637 or MAN 872 or equivalent.

Integration of enterprise-wide information systems to improve efficiency, reduce cost, and improve quality. Technical advances will be discussed in database management and distributed systems with emphasis on (a) federated/multidatabase systems for integration of distributed, heterogeneous, and autonomous databases, and (b) business process modeling and workflow automation.

837. Advanced Database Systems. 5 hours.

Prerequisite: CS 437/637 and 438/638.

An advanced course in database systems. Topics include data modeling, normalization theory, transaction management, distributed databases, and object-oriented databases.

854. (EGR) Computational Intelligence. 5 hours.

Three lectures and two 1-hour lab periods.

Prerequisite: [CS/PHY 455/655 and working knowledge of at least one procedural programming language (e.g., C or Pascal)] or permission of department.

Programs that solve complex problems in a particular domain, typically independent of knowledge used to direct the search for an optimal solution. Approaches include: simulated annealing, genetic algorithms, neural networks.

857. (LIN) Natural Language Processing. 5 hours.

Three lectures and two 2-hour lab periods.
Prerequisite: CS/AI 454/654 and LIN/ENG 415T/615T.

A survey of computer processing of natural language, with brief discussion of phonetics and phonology, but primary emphasis on syntax, semantics, and pragmatics. Includes practical experience building a parser for a subset of English or another human language.

861. Advanced Topics in Automata and Formal Languages. 5 hours.

Prerequisite: CS 661 and MAT/CS 447/647.

A survey of advanced topics in such areas as deterministic context-free languages, closure properties of various languages, elements of computational complexity, as well as other advanced topics such as tree automata and cellular automata.

865. (PHY) Logic and Logic Programming. 5 hours.

Three lectures and two 2-hour lab periods.
Prerequisite: [PHY 643 and CS/AI 454/654] or permission of department.

History and theoretical foundations of automated theorem proving and logic programming. Includes a survey of logic programming paradigms.

872. Advanced Computer Architectures. 5 hours.

Prerequisite: CS 472/672 and 473/673 or permission of department.

Presentation and analysis of advanced computing systems; techniques and effectiveness. Methods such as pipeline, vector, multiprocessors and various interconnection schemes will be studied.

875. Principles of VLSI Design. 5 hours.

Prerequisite: CS 472/672 and 437/637.

Methods and computer aids used in the design of integrated electronic devices. Examples of designs will be studied and students will undertake a project design.

877. Computer-Aided Design. 5 hours.

Prerequisite: CS 875 or permission of department.
Survey and analysis of the computer-aided design (CAD) system, with emphasis on the interaction between designer and computing system. Synthesis, description, analysis, optimization by criteria, simulation, and testing of digital systems will be discussed.

881. Advanced Graphics and Image Processing. 5 hours.

Prerequisite: CS 481/681 and 482/682.

Topics in computer graphics and image processing, including image data structures, graphics standards, device-independent graphics systems, digital halftoning, image transformations, edge finding algorithms, image smoothing, and use of parallelism in computer graphics and image processing.

882. (AI) Computer Vision and Pattern Recognition. 5 hours.

Prerequisite: CS 482/682 and MAT 255 and CS 500/700.

Computer Vision and Pattern Recognition including image preprocessing, feature extraction, recognition and localization techniques. Techniques for deriving 3-D shape information from 2-D intensity images such as shape from shading, stereo, motion and texture. Parallel algorithms/ architectures for computer vision including neural computing.

895. Graduate Seminar. 1-2 hours. (Max. 5 hours.)

Prerequisite: Permission of department.

A seminar on advanced and current research topics in Computer Science. Emphasis will be on participation and use of technical literature sources.

Crop and Soil Sciences (CSS)

David E. Kissel, *Head*
Nicholas S. Hill, *Graduate Coordinator*,
542-0923
(*Plant Sciences Building*)

Graduate training leading to the MS and PhD degrees is available in all phases of crop and soil sciences including international and sustainable agriculture. In-depth instruction and research are emphasized in both crop and soil science. Areas of major specialization in crop science are: plant breeding and genetics, physiology, weed control, crop production and management, and forage quality and utilization. Areas of major specialization in soils are: chemistry, physics, classification and genesis, soil erosion and conservation, fertility and plant nutrition, microbiology and mineralogy. A range of environmentally-oriented research opportunities are available within the crop and soil science areas. Facilities for graduate training include three well-equipped Experiment Stations (housing modern analytical equipment, growth chambers, greenhouses and field plot facilities), along with seven field research centers located throughout the state. Cooperative studies are encouraged with other departments at the University, with the Institute of Ecology and the Savannah River Ecology

Laboratory, and with federal research laboratories in the area (USDA/ARS, EPA). Cooperative projects with scientists at the Volcani Center in Israel are also available.

Departmental requirements include research skills (computer science, statistics, or language) for the PhD, and attendance at graduate seminars. Coursework and research topics are individually determined in consultation with the student's advisory committee.

Students with strong backgrounds in biological, geological, physical, chemical, or environmental sciences are encouraged to apply as prospective candidates for graduate training.

604. Plant Breeding. 5 hours. Four lectures and one lab period.

Prerequisite: GEN 358.

Fundamental methods utilized in the science of plant breeding and the important role that breeding plays in crop and tree improvement. (Fall quarter.)

625-625L. (ENT/ET) Pesticide Management and Utilization. 5 hours.

See ENT 625-625L.

626. Forage Management and Utilization. 5 hours.

Prerequisite: CSS 201-201L.

Characteristics of forages; principles of forage establishment and management; relationships of forage chemistry and morphology to quality and utilization; principles of managing grazed pastures and of harvest and storage of forages. (Winter quarter.)

634-634L. Principles of Chemical Weed Control. 5 hours.

Prerequisite: CHM 261-261L, BOT 380 or equivalent.

A study of weeds and weed control methods in agronomic crops with emphasis on chemical weed control. Herbicides will be discussed with regard to chemical structure, selectivity, mode of action, and dissipation. (Fall quarter.)

635-635L. Weed Ecology and Biology. 3 hours.

Two 1-hour lectures and one 2-hour lab period. Prerequisite: BIO 104-104L or BOT 122-122L.

A discussion of weed succession and development in crops, weed-crop interference, and reproduction of weedy species. Environmental and cultural effects on weed-crop interactions as well as systematic identification of weed seed, seedlings and mature plants will be presented.

637. Heavy Metals in the Environment. 2 hours.
Prerequisite: CHM 122-122L or 112-112L and CSS 305-305L and 201-201L or HOR 304.

The natural level and sources of, and man's activity affecting, the heavy metal composition of soils and plants, and their potential hazards to plant life and introduction into the food chain.

640. Crop Ecology. 3 hours.

Prerequisite: [CSS 201-201L or BOT 121-121L] and CSS 305-305L.

World population and food production problems, origin, distribution and adaptation of crop plants as influenced by environment with emphasis on climatic factors. (Winter quarter.)

650. (BOT/BIO) Introduction to Gene Technology. 5 hours.

See BOT 650.

651. Contaminants in Soils. 5 hours.

Prerequisite: CSS 460/660 and 467/667 and CHM 123-123L and 240-240L.

Adsorption-desorption, degradation-transformation, and transport processes affecting contaminants in soil and shallow groundwater. Integration of processes will be illustrated by studying various applications such as wetlands, landfills, septic systems, and leaching of agricultural chemicals. (Spring quarter.)

654-654L. Soil Morphology and Classification. 5 hours.

Prerequisite: CSS 305-305L and one other senior division course in geology, crop and soil sciences, chemistry or forest resources approved by department.

Morphological characteristics of soils, factors influencing these characteristics and classification of soils of the U.S. Several full-day field trips will be required at the student's expense. (Total cost about \$35.) (Spring quarter.)

658. (EGR) Soil Erosion and Conservation. 5 hours.

Prerequisite: [CSS 305-305L or AEN 325] and CSS 201-201L.

A study of erosion as an agricultural and environmental problem in the United States and worldwide: soil erosion mechanics, control of erosion on agricultural and urban land, effect of erosion of productivity, sediment as a pollutant, and modeling erosion processes. (Fall quarter.)

659-659L. Soil Fertility. 5 hours.

Prerequisite: CSS 305-305L.

Soil conditions affecting availability of plant nutrients; methods of determining soil fertility and insufficiency of plant nutrients in soils, and interpretation of chemical and biological measurements as related to fertility maintenance and good soil management. (Winter quarter.)

660. Soil Physics. 5 hours.

Prerequisite: CSS 305-305L and MAT 253 and PCS 127-127L.

Physical properties, moisture relations and methods of physical analysis of soils. (Winter quarter.)

661-661L. (MIB) Soil Microbiology. 5 hours.

Two lectures and three 2-hour lab periods.

Prerequisite: MIB 350 or equivalent.

A survey of the microorganisms occurring in soil, carbon, nitrogen and mineral cycles, and the effect of microorganisms on soil properties. (Spring quarter.)

665-665L. (ECL) Soil Biology and Ecology. 5 hours.

See ECL 665-665L.

666. Soil and Plant Analysis. 3 hours.

Prerequisite: CSS 459/659 – 459L/659L.

Corequisite: CSS 466L/666L.

Current techniques and methods of interpretation of soil testing and plant analysis. (Fall quarter.)

666L. (HOR) Methods for Soil Testing and Plant Analysis. 2 hours.

See HOR 666L.

667. Soil Chemistry. 5 hours.

Prerequisite: CSS 305-305L and CHM 280 and 280L.

The field of soil chemistry applies and extends the concepts of chemistry and physics in the investigation of problems related to the physical, chemical and biological characteristics of soil and their importance in the management of natural resources. (Winter quarter.)

668. Anthropogenic Organic Compounds in the Environment. 3 hours.

Prerequisite: CSS 467/667 and [CHM 261 and 261L or CHM 241 and 241L].

A study of the processes controlling the mobility and fate of organic contaminants in aquatic and soil environments.

700M. Master's Research. 1-15 hours. (Max. 20 hours.)

Prerequisite: Permission of department.

Research while enrolled for a master's degree under the direction of faculty members.

705. Principles of Field Crop Production. 5 hours.

Effect of environment and heredity on crop production, including light, temperature, moisture, fertility and other factors affecting plant growth and management.

730M. Master's Thesis. 1-15 hours. (Max. 20 hours.)

Prerequisite: Permission of department.

800. Soil Physical Chemistry. 5 hours.

Prerequisite: CSS 459/659-459L/659L and [one quarter physical chemistry or CSS 467/667].

Application of physical and surface chemistry to soil systems, with emphasis on highly weathered soils; soil characterization, electrode measurements, ion exchange, adsorption, and colloidal phenomena. (Fall quarter, even years.)

801. Research Methods in Agronomy. 5 hours.

This course is designed for the beginning graduate student. Topics include scientific method, thesis and journal article preparation, seminar presentation, and grant applications. Emphasis on microcomputer use as it relates to these topics. (Fall quarter.)

810. Advanced Agronomy Seminar. 1 hour. (Max. 3 hours.)

Instruction and practice in oral scientific presentations. A literature search within a general topic area unrelated to degree research, and a formal seminar on the subject are required. (Fall, Spring quarters.)

821, 822. Special Problems in Agronomic Science. 1-5 hours each. (Max. 5 hours.)

The planning, completion and reporting of short-time problems in one of the plant or soil sciences, other than thesis, conducted in the library, laboratory, greenhouse, or field. (Offered every quarter.)

825-825L. Forages: Biochemistry, Physiology; Quality, Management. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: CSS 426/626 and [BCH/BIO 310 or BOT 380-380L].

Biochemical and physiological characteristics of forage plants. The influence of environment on plant physiological and biochemical processes which affect forage growth and quality. Laboratory and field analyses of plant growth and quality. (Spring quarter, alternate years.)

828-828L. Crop Response to Microclimate. 5 hours.

Prerequisite: BOT 380-380L, CHM 261, two senior division courses in crop and soil sciences.

Relationships between the microclimate and growth of crop plant communities are studied. Physiological and morphological factors involved in response of crops to microclimate are discussed along with application of these principles to crop production. (Winter quarter.)

829. Physiological Aspects of Plant-Soil Relations. 5 hours.

Prerequisite: Two senior division courses in crop or soil sciences or botany or permission of department. An integration of the fundamental principles of chemistry, biochemistry and physiology as they relate to crop plant growth and development. Emphasis is placed on current concepts in basic

sciences and the transposition of this information into workable tools for crop management and production. (Spring quarter, alternate years.)

834. Advanced Chemical Weed Control. 5 hours. Prerequisite: CSS 434/634-434L/634L.

A discussion of herbicidal penetration, translocation and modes of action in plants as well as the effects of soil-herbicide interactions on persistence, movement, and activity. (Winter quarter.)

840. Chemical Equilibria in Natural Waters. 5 hours.

Prerequisite: CSS 467/667 or equivalent.

Study of the application of thermodynamic chemical equilibria to natural systems including soil solution, ground water, and surficial aquatic systems. Emphasis on computer modelling of complexation, precipitation-dissolution, and adsorption processes determining aqueous composition. (Fall quarter, odd years.)

852. Advanced Soil Fertility. 5 hours.

Prerequisite: CSS 459/659-459L/659L and CHM 280 and 280L.

Physical, chemical, and bacteriological aspects of soil fertility as related to plant growth. (Winter quarter, alternate years.)

853. Methodology in Soil Chemistry. 5 hours.

Prerequisite: CHM 280 and CSS 305-305L.

Special treatment of methods used in soil and plant analyses. Emphasis is placed on chemical laboratory methods and equipment used in soil investigation; however, physical and biological methods are also presented. Interpretation of experimental data is stressed. (Spring quarter, alternate years.)

854. Soil Mineralogy. 5 hours.

Prerequisite: CSS 454/654 and [CSS 467/667 or 459/659-459L/659L] or permission of department.

Concepts and theory of mineral weathering, formation, and identification in soils as they relate to soil genesis and behavior, and application of mineralogical analysis techniques in soils. (Winter quarter, even years.)

855. Tropical Soils Management. 5 hours.

Prerequisite: Permission of department.

Properties of tropical soils and development of management strategies to optimize productivity and conserve soil resources.

860. Advanced Soil Physics. 5 hours.

Prerequisite: MAT 254 and CSS 460/660 or equivalent.

Describes one dimensional water movement in unsaturated soils by solving the governing partial differential equation (Richard's) using the finite difference numerical technique. Emphasis is on describing infiltration in soils with a surface crust.

888. Quantitative Aspects of Plant Breeding. 5 hours.

Prerequisite: STA 422/622 and [CSS 404/604 or equivalent].

A study of quantitative and population plant genetics and their interrelationship with plant breeding. Provides an understanding of genetic and environmental variation and how they relate to selection procedures and choice of type of variety. (Winter quarter of odd years).

889. Plant Cytogenetics. 5 hours.

Prerequisite: One graduate-level course in genetics.

A course designed to teach cytogenetic principles and cytological techniques applicable to plant breeding. Plant cytogenetics to determine the plant breeding application of chromosome number and behavior, basic mode of reproduction, pollen stainability, male sterility, apomixis, autopolyploidy, and allopolyploidy. (Winter quarter of even years.)

890. (BOT) Advanced Plant Genetics. 5 hours.

Prerequisite: BOT 691 or CSS 889 or permission of department.

Recent developments in plant genetics, characterization of the plant genome, sex determination, self-incompatibility, apomix, sexual and somatic hybridization, gene transfer, RFLPs, linkage, transposable elements, polyploidy, cytoplasmic genetics, and classic papers.

900D. Doctoral Research. 1-15 hours. (Max. 20 hours.)

Prerequisite: Permission of department. Research while enrolled for a doctoral degree under the direction of faculty members.

930D. Doctoral Dissertation. 1-15 hours. (Max. 20 hours.)

Prerequisite: Permission of department.

Drama and Theatre (DRA)

W. Joseph Stell, *Acting Head*
Franklin J. Hildy, *Graduate Coordinator*,
542-2836
(Fine Arts Building)

Graduate work in drama is offered in the areas of history and theory of dramatic art for the PhD degree and in the creative and technical aspects of stage, film, and TV for the MFA degree. Facilities include four the-

atres, film production and editing areas. Extensive library facilities and cooperative research arrangements with cognate departments are available.

Prospective students who desire financial aid should complete their application with the Department of Drama and Theatre before February 15.

600. Playwriting. 5 hours.

Prerequisite: DRA 302 or equivalent. Laboratory course in dramatic writing, including study and practice in writing for the modern stage and screen.

620. History of the Theatre. 5 hours.

Prerequisite: Two senior division courses in English or drama.

A study of the history of dramatic art from Greece through Shakespeare.

621. History of the Theatre. 5 hours.

Prerequisite: Two senior division courses in English or classics or drama.

A study of the history of dramatic art from the Elizabethan period to Ibsen.

623. Theatre History from Mid-19th Century to the Present. 5 hours.

Prerequisite: Two senior division courses in English, speech, drama, classics, modern foreign language or comparative literature.

A study of the history of dramatic art from the mid-19th Century to the present.

625. History of Cinema I. 5 hours.

A study of the development of the international film and of film theories from 1895 to 1945, with emphasis on cinema as a dramatic medium.

626. History of Cinema II. 5 hours.

A development of international film and film theories from 1945 to present with emphasis on cinema as a dramatic medium.

628. Women in Performance. 5 hours.

Women's contributions to the performing arts, focusing on contemporary American artists in such fields as theatre, film, dance, performance art, and other contemporary performance genres.

629. Play Analysis. 5 hours.

Prerequisite: Two senior division courses in English, drama, speech or permission of department.

A study of a method of analysis for dramatic scripts and an intensive examination of selected modern and period play scripts.

Drama and Theatre

633. Period Dress, Manners and Movement for the Theatre. 5 hours.

An advanced survey of dress, manners, and movement of selected theatrical periods, concentrating on the dictates of dress and manners upon dance and movement.

646. History of Dramatic Art in Italy. 5 hours.

Prerequisite: Must be registered in the Studies Abroad program and participate on-site.

A study of dramatic art in Italy and Sicily from the Greek colonists to the present. Special emphasis on field trips to archaeological sites and special museums. Visits to contemporary performances. (Offered only in conjunction with summer quarter in Parma, Italy.)

648. Afro-American Drama. 5 hours.

A study of the emergence of a distinct and conscious African-American theatre in the United States.

651. Graduate Research in Drama. 1-5 hours.

A survey of the field of drama including the bibliography resources, types of research studies, and techniques involved.

664. (TMI) History of Costume: Antiquity to 19th Century. 5 hours.

See TMI 664.

700. Advanced Dramatic Writing. 5 hours.

Prerequisite: DRA 400/600 or equivalent.

A laboratory course for the advanced writer interested in developing dramatic properties and materials for contemporary markets.

700M. Master's Research. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Research while enrolled for a master's degree under the direction of faculty members.

701. Intermediate Acting. 5 hours.

Prerequisite: DRA 250, 301 or equivalent.

An intermediate course in acting intended for students not in the MFA program. Study in voice, movement and characterization. Practical work in Showcase productions.

705ABC. Applied Drama Laboratory. 1 hour each. (Max. 5 hours each.)

Individually assigned production and/or performance crew.

711. Theatre Management. 5 hours.

A critical examination of theatre management. A survey of the organization of theatre and promotional and managerial procedures.

730M. Master's Thesis. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

731. Technical Problems. 5 hours. (Max. 10 hours.)

Prerequisite: DRA 334 or permission of department.

Advanced study of the theory and techniques of scenery construction with emphasis on materials, equipment, organization, and relations between the production staff. Course may be repeated once for credit with change of subject matter.

733. Stage Costume Design and Research. 5 hours.

Prerequisite: DRA 230 and 333 or permission of department.

Research sources and techniques with application to the design of costumes for dramatic presentations.

734. History of Costume and Decor. 5 hours.

Prerequisite: DRA 230 or equivalent.

An investigation into the styles of costuming, architecture, furnishings and ornamentation in significant theatrical periods.

735. Scene Design. 5 hours.

Prerequisite: DRA 230 or equivalent.

The principles and techniques of scene design and scene painting. Development of floor plans, sketches and scaled models. Suggested elective for majors in the visual arts. (Lecture-laboratory course.)

736. Stage Lighting. 5 hours.

Prerequisite: DRA 230 or equivalent.

Study of problems of lighting for the stage and screen; lighting instruments, lighting control; operation of lighting equipment. Practical assignments in stage and film production.

737. Advanced Design Studio. 5 hours. (Max. 10 hours.)

Prerequisite: DRA 533/733, 535/735, 536/736.

Advanced and intensive studio work in the methods of rendering designs and the creating of working drawings and models of scenery, costumes and lights for stage, film, and TV. Students work on individual projects with faculty aid and critique.

752. Actor Training I. 5 hours.

Prerequisite: DRA 250 or equivalent.

An intensive course in voice and body training.

753. Actor Training II. 5 hours.

Prerequisite: DRA 552/752 or equivalent.

An intensive course in voice and body training.

754. Characterization for the Actor. 5 hours.

Prerequisite: DRA 553/753.

A study of the role analysis and the problems and techniques of creating subtext with special relation to the actor's natural qualities.

755. Advanced Acting. 5 hours.

Prerequisite: DRA 554/754 or equivalent.

A study of the problems and techniques of acting in periods and styles through intensive scene study and performance.

756. Project in Drama. 5-10 hours. (Max. 10 hours.)

Prerequisite: Permission of department.
Advanced projects in dramatic performance.

757. Acting for TV and Cinema 5 hours.

Prerequisite: DRA 555/755.
Advanced work in the special problems of applying acting technique to the demands of the modern media. Practical work in class and in actual productions with the vocal and physical problems of dramatic material designed for TV and cinema.

761. Play Direction Laboratory. 5 hours.

Prerequisite: DRA 560 or equivalent.
Course concentrates on the director's analysis of the script, the actor-director relationship and theatrical style. Each student directs a one-act play or short film.

763. Producing the New Script. 5 hours.

Prerequisite: Permission of department.
A course for directors, actors, and scriptwriters in the problems of producing the new script for stage, screen, or other media. Full collaboration of dramatic artists in producing a selection of new scripts by student writers.

764. Directing for the Cinema. 5 hours.

Prerequisite: DRA 561/761 or equivalent.
Lab-lecture course dealing with theories and techniques of the art of directing dramatic cinema.

771. Play Directing: Periods and Styles. 5 hours.

Prerequisite: Permission of department.
Lab-lecture course emphasizing methods of directing plays from major periods, including Classical, Elizabethan, Neoclassical, and major styles, such as naturalistic, expressionistic, and absurdist.

773. Seminar in Stage Costume Design. 5 hours.

Prerequisite: DRA 533/733.
Advanced problems in historical styles for theatrical costumes. Special problems of construction of costume elements are explored.

775. Seminar in Advanced Scene Design. 5 hours.

Prerequisite: DRA 535/735.
Advanced study of techniques and resources of scene design, dealing with principles and practices of rendering and composition, design research and styles of scene design.

776. Seminar in Advanced Stage Lighting. 5 hours.

Prerequisite: DRA 536/736.
Advanced study of theory and practice of lighting, dealing with advanced forms of circuitry and control equipment, design and execution of light plots

for complex stage productions and methods of lighting applied in varying forms of theatrical presentation.

803. Seminar in Dramatic Writing. 5-10 hours. (Max. 10 hours.)

Prerequisite: DRA 400/600.
Advanced study in creating and adapting scripts for stage, screen, or other media. May be repeated once for credit.

810. Seminar in Dramatic Theory. 5-10 hours. (Max. 10 hours.)

Prerequisite: 30 hours of graduate credit and permission of department.
Advanced problems in the study of dramatic theory. Topics vary. May be repeated once with change of topic.

820. Seminar in Theater History. 5-10 hours. (Max. 10 hours.)

Prerequisite: 30 hours of graduate credit and permission of department.
Advanced problems in the study of stage, cinema, and media history. Topics vary. May be repeated once with change of topic.

830. Seminar in Design for Stage and Screen. 5 hours.

Prerequisite: 30 hours of graduate credit and permission of department.
Advanced study of the problems of visual design for stage and screen.

840. Seminar in Dramatic Literature. 5-10 hours. (Max. 10 hours.)

Prerequisite: 30 hours of graduate credit and permission of department.
Advanced problems in the study of dramatic literature for stage, screen and media. Topics vary. May be repeated once with change of topic.

900. Research Seminar and Special Problems in Drama and Theatre I. 1-5 hours. (Max. 10 hours.)

Prerequisite: Permission of department.
Individually directed study under faculty supervision on research problems in drama and theatre.

900D. Doctoral Research. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

901. Research Seminar and Special Problems in Drama and Theatre II. 1-5 hours. (Max. 10 hours.)

Prerequisite: Permission of department.
Individually directed study under faculty supervision on research problems in drama and theatre.

921. MFA Project. 3-5 hours.

930D. Doctoral Dissertation. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Ecology (ECL)

Gary W. Barrett, *Director*

James W. Porter, *Graduate Coordinator,*
542-3404

(*Ecology Building*)

For more than thirty years, the Institute of Ecology has been a center for interdisciplinary team research which deals holistically with humans and the environment. Recently the School of Ecology was formed, and all degrees are now offered through this academic unit.

The Ecology PhD degree allows students to develop a broad background in ecology and related disciplines. All requirements for admission are the same as for the Graduate School with the exception of the G.R.E. score. The minimum required G.R.E. score for admission for the Ecology PhD degree is 1100. As part of the curriculum, students must take Ecology 800, Topics in Modern Ecology, but the remainder of the program of study is designed to fit the individual needs of the student. Facilities of the Institute of Ecology, and at off-campus facilities such as the Savannah River Ecology Laboratory, The Joseph Jones Ecological Research Center, the Coweeta Hydrologic Laboratory, The University of Georgia Marine Institute and elsewhere, provide students unusual opportunities for ecological training. The program has attracted outstanding students and produced exceptionally talented ecological scientists, many of whom are now leaders in the field.

The second graduate degree is an MS in Conservation Ecology and Sustainable Development. This is an integrative training program which provides field experience and teaches skills and conceptual approaches that are essential to successful efforts in conservation and environmentally sustainable development. The principal components of the training program include: core courses

to provide breadth in conceptual approaches; program flexibility to allow students the opportunity to emphasize social-economic aspects or natural science aspects without sacrificing either; active involvement in a seminar series that stresses multi-disciplinary efforts and collaboration on projects; and opportunities for field experience in addressing environmental problems. We expect that graduates of this program will be competitive for mid-level management positions in public and private stewardship organizations such as the National Park Service or The Nature Conservancy. The masters degree option would also provide a sound interdisciplinary base for pursuing a more specialized doctoral program.

A certificate in Conservation Ecology and Sustainable Development is also offered. Students enrolled in other graduate programs at The University of Georgia are eligible to apply. This option is designed to meet the needs of professionals in such fields as law, forestry and engineering who may wish to develop an environmental specialization in their professional field. This option includes the coursework that is available in the masters degree program but does not require fieldwork or research.

600-600L. Organismal Ecology. 5 hours.

Three lectures and two 2-hour lab periods.

Prerequisite: [ECL/BIO 350 and MAT 254] and STA 421/ 621 recommended.

Ecological interactions and processes at the level of the organism. The evolutionary basis of biodiversity, the distribution and classification of taxa in time and space. Form and function of organisms from the perspective of anatomical, physiological, and behavioral adaptations, and the effects of environmental modification on adaptation.

601-601L. Population and Community Ecology. 5 hours.

Three lectures and two 2-hour lab periods.

Prerequisite: [ECL/BIO 350 and MAT 254] and STA 421/ 621 recommended.

Ecological patterns and processes at the level of populations and communities, including population dynamics, species interactions, and community organization. Laboratories illustrate techniques for quantifying population size, spatial patterns, predation, competition, and mutualism.

602-602L. Ecosystem Ecology. 5 hours.

Three lectures and one 4-hour lab period.

Prerequisite: [ECL/BIO 350 and MAT 254] and STA 421/ 621 recommended.

Ecosystem structure and function with emphasis on energetic and biogeochemical processes in natural and managed ecosystems. Methodology of ecosystem analysis, including field and laboratory instrumentation, computer analysis and simulation techniques.

603-603L. Mammalogy. 5 hours. Three lectures and two double lab periods.

Prerequisite: CB 300-300L or equivalent.

A study of the taxonomy, distribution, ecology, and evolution of mammals. (Offered alternate years.)

604-604L. Herpetology. 5 hours. Three lectures and two double lab periods.

Prerequisite: CB 300-300L or equivalent or permission of department.

The evolution, ecology, behavior, structure and physiology of amphibians and reptiles. (Offered alternate years.)

605-605L. Ichthyology. 5 hours. Three lectures and one 4-hour lab.

Prerequisite: CB 300-300L or equivalent.

A study of the taxonomy, distribution, ecology, and evolution of the marine and freshwater fishes of eastern North America.

606-606L. Ornithology. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: CB 300-300L or equivalent.

An introduction to the study of birds, emphasizing the identification, classification, life histories, and behavior of Georgia species.

607-607L. Invertebrate Zoology. 5 hours.

Three lectures and two 3-hour lab periods.

Prerequisite: BIO 108 or equivalent.

Functional morphology, taxonomy, phylogeny, and general biology of invertebrates.

608. Principles of Conservation and Sustainable Development I. 5 hours.

Prerequisite: ECL/BIO 350 or permission of department.

Ecological principles applied to conservation of habitats and biodiversity. Influence of human activity on population dynamics, genetics and community structure.

614. (ANT/FRS) Principles of Conservation and Sustainable Development II. 5 hours.

Prerequisite: ECL/BIO 350 or permission of department.

Goals and objectives of conservation and sustainable management of natural resources; ethical, economic and policy considerations of conservation/development programs, implications of ecology and culture on the management of natural resources.

620-620L. (ETH) Ecological Concepts. 5 hours. Ecological science for non-biology majors, using a hierarchical perspective from the global system to the ecology of the individual.

621. (ANT) Zooarchaeology. 5 hours.

See ANT 621.

626-626L. (ENT/BOT) Biological Collections Management. 5 hours.

Prerequisite: One course in upper division of Biological Sciences and permission of department.

Theories, policies and operational procedures in the management of biological research collections including higher category classification, field collecting, accessioning, preparation, curation, and data management. Two weekend field trips.

629. (ANT) Environmental Archaeology. 5 hours.

See ANT 629.

631-631L. (FRS) Limnology. 5 hours. Three lectures, two 2-hour lab periods and field trips.

Prerequisite for ECL 631-631L: ECL/BIO 350 or permission of department.

Prerequisite for FRS 631-631L: FRS 330.

Consideration will be given to common organisms found in aquatic habitats associated with forest lands and to the various factors which influence them.

665-665L. (CSS) Soil Biology and Ecology. 5 hours.

Three lectures and two 2-hour lab periods.

Prerequisite: ECL/BIO 350 or CSS 459/659-459L/659L or CSS/MIB 461/661-461L/661L.

Analysis of organisms in the soil environment, with emphasis on macrobiota and their functional roles in the ecosystem. Food webs and nutrient cycling in a landscape perspective.

700M. Master's Research. 1-15 hours. (Max. 30 hours.)

Prerequisite: Permission of department.

Research while enrolled for a master's degree under the direction of faculty members.

730M. Master's Thesis. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

800. Topics in Modern Ecology. 5 hours. Six hours lecture (three 2-hour meetings).

Prerequisite: Permission of department.

Research topics in modern ecology organized around three frames: 1) ecological aspects of global change, 2) biological diversity, and 3) sustainable ecological systems.

811. (ANT). Tropical Ecological and Cultural Systems. 3 hours.

Prerequisite: ECL/ANT/FRS 614.

Ecology

Characteristics of tropical ecosystems, tropical biological communities, and human cultures in the tropics; how they differ from those in the temperate zone, and the implications for conservation and development.

812-812L. (BOT) Plant Reproductive Ecology. 5 hours.

Three 1-hour lectures and two 2-hour labs.

Prerequisite: 300-level course in ecology or evolution or permission of department.

Lecture-seminars include pollination ecology, breeding systems, patterns of gene flow through pollen and seed dispersal, flower arrangement and phenology, and implications of reproductive biology for demography. Labs will focus on group and individual projects. (Spring quarter of even numbered years.)

815-815L. Freshwater Ecology. 5 hours.

Three lectures and one 4-hour lab.

Prerequisite: Permission of department.

Principles of ecology, population biology, and evolution are developed for freshwater organisms. Laboratories cover basic and up-to-date techniques used in the study of plankton and benthos.

822. Stream Ecology. 2 hours. (Max. 6 hours.)

Prerequisite: Permission of department.

A reading and discussion course concentrating on current topics and literature in stream ecology. Recent literature will be evaluated from the following standpoints: objectives, experimental design, data analyses, results, assessment of results, and significance to general stream ecology.

823. (FRS) Lake Ecology. 2 hours.

Prerequisite: Permission of department.

Current topics and literature in lake ecology.

830. Behavioral Ecology. 5 hours.

Prerequisite: ECL 400/600-400L/600L or permission of department.

Behavior in the context of ecological variation, natural selection, and other evolutionary processes; sexual selection and sexual conflict, mating systems, sex allocation, the causes and consequences of sexual behavior, evolution of sex, parental care, cooperation, competition, and punishment.

831. (BOT/FRS) Population Ecology. 5 hours.

Three 2-hour meetings per week including lecture, discussion, and readings from the current literature.

Prerequisite: ECL/BIO 350 or equivalent and permission of department.

Course concentrates on the applicability of advanced ecological theory to biological populations. Topics covered include: population growth and regulation, niche theory, foraging theory, predator-prey theory, habitat selection, competi-

tion, and community organization. Mathematical and evolutionary treatments of theory are presented when relevant.

840. Perspectives on Conservation Ecology and Sustainable Development. 1 hour. (Max. 6 hours.)

Ecological issues of conservation and development.

842. Issues in Freshwater Conservation. 3 hours.

Two lectures and one 1-hour discussion period. Prerequisite: [BIO 108-108L or equivalent] and permission of department.

Environmental problems in freshwater systems over a variety of scales (local to global) from a conservation perspective. Systems examined include streams, rivers, lakes, wetlands, groundwater and coastal waters, with a strong focus on effective incorporation of ecological knowledge into resource management efforts.

850. Theoretical Ecology. 5 hours.

Prerequisite: Permission of department.

Reading and discussion of theoretical literature in population and community ecology. Lectures as required to provide background and continuity.

851. Ecological Modeling. 5 hours.

Prerequisite: Permission of department.

The development, analysis and use of computer models of populations and ecosystems.

856. Ecology Seminar. 1 hour. (Max. 6 hours.)

Prerequisite: Permission of department.

Weekly meetings covering recent advances in ecology and emphasizing the integration of current ideas and data from plant, animal and microbial research.

858-858L. Systems Ecology I. 5 hours.

Four lectures and one 1-hour lab period.

Prerequisite: Permission of department.

Design and organization of ecological systems, with digital and analog computer implementation of models. Topics in systems analysis and operations research as applied to ecology.

859-859L. Systems Ecology II. 5 hours.

Four lectures and one 1-hour lab period.

Prerequisite: ECL 858.

Design and organization of ecological systems, with digital and analog computer implementation of models. Topics in systems analysis and operations research as applied to ecology.

860-860L. Nuclear Tracers in Ecology. 5 hours.

Three lectures and one 4-hour lab period.

Prerequisite: Two senior division courses in entomology (including ENT 450/650 or equivalent) plus one course in statistics.

State of the art and practical experience in the use of stable and radioactive tracers in entomological/ecological research. Current usage of nuclear

tracers for carbon, nitrogen, phosphorus and sulfur in soil, water, and terrestrial ecosystems. (Even years.)

870. (AAE) Environmental Policy and Management. 5 hours.

Evolution, form and substance of U.S. federal policies and programs that address ecological problems; focusing on the changing nature of problems and alternatives for effective resolution.

900. Problems in Ecology. 1-5 hours. (Max. 15 hours.)

In-depth analysis of contemporary themes in ecology.

900D. Doctoral Research. 1-15 hours. (Max. 100 hours.)

Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

930D. Doctoral Dissertation. 1-15 hours. (Max. 20 hours.)

Prerequisite: Permission of department.

Education

Russell H. Yeany, *Dean*
(*Aderhold Hall*)

The College of Education offers graduate degree programs at three levels in a variety of fields. These include: Master of Arts in Education; Master of Education; Master of Art Education; Master of Music Education; Specialist in Education; Doctor of Education; and Doctor of Philosophy. Many of these graduate programs are designed to meet Georgia Department of Education certification requirements.

Although there are common elements in each of the degree programs, there is considerable flexibility to meet individual students' interests and backgrounds. Accordingly, details about specific admission or program requirements and options should be discussed with the appropriate department or division graduate coordinator. General information regarding degree programs available in the College of Education may be obtained from the Office of Graduate Admissions in the Graduate School or from the Office of Student Services in the College of Education.

The Board of Regents has also authorized Master of Education and Doctor of Education programs to be offered cooperatively by The University of Georgia and certain other institutions in Georgia. General information about these degree programs may be obtained from the Graduate School; specific information may be obtained from the Departments of Adult Education and Educational Leadership.

It is possible to earn credit toward the Master of Education or Specialist in Education degree in course work taken through Area Teacher Education Services. Up to a maximum of one-half of the master's program (e.g., 30 quarter hours for MEd, Plan B) may be applied toward degree requirements provided that the student has been or is later admitted to resident graduate study. Up to 20 quarter hours may be applied toward EdS requirements provided that the student has first been admitted to resident graduate study as a degree candidate.

Six- and 700-level courses are generally designed for students enrolled in a master's degree program. Eight- and 900-level courses are generally designed for students pursuing specialist or doctoral degrees. However, due to differences in background, many students may have a mixture of 600-, 700-, 800-, and 900-level courses regardless of degree objective.

Adult Education (EAD)

Bradley C. Courtenay, *Head*
Ronald M. Cervero, *Graduate Coordinator*,
542-2214
(*Tucker Hall*)

The 600-level courses are primarily for the master's degree candidate and the 900-level courses are primarily for the specialist and doctoral candidates.

600. Special Problems in Adult Education. 1-10 hours. (Max. 20 hours.)

Specialized training appropriate to the needs of the individual. The student's project may involve intensive library investigation or the collection and analysis of original data pertinent to a given problem.

Education

601. An Introduction to Adult Education. 5 hours.

Overview of the field of adult and continuing education. Topics include: adult education agencies and institutions, the adult learner, program planning and development, history and philosophical orientations, adult education and social change, and adult education careers.

604. (ERD) Adult Literacy-Basic Reading Needs. 5 hours.

See ERD 604.

607. Survey of Educational Gerontology. 5 hours.

The course is a survey of social gerontology with an emphasis on adult education. It is designed for the practitioner and will attempt to provide background knowledge on aging and will deal specifically with program development and the involvement of older adults in educational programs.

660. Principles of Adult Learning. 5 hours.

A review of teaching principles that influence adults in a learning situation and factors which influence ways in which adults respond to and participate in learning activities. Emphasis is placed on practical application of adult learning for organizing and conducting educational experiences for adults.

662. Administrative Practices in Adult Education. 5 hours.

Principles and practices of administering an adult education organization. The role of adult educator as a manager of programs and staff in public and private adult education settings.

700. Program Development in Adult Education. 5 hours.

Guided study and practice in developing educational programs for adults in selected institutions (colleges, public schools, and others). Includes identifying needs, establishing objectives, and critically designing and evaluating programs in continuing education.

700M. Master's Research. 1-15 hours. (Max. 30 hours.)

Prerequisite: Permission of department.

Research while enrolled for a master's degree under the direction of faculty members.

705. Instructional Methods in Adult Education. 5 hours.

Examination, critique, and selected application of instructional methods with attention to both traditional approaches as well as exposure to more recent multimedia technologies.

730M. Master's Thesis. 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of department.

765. Applied Project in Adult Education. 5 hours.

Prerequisite: Permission of department.

Functional study of a topic or problem in education significantly related to the student's professional task.

801. Human Resource Development. 5 hours.

Explores three areas of practice and theory of HRD: training, career development, and organization development. HRD practice at the individual, group, and organizational levels will be examined.

805. Multicultural Issues in Adult Education. 5 hours.

Cultural (racial, ethnic, linguistic) diversity in adult educational contexts. Topics include cultural self-awareness, awareness of other cultural groups (including demographic changes and projections) problems/issues in inter-cultural educational settings, theoretical perspectives of multicultural adult education, practical problems and their solutions in handling diversity in adult education settings.

806. Historical and Philosophical Foundations of Adult Education. 5 hours.

Historical and philosophical foundations of adult education as seen in the development of the field, historical figures and movements, historical forms of adult education; philosophical schools of thought, their major proponents and manifestations in adult education practice.

809. Adult Development and Instruction. 5 hours.

Prerequisite: EAD 601 or GNT 600.

Adult developmental psychology including the nature of adult development; issues and trends in the field; theories of adult growth and development; changes in young, middle, and older adulthood; and implications for instruction and learning of adults.

899. Research Methods in Adult Education.

1-15 hours. (Max. 15 hours.)

Prerequisite: EAD 963.

Research methods for dissertation in adult education, including preparation of dissertation prospectus.

900. Program Planning Theory and Research in Adult Education. 5 hours.

Analysis of theoretical and research literature related to planning educational programs for adults. Special emphasis is placed on the political, ethical, and technical issues faced by adult educators.

900D. Doctoral Research. 1-15 hours. (Max. 30 hours.)

Prerequisite: Permission of department.

Doctoral research while enrolled for a doctoral degree under the direction of faculty members.

930D. Doctoral Dissertation. 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of department.

960. Adult Learning Theory and Research. 5 hours.

Research and theory in adult learning including social and psychological aspects of adult learning, participation and motivation, self-directed learning, transformative learning, and recent theoretical perspectives.

961. Contemporary Trends and Issues in Adult Education. 5 hours.

Selected topics and issues in the practice, research, and theory of adult education.

962. Adult Education Administration Research and Theory. 5 hours.

Administration in adult education organizations with emphasis on the theoretical constructs underlying good management practice. The contributions of research for such management roles as program development, leadership, organizational change, and evaluation are highlighted.

963. Critique of Educational Literature in Adult Education. 5 hours.

Critical interpretation and evaluation of research and theoretical writing in adult education with special focus on literature related to student dissertation topics.

964. Continuing Education for Professionals. 5 hours.

Analysis of theoretical and research literature related to the continuing education for professionals. Topics include professionalization, professional practice, professionals as learners, developing and evaluating educational programs, and the institutional context of continuing professional education.

970. Internship in Adult Education. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Study-work program introducing students to the world of professional practice by placing them in an adult education setting. The internship plan is developed by the students and a faculty member with an on-site supervisor.

980. Practicum in Adult Education. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Specialized project or study designed with the supervision of one or more faculty members.

Art Education (EAR)

William T. Squires, *Graduate Coordinator, 542-1624*
(*Visual Arts Building*)

600. Special Problems in Art Education. 1-10 hours. (Max. 10 hours.)

Prerequisite: Permission of department.

Specialized training appropriate to the individual, involving intensive investigation and analysis into specific problems of art education.

634. Art for the Exceptional Child. 5 hours.

Nature, identification and treatment of children's disabilities through art. Emphasizes the role of art for emotional, social, educational and vocational adjustment of other gifted or disabled students.

699. Research Seminar in Art Education. 1-10 hours. (Max. 10 hours.)

746. Internship in Teaching Art Education. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Supervised internship in teaching art.

765. Applied Project in Art Education. 5 hours.

Prerequisite: Permission of department.

Functional study of a topic or problem in education significantly related to the student's professional task.

899. Research Seminar in Art Education. 1-10 hours. (Max. 10 hours.)

Prerequisite: Advanced graduate standing and permission of department.

A seminar for art education graduate students dealing with research methodology, critiques of art education research and proposed research projects.

900D. Doctoral Research. 1-15 hours. (Max. 30 hours.)

Prerequisite: Permission of department.

Doctoral research while enrolled for a doctoral degree under the direction of faculty members.

930D. Doctoral Dissertation. 1-15 hours. (Max. 30 hours.)

Prerequisite: Permission of department.

960. Educational Research in Art Education. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

963. Critique of Educational Literature in Art Education. 5 hours.

Prerequisite: Permission of department.

Critical interpretation and evaluation of research and theoretical writing in the field of education. Each student will make critical reviews of significant education literature in the area of his specialization.

Education

970. Internship of Art Education. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

A study-work program; class or conference study of problems encountered by the intern with remainder of time in application of principles to regular job.

(See also the following ART courses listed in the Department of Art.)

ART 713. Crafts for Teachers. 5 hours.

ART 723ABCDE. Special Problems in Art Education. 1-10 hours. (Max. 10 hours.)

ART 736. The Teaching of Art in the Secondary Schools. 5 hours.

ART 737. Curriculum Development in Art Education. 5 hours.

ART 739. Supervision of Art. 5 hours.

ART 740. The Teaching of Art in the Elementary School. 5 hours.

ART 841. History of Art Education. 5 hours.

ART 843. Readings in Art Education. 5 hours.

Communication Sciences and Disorders (CSD)

Marilyn Newhoff, *Chair*

Robert J. Nozza, *Graduate Coordinator*,

542-4561

(Aderhold Hall)

600. Special Problems in Communication Sciences and Disorders. 1-10 hours. (Max. 10 hours.)

Prerequisite: Permission of department.

Adaptation of the communication sciences and disorders curriculum to the individual needs of students.

650. (LIN) Language Development. 5 hours.

A study of the various aspects of language development. Provides a foundation in topics such as the following: processes of reception, integration, and expression of symbolic information; the nature and effects on personal development and behavior of linguistic symbolism. Students learn basic norms for language development as a basis for diagnosis.

670. Diagnosis In Speech-Language Pathology. 3 hours.

Prerequisite: CSD 452.

The theory, administration, and interpretation of tests and other diagnostic procedures used in determining the nature, etiology of and therapy for

speech and language disorders. Attention is given to the examination of speech mechanism, special abilities related to speech, and to an understanding of how results of psychological tests are related to oral communication problems.

671. Introduction to Audiology. 5 hours.

Prerequisite: CSD 413 or permission of department.

Review of the basic physics of sound and measurement of hearing. Introduction to the pathologies of hearing, hearing loss associated with pathologies and medical and/or rehabilitative strategies.

673. Psycho-Social Aspects of Deafness. 5 hours.

Prerequisite: CSD 471/671 or permission of department.

A study of the development, adjustment and educational needs of the deaf including mental development, personality development, emotional adjustment and social maturity; the aptitudes, special abilities and associated handicaps of the deaf.

674. Articulation and Phonologic Disorders. 5 hours.

Prerequisite: CSD 309 and 412 and 453 or permission of department.

Disorders of perception and production of speech sounds. Theories of phonological development, phonologic processes, and etiologic bases of functional and organic articulation disorders are used as a rationale in the development of individualized diagnostic and therapeutic plans.

675. Voice and Resonance Disorders. 5 hours.

Prerequisite: CSD 412 and 414S and 453 or permission of department.

Etiologic factors and methodology for diagnosis and treatment of functional and organic pitch, loudness, and quality disorders of voice. Communication management of the laryngectomized individual.

676. Fluency Disorders. 5 hours.

Prerequisite: CSD 412 and 480/680 and 453 or permission of department.

Major theories of etiologic factors in stuttering and other disorders of fluency, including neurophysiologic, psychological, and psycholinguistic variables. Use of theoretical models in the development of individualized diagnostic and therapeutic plans.

677. Clinical Audiology I. 5 hours.

Prerequisite: CSD 471/671.

Rationale and procedures for measuring aspects of hearing using simple and complex stimuli, threshold and supra-threshold measurements and site of lesion measurements.

678. Clinical Audiology II. 5 hours.

Prerequisite: CSD 471/671.

The study of the rationale and procedures of advanced tests used for differentiating between types of auditory disorders.

679. Hearing Aids and Amplification Systems. 5 hours.

Prerequisite: CSD 471/671.

Hearing aids and amplification systems including history, design, electro-acoustic and acoustic characteristics as well as the theory of hearing aid evaluation and selection procedures, ear mold acoustics and selection, and assistive listening devices.

680. Neural Bases of Speech and Language. 5 hours.

Prerequisite: CSD 310 or permission of department. Neuroanatomy and neurophysiology of speech, hearing, and language from a communication science perspective.

681. Basic Manual Communication. 5 hours.

History and description of manual communication systems. Practice in the expressive and receptive use of fingerspelling and sign language.

682. Clinical Audiology III. 5 hours.

Prerequisite: CSD 678 or permission of department.

Neurophysiologic procedures used in the evaluation of human auditory and vestibular systems to include electronystagmography, auditory middle latency response, auditory late response, and otoacoustic emissions.

684. Neuropathologies of Speech and Language, Part I. 5 hours.

Prerequisite: Permission of department.

Dysarthria, dysphagia, and related disorders affecting the speech musculature in children and adults. The focus is on neurological correlates of muscle paralysis/paresis, differential diagnosis, and speech rehabilitation.

685. Neuropathologies of Speech and Language, Part II. 5 hours.

Prerequisite: Permission of department.

Study of acquired aphasia, apraxia, and related communication disorders. The focus is on differential diagnosis and rehabilitation.

686. Special Issues in Adult Language Disorders. 5 hours.

Prerequisite: PSY 480/680 and CSD 685 or master's degree candidate in Speech-Language Pathology, or permission of department.

Communication and cognition in normal adults and the influences of aging and acquired neurological impairments on these behaviors. Adult communication disorders associated with dementia, agnosia, non-dominant cerebral hemi-

sphere injury, traumatic brain injury, and schizophrenia are discussed with emphasis on their characteristics, assessment, and treatment.

690. Pediatric Audiology. 5 hours.

Prerequisite: CSD 471/671.

Study of the normal development of the auditory mechanism and causes of hearing loss in children, the evaluation process including identification audiometry, the effects of hearing loss on speech and language development, and the remediation process.

700M. Master's Research. 1-15 hours. (Max. 30 hours.)

Prerequisite: Permission of department.

Research while enrolled for a master's degree under the direction of faculty members.

701, 703. Clinical Practice in Speech-Language Pathology. 2 hours each.

Prerequisite: Permission of department.

Supervised clinical practice in speech-language pathology including functional and organic disorders. Communication problems provided for observations and clinical practice include articulation, voice, child language, stuttering, and aphasia. In addition, speech and language problems associated with cleft palate, cerebral palsy and hearing loss are included in the therapy program. As the student progresses in the program, the level of case severity and responsibility will increase.

704. Clinical Practice in Speech-Language Pathology. 1-10 hours. (Max. 10 hours.)

Prerequisite: CSD 500.

Supervised clinical practice in speech-language pathology including functional and organic disorders. Communication problems provided for observations and clinical practice include articulation, voice, child language, stuttering and aphasia. In addition, speech and language problems associated with cleft palate, cerebral palsy and hearing loss are included in the therapy program.

713. Clinical Practice in Audiology. 2 hours.

Prerequisite: Permission of department.

Clinical and field experience in audiology including neonatal testing, pediatric audiology, public school screening, work with the preschool deaf, auditory training and speech reading, noise measurements, hearing conservations, geriatric audiology, auditory brainstem response testing and hearing aid evaluations.

714. Clinical Practice in Audiology. 1-10 hours. (Max. 10 hours.)

Prerequisite: CSD 511.

Clinical and field experience in audiology including neonatal testing, pediatric audiology, public school screening, work with the preschool deaf, auditory training and speech reading, noise mea-

Education

surements and hearing conservations, geriatric audiology, auditory brainstem response testing and hearing aid evaluations.

730M. Master's Thesis. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

734. Language Assessment and Intervention with Preschool Children. 5 hours.

Prerequisite: CSD 310 and 452.

Assessment and intervention strategies required for treatment of language disorders in the preschool population. Formal and informal language assessment procedures; selection and implementation of appropriate intervention models.

735. Language Assessment and Intervention with School-Age Children. 5 hours.

Prerequisite: CSD 452 or permission of department.

Assessment and intervention strategies required for treatment of language disorders in the school-age population. Delineation of language requirements for successful classroom performance; impact of language disorders on performance in the classroom; appropriate assessment of school-age children and adolescents; and intervention models for remediation of language disorders for these age groups.

738. Program Administration in Communication Sciences and Disorders. 3 hours.

Methods for finding, selecting, and scheduling children with communication disorders in the public schools, clinics, and hospitals. The organizational and administrative problems in keeping records, reporting, and coordinating diagnostic and therapeutic activities. Discussion of professional responsibilities, relationships with other professional persons, and current trends in the profession.

746A. Internship in Speech-Language Pathology. 1-15 hours.

Prerequisite: Permission of department.

Supervised speech-language pathology practicum in a public school setting.

746B. Internship in Audiology. 1-15 hours.

Prerequisite: Permission of department.

Supervised practicum in hospitals, community clinics, centers, public schools or a combination of these settings.

765. Applied Project in Communication Sciences and Disorders. 5 hours.

Prerequisite: Permission of department.

Study of a topic or problem significantly related to the student's professional task. Includes completion of a product.

770. Clinical Internship in Communication Sciences and Disorders. 5-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

A practical experience in a hospital or community speech and hearing center under a supervisor approved by the department.

775. Directed Individual Study in Communication Sciences and Disorders. 5 hours.

Prerequisite: Permission of department.

Adaptation of the communication sciences and disorders curriculum to the individual needs of students. A detailed outline of requirements must be prepared in conference by the student and instructor and approved by the chair of Communication Sciences and Disorders.

776. Directed Individual Study in Communication Sciences and Disorders. 5 hours.

Prerequisite: Permission of department.

Continuation of CSD 775, but content must be different.

778. Rehabilitative Audiology II. 5 hours.

Four lectures and one 2-hour lab period.

Prerequisite: CSD 471/671.

Models and procedures for implementing rehabilitative audiological programs for children and adults.

779. Rehabilitative Audiology I. 5 hours.

Prerequisite: CSD 471/671.

A study of the theories and procedures used in the rehabilitation of both the deaf and hard of hearing. Both the historical development and current trends in education of the hearing impaired will be reviewed.

781. Hearing Conservation. 5 hours.

Prerequisite: CSD 471/671.

A study of the methods used for the detection of pathological noise and the correction of its effects on the human hearing mechanisms in the community, industry, and the military.

782. Language of the Hearing Impaired. 5 hours.

Prerequisite: CSD 450/650, 452, 534/734, 735 or permission of department.

Theories and procedures for assessing and teaching language to the hearing impaired, with review of the historical methods and current approaches.

783. Speech of the Hearing Impaired. 5 hours.

Prerequisite: CSD 414 and 674 or permission of department.

Theories and procedures for assessing and teaching speech to the hearing impaired.

784. Curriculum for the Hearing Impaired. 5 hours.

Study of the development, selection, and modification of appropriate curriculum for early childhood and elementary hearing impaired students.

785. Written Language of the Hearing Impaired. 5 hours.

Prerequisite: CSD 782 and/or ERS 401/601.

Impact of hearing loss on the language processes of reading and writing, and procedures for the assessment with the teaching of written language (reading and writing) to hearing impaired students.

786. Educational Assessment of the Hearing Impaired. 5 hours.

Prerequisite: CSD 782.

Components of a comprehensive educational assessment for hearing impaired individuals, including interview, administration and interpretation of appropriate norm-referenced and criterion-referenced measures, and conference procedures.

800. Measurement, Psychophysical Methods and Signal Detection. 5 hours.

Prerequisite: STA 421/621 or 200 and CSD 471/671.

This course examines the basic concepts of measurement theory as a prerequisite to the study of the application of classical psychophysics and signal detection theory in auditory research.

801. Seminar: Speech Acquisition and Disorders. 1-5 hours. (Max. 15 hours.)

Prerequisite: Six courses in communication sciences and disorders.

A review of current literature and issues in speech and language pathology.

802. Seminar in Audiology. 1-5 hours. (Max. 15 hours.)

Prerequisite: Four courses in audiology.

Study of recent developments and research in audiology.

805. Seminar: Language Acquisition and Disorders. 5 hours.

Prerequisite: CSD/LIN/PSY 450/650 or CSD 452 or 534/734 or 735 or permission of department.

Study of recent issues and research in language acquisition and disorders, including consideration of major theories, neuropsychology, the at-risk infant, and aging.

806. Seminar in Auditory Disorders. 5 hours.

Congenital and acquired hearing disorders, and their effects on the peripheral and central auditory system.

836. Advanced Speech and Hearing Science. 5 hours.

Laboratory experience in the instrumental analysis of speech.

872. Organic Disorders of Speech: Cleft Palate. 3 hours.

Prerequisite: Six courses in communication sciences and disorders.

A detailed study of the cleft palate and its effect on speech; means for assessing speech adequacy and potential for improvement; and role of the speech-language pathologist in the rehabilitation of cleft palate individuals.

876. Organic Disorders of Speech: Laryngectomy. 3 hours.

Prerequisite: CSD 674 and 675.

Assessment of speech potential of the post-laryngectomy person; speech rehabilitation techniques including esophageal voice training, use of the electrolarynx, and surgical-prosthetic rehabilitation methods.

899. Research Seminar in Communication Sciences and Disorders. 1-10 hours. (Max. 10 hours.)

Prerequisite: Permission of department.

Review of research literature for advanced graduate students.

900D. Doctoral Research. 1-15 hours. (Max. 30 hours.)

Prerequisite: Permission of department.

Research while enrolled for a doctoral degree under the direction of faculty members.

930D. Doctoral Dissertation. 1-15 hours. (Max. 45 hours.)

Prerequisite: Permission of department.

960. Educational Research in Communication Sciences and Disorders. 1-15 hours. (Max. 15 hours.)

Prerequisite: ERS 401/601 and 411/611 and 812.

Individually directed research for the advanced graduate student. Emphasis is placed on the preparation of a paper of publishable quality.

970. Internship in Public Schools: Communication Sciences and Disorders. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Advanced internship in public schools with emphasis on problems in administration and supervision.

973. Internship in Institutions: Communication Sciences and Disorders. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Clinical practicum for advanced students in an institution such as a mental retardation center, mental health agency, or residential treatment center for the speech, language, and hearing impaired.

Counseling and Human Development Services (ECP)

Theodore K. Miller, *Head*
Roger B. Winston, Jr., *Graduate Coordinator, 542-1812*
(Aderhold Hall)

Two distinct doctoral programs are offered in the department: the counseling psychology

program, and the counseling and student personnel services program. Each program has separate admission standards, curricula, and general requirements.

The counseling psychology program is based on the scientist-practitioner model of training in professional psychology and was fully accredited by the American Psychology Association in 1986. The program, leading to the PhD degree in counseling psychology, prepares graduates for instructional and service positions in colleges and universities and for employment in health agencies and institutions. The curriculum is also intended to be consistent with state licensure requirements for the practice of applied psychology in independent practice.

The counseling and student personnel services PhD program is designed to prepare professionals for careers as college student affairs administrators, graduate faculty members in student affairs professional preparation programs, and/or positions that specialize in student assessment, outcomes research, and program evaluation in higher education. The scientist-practitioner model of graduate education is the foundation of the program. Graduates are expected to possess skills and knowledge as theoretician-researchers and as professional higher education leader-administrators.

There are three master's degree programs in the department, each of which offers the MA and MEd degrees: (1) student personnel in higher education, (2) rehabilitation counseling, and (3) guidance and counseling, which has two specialities—school counseling and community agency counseling. The student personnel in higher education, school counseling, and community counseling programs are accredited by the Council for the Accreditation of Counseling and Related Educational Programs (CACREP), and the rehabilitation counseling program is accredited by the Council on Rehabilitation Education (CORE).

The student personnel in higher education program focuses on the psychosocial and intellectual development of college students and is designed to prepare practitioners for work in student affairs divisions in areas such as residence halls, student activities, and career planning and placement. The rehabilitation counseling program is designed

to educate counselors prepared to work with physically and/or mentally handicapped individuals in a variety of public and private service and treatment agencies. The guidance and counseling program is designed to prepare graduates to work as school counselors or to work in a variety of community settings, such as mental health centers, alcohol and drug treatment programs, and employment services offices.

The Specialist in Education (EdS) program is offered in guidance and counseling (with specialty in school counseling). The EdS provides advanced education and training in human service delivery and leadership and is viewed as a terminal degree designed for individuals who do not plan to pursue the doctorate.

Admission to the PhD program is for fall quarter only. Admission to all master's degree programs is for summer or fall quarter only, depending on the program. *Applicants should contact the department's graduate coordinator for detailed information about programs and application procedures.* Early application is encouraged because all programs have enrollment limits.

600. Special Problems in Counseling and Human Development Services. 1-10 hours. (Max. 10 hours.)

Specialized training appropriate to the needs of the individual. The student's project may involve intensive library investigation or the collection and analysis of original data pertinent to a given problem.

602. Interpersonal Relationships. 5 hours.

Prerequisite: Two undergraduate courses in psychology or educational psychology.

Interpersonal skills are taught and demonstrated by the instructor. Students practice the skills in role playing situations. Skills included are: physical attending, psychological attending, listening, perceiving surface and underlying feelings, basic responding skills, personalizing skills and initiating skills.

699. Research Seminar in Counseling and Human Development Services. 1-10 hours. (Max. 10 hours.)

A seminar for master's level students in education dealing with proposed research projects and critiques of the literature.

700. Fundamentals of Guidance in Elementary and Secondary Schools. 5 hours.

An introduction to professional training for counselors and an opportunity for students to acquire

an overview of guidance and counseling functions in the school program.

700M. Master's Research. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

701. Individual Appraisal. 5 hours.

Principles of testing, types of scores, use of instruments and methods of assessing abilities, achievement levels, interests, attitudes, developmental variables, vocational skills, and personality characteristics. Use of test and non-test data in guidance and counseling.

702. Case Study Techniques. 5 hours.

Prerequisite: ECP 500/700, 501/701, or permission of department.

The school counselor's role as consultant and resource person for administrators, teachers, and parents. Skill in the techniques of collecting and assimilating data pertinent to the understanding of behavior and the implementation of appropriate intervention techniques to effect behavior change; practice in the use of case study techniques in a school setting.

703. Evaluation of Vocational Potential. 5 hours.

Prerequisite: ECP 501/701.

This course is designed to provide the student with the knowledge of vocational evaluation tools and techniques.

704. Interpretation of Vocational Evaluation Data. 5 hours.

Prerequisite: ECP 703.

The student will learn the process of objectively analyzing, synthesizing, and utilizing vocational evaluation data in the development of rehabilitation plans for the handicapped. The integration of vocational evaluation with occupational information systems will also be stressed.

705. Vocational Development. 5 hours.

Prerequisite: Permission of department.

Career development conceptual formulations; career information in teaching and counseling; sequential decision-making processes and strategies; job placement skills; nature, sources, and functions of information available to assist individuals in formulating goals and comprehensive plans.

706. Counseling the Alcohol and Drug Abuser. 5 hours.

Prerequisite: ECP 402/602.

The student will learn about the personal and social characteristics of alcohol and illicit drug abusers. Counseling techniques that have been effective with drug and alcohol abusers will also be stressed.

707. Mental Health and Community Agency Counseling. 5 hours.

Prerequisite: ECP 402/602.

An overview of the roles and functions of counselors in mental health counseling settings (such as community agencies, drug and alcohol treatment programs and employment services) are examined.

708. Introduction to Group Counseling. 5 hours.

Prerequisite: ECP 402/602 and 788.

Introductory group counseling theories. Review the basics of setting up and conducting counseling groups. Discuss ethical standards related to group counseling.

711. Intentionally Structured Group Interventions. 1-5 hours. (Max. 10 hours.)

Corequisite: ECP 801.

Design, implementation, and evaluation of structured group interventions intended to influence the physical, social, emotional, academic, career, intellectual, aesthetic, or moral development of participants.

715. Counseling the Grieving and Dying. 5 hours.

Prerequisite: ECP 402/602 or equivalent; permission of department.

Issues influencing the grieving and/or dying client are presented. Emphases are upon counseling techniques, their application and the counselor's personal feelings and attitudes toward death and how they affect the client.

720. Introduction to Rehabilitation Counseling. 5 hours.

This course is designed to give the student a comprehensive introduction to Vocational Rehabilitation. Among the topics presented are: (1) philosophy of rehabilitation; (2) historical development of vocational rehabilitation; (3) legislative acts and amendments; (4) organizational structure of vocational rehabilitation; (5) vocational rehabilitation programs and speciality areas; (6) cooperating agencies and community resources; (7) referral and delivery systems; (8) incidence of disability; (9) the rehabilitation process; (10) client study; (11) professional organizations; and (12) professional issues and ethics.

724. Psychosocial Aspects of Disability. 5 hours.

Psychological and sociological aspects of severe disabilities, including adjustment factors in living with disabilities, community attitudes toward individuals with disabilities, and strategies to change negative attitudes.

725. Medical Aspects of Disability. 5 hours.

Etiology, prognosis, treatment, and vocational implications essential to understanding the limitations of people with disabilities.

Education

726. Job Development and Placement. 5 hours. Theory and practice in job selection, job analysis, job modification, job development, and job placement of people with disabilities.

730M. Master's Thesis. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

765. Applied Project in Counseling and Human Development Services. 5 hours.

Prerequisite: Permission of department.

This course is designed to encourage individual research in an area pertinent to the field of counseling and human development services, with emphasis on increasing skills necessary to collect, interpret, and utilize research data.

770CPST. Internship in Counseling and Human Development Services. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department and completion of 30 hours of graduate level coursework.

A supervised experience in an applied setting appropriate to program specialization.

C. Community Agency Setting.

P. Post-Secondary Education Setting.

S. Elementary or Secondary School Setting.

T. Rehabilitation Setting.

780. Individual Counseling Practicum. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Supervised psychological counseling practice in a setting consistent with the student's professional goals.

787. Practicum in College Student Affairs. 1-15 hours. (Max. 15 hours.)

Prerequisite: ECP 803 and permission of department.

Supervised practice within the student affairs program at the university or other institutions of higher learning. Practical work and observation experience is offered with supervision by members of the student affairs staff. A weekly seminar involving all practicum students is held under the direction of the faculty practicum coordinator.

788. Counseling. 5 hours.

Prerequisite: ECP 602 and permission of department.

An introduction to theoretical approaches in counseling and their application to settings in education, rehabilitation, community, and employment. Examination of the effects of differences in counselor/counselee roles, values, and goals.

801. Principles of Group Process. 5 hours.

Prerequisite: Permission of department.

Study and practice of basic approaches to group procedures in relation to group goals, objectives, and dynamics and the effect that particular group procedures have upon the facilitation of individual and group development.

802. Organization and Leadership of Pupil Personnel Services. 5 hours.

A course for practicing and potential directors of pupil personnel services. An examination of organizational patterns and supervisory responsibilities of the director in the development and operation of a comprehensive program of pupil personnel services.

803. Principles of College Student Development. 5 hours.

Prerequisite: Permission of department.

An introduction and orientation to the field of student affairs work with emphasis upon its philosophical, psychological, and sociological foundations and primary objectives and functions within institutions of higher learning. Special attention is given to the personal development of college students.

804. College Student Development Interventions. 5 hours.

Prerequisite: ECP 803 and permission of department.

Skill building and competency attainment through experiential laboratory training in specific functions and practices of student affairs professionals in institutions of higher learning.

805. Leadership and Organization of College Student Affairs Divisions. 5 hours.

Prerequisite: ECP 803 and 804 or permission of department.

Study of leadership and administration principles and organization models applied to college student affairs divisions. Strategies for implementing student development goals through application of organization development techniques; budgetary processes; staff supervision and development; policy formulation; and program development are emphasized.

819. Cross-Cultural Counseling. 5 hours.

Prerequisite: ECP 402/602.

Cultural-specific knowledge, skills, and self-awareness needed to counsel members of racially and ethnically diverse populations.

899. Research Seminar in Counseling and Human Development Services. 1-10 hours.

(Max. 10 hours.)

Prerequisite: Permission of department.

A research seminar for individual or groups of doctoral students dealing with proposed psychological, vocational, educational, and developmental programs and projects.

900D. Doctoral Research. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Research while enrolled for a doctoral degree under the direction of faculty members.

904. Advanced Theories of Counseling. 5 hours.

Prerequisite: ECP 788 and permission of department.

An examination of the various theories of counseling and the implications for the practicing counselor. Specific attention is focused upon selected aspects of the several theories with consideration of the similarities and differences.

906. Theories and Procedures of Group Counseling. 5 hours.

Prerequisite: ECP 801 or the equivalent and permission of department. (Concurrent enrollment for two-quarter sequence with ECP 986.)

Basic group counseling theories with emphasis on techniques and application, ethical responsibilities, and current trends with experiential opportunities provided.

908. Human Development Services Interventions. 5 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Investigation of theoretical foundations, research findings, and techniques for selected human development interventions. Topics will vary, but will include environmental assessment and milieu management, life skills training, consultation in human service agencies, and organization development in educational settings.

910. Developmental Counseling. 5 hours.

Prerequisite: ECP 788 and CFD 450/650 or an equivalent introductory course in human development theory.

Application and assessment of cognitive, psychosocial, person-environment interaction, and life-span-development theories to counseling.

912. Seminar in Career Development Theory and Research. 5 hours.

Prerequisite: ECP 705.

Critical analysis of career development theory and research. Included will be a comprehensive review of the principles and techniques of career counseling. Special consideration will be given to the seminar research developmental theorists, typological theorists, and social learning theorists.

913. Seminar on the College Student. 5 hours.

Prerequisite: Six graduate courses in education, psychology, sociology.

Examination of the ecology of the college students in America today. Recent research and literature on college student development, personality characteristics, values, and cultures are

emphasized. Especially relevant for those who plan to hold teaching or administrative positions in institutions of higher learning.

915. College Student Affairs Seminar. 5 hours.

Prerequisite: Permission of department.

This advanced seminar investigates current trends, issues, and research related to contemporary college student affairs practices. Organizational patterns, models, and structures; professional standards; personnel practices; and innovations in program and service delivery are examined.

916A. Advanced Topics in Counseling Theory: Person-Centered Approach. 5 hours.

Prerequisite: ECP 788 and 904.

An in-depth examination of significant theoretical thought in the practice of the Person-Centered Approach. Research and investigation of its application will be evaluated critically.

916B. Advanced Topics in Counseling Theory: Gestalt Therapy. 5 hours.

Prerequisite: ECP 788 and 904.

An in-depth examination of significant theoretical thought in the practice of Gestalt Therapy. Research and investigation of its applications will be evaluated critically.

916C. Advanced Topics in Counseling Theory: Cognitive-Behavioral Approaches. 5 hours.

Prerequisite: ECP 788 and 904.

Explores current cognitive-behavioral models for understanding human problems and behavior change. Students critically examine cognitive-behavioral models in depth. Emphasis is placed on viewing the cognitive-behavioral movement as a bridge between theory and practice.

922. Rehabilitation Education. 5 hours.

Prerequisite: Permission of department.

Elements of rehabilitation education programming, including accreditation requirements, training grants, field work supervision, and continuing education.

924. Professional Issues in Rehabilitation. 5 hours.

Prerequisite: Permission of department.

History, development, and current issues related to the profession of Rehabilitation Counseling. Special topics include philosophical assumptions, legal and ethical considerations, new rehabilitation service initiatives and new consumer populations.

930D. Doctoral Dissertation. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

942. Adlerian Family Counseling. 5 hours.

Prerequisite: ECP 402/602 and 788 or permission of department.

Education

Presentations, demonstrations and critical analyses of the basic principles and practices of Adlerian Family Counseling. Included will be a review of the fundamental tenets of Alfred Adler's approach to family education, intervention and enrichment.

950. Foundations of Counseling Psychology. 5 hours.

Prerequisite: ECP 788 or equivalent; admission to counseling psychology program.

The course will focus on a study of the history, development, and current issues related to the profession of counseling psychology. Special topics will include philosophical assumptions, legal and ethical considerations, and implications of research topics.

951. Theories of College Student Development. 5 hours.

Prerequisite: ECP 803 and 804 or equivalent. Major theories of college-student psychosocial, intellectual, moral, and ego development; measurement of developmental constructs; and effects of college attendance on each domain. Differences attributable to gender, socioeconomic background, sexual orientation, age, and ethnicity are examined.

952. College Student Affairs Administration. 1-5 hours. (Max. 10 hours.)

Prerequisite: ECP 915.

Theories, models, issues, and practices in contemporary college student affairs administration.

960, 961, 962. Educational Research in Counseling and Human Development Services. 5 hours each. (Max. 15 hours.)

Prerequisite: Permission of department.

This course is designed for advanced graduate students to accommodate research in current psychological, vocational, educational and developmental trends, unique interests and special research efforts.

963. Critique of Educational Literature in Counseling. 5 hours.

Prerequisite: Permission of department.

A review and critique of the professional literature in counseling with emphasis upon selection criteria and procedures for counselor preparation; programs and standards for counselor preparation; assessment of counselor performance; ethical and legal considerations; paraprofessionals in counseling; and status of research in counseling.

970. Advanced Internship in Counseling and Human Development Services. 1-20 hours. (Max. 20 hours.)

Prerequisite: Permission of department.

An advanced supervised experienced in an applied setting.

973. Research in Counseling and Human Developmental Services. 1-15 hours. (Max. 15 hours.)

An advanced individual research internship in psychological counseling and human development services.

981. Advanced Individual Counseling Practicum. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Supervised psychological counseling practice in a setting consistent with the student's professional goals.

986. Practicum in Group Counseling. 5 hours. (Max. 15 hours.)

Prerequisite: ECP 801 or the equivalent and permission of department. (Concurrent enrollment for two quarter sequence with ECP 906.)

Supervised practice in group counseling with opportunities for practical experiences in diverse settings.

988. Advanced Practicum in College Student Affairs. 1-15 hours. (Max. 15 hours.)

Prerequisite: ECP 803 and permission of department. Supervised practice within the student affairs program at the university or other institutions of higher learning. Practical work and observation experience is offered with supervision by members of the student affairs staff. A weekly seminar involving all practicum students is held under the direction of the faculty practicum coordinator.

990. Process of Counseling Supervision. 1-10 hours.

Prerequisite: ECP 981; doctoral student and field experience.

Corequisite: ECP 904 or 906 or 963.

Each student will supervise two master's-level students in ECP 780 (Practicum). The supervisory sessions will be recorded and critiqued in the supervision course. An updated and systematic understanding of the problems of supervision will be accomplished through a review of the literature.

991. Assessment in Counseling Psychology. 5 hours. (Max. 10 hours.)

Prerequisite: ECP 501/701.

The administration and interpretation of psychological measures of intellectual, social, and personality characteristics of individuals. Emphasis is on the use of test results in counseling with individuals and families.

Education (EDU)

Kent L. Gustafson, *Head*
Melvin M. Bowie, *Graduate Coordinator,*
542-4030
(Aderhold Hall)

600. Special Problems in Computer-Based Education. 1-10 hours. (Max. 10 hours.)

Prerequisite: Permission of school.

Specialized training appropriate to the individual, involving intensive investigation and analysis of specific problems of computer-based education.

601. Introduction to Computer-Based Education. 5 hours.

Introduction to practical computer-based applications using a variety of computers and operating systems. A general overview of computer-based education in the areas of instruction, management, testing, and word processing.

602. Techniques of Computer-Based Education. 5 hours.

Prerequisite: EDU 601 or equivalent.

A survey of past, current, and projected uses of computers in education. Includes application of research, administrative, and instructional techniques. An in-depth study of the trends and issues surrounding computer-based education.

605. Preparing Computer-Based Educational Software. 5 hours.

Prerequisite: EDU 601 and 602 or two equivalent courses.

Provides students with skills in planning, designing and producing computer-based instructional software. Using appropriate computer languages and authoring systems, students produce and field-test programs for educational applications.

606. Implementing and Managing Computer-Based Education. 5 hours.

Prerequisite: EDU 601 and 602 and 605 or permission of school.

Perspectives and strategies for implementing and managing computer-based education programs, including planning, acquisition of hardware and software, staff development, program development and management, and evaluation.

699. Research Seminar in Computer-Based Education. 1-10 hours.

Prerequisite: Permission of school.

A seminar for students in the interdisciplinary master's program in computer-based education. Includes critiques of literature and proposed research projects.

746. Internship in Computer-Based Education. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of school.

Under supervision, students design, develop, or implement computer-based instructional or training materials for a specific clientele.

765. Applied Project in Computer-Based Education. 5 hours.

Prerequisite: Permission of school.

Development and implementation of a project related to student's interest or professional responsibility in computer-based education.

805. Theory and Research on Teaching. 5 hours.

Prerequisite: ECE 505/705 or EMS 705 or permission of school.

Theory and research on teaching including teachers' thought processes, students' thought processes, effective teacher behavior, classroom organization, and classroom discourse.

807. Research and Perspectives on Teacher Education. 5 hours.

Research and perspectives on teacher education including history of teacher education, process of becoming a teacher, and approaches to teacher education.

820. Theory and Practice of Educational Change. 5 hours.

Examines individual and collective meanings of educational change, change as a sociopolitical process, and the relationship between theory and practice of educational change in a variety of educational settings.

Educational Leadership (EDL)

C. Thomas Holmes, *Head and Graduate Coordinator, 542-0913 (Aderhold Hall)*

699. Research Seminar in Educational Administration. 1-10 hours.

A seminar dealing with proposed research projects and critiques of the literature in educational administration.

700. Introduction to School Administration. 5 hours.

An introduction to the study of school administration and its contribution to the total school program.

700M. Master's Research. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Research while enrolled for a master's degree under the direction of faculty members.

702. Fundamentals of Curriculum. 5 hours.

Prerequisite: Four courses in education.

Study of the nature, function, and evolution of curricula in education.

Education

705. Problems of Teaching Curriculum and Supervision. 5 hours.

Instructional procedures and evaluation of teaching in terms of student growth.

706. Trends and Issues in Instruction. 5 hours.

Exploration of status of instruction derived from literature, research and practice. Consideration of positions under discussion or debate in the field.

708. Curriculum Planning. 5 hours.

Prerequisite: EDL 702.

Application of principles underlying curriculum improvement and operational strategies with emphasis on the organization of schools and school systems.

709. Fundamentals of Instruction. 5 hours.

Study of basic nature of classroom instruction, key elements of the instructional process, organizing operations, and skills for evaluating and improving instruction.

710. Public School Business Management. 5 hours.

An overview of business functions in school administration with emphasis given to the budgeting process.

712. Leadership for Effective Schools. 5 hours.

Contingency and transformational leadership theories and empirical research on behaviors and characteristics of effective school leaders.

714. (EIT) Design and Development of Computer-Based Instructional Materials. 5 hours.

See EIT 714.

721. Introduction to Supervision. 5 hours.

An introduction to the study of school supervision and its contribution to the total school program.

722. Supervision of Instruction. 5 hours.

A comprehensive study of the basic concepts of supervision and ways and means of improving instruction through supervision.

725. Leadership for Staff Development. 5 hours.

Procedures and patterns for comprehensive planning and systematic implementation of staff improvement programs with emphasis on organization development and management by leadership personnel.

730M. Master's Thesis. 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of department.

765. Applied Project in Educational Leadership. 5 hours.

Prerequisite: Approval of program of study leading to Specialist in Education degree.

Functional study of a problem in administration, curriculum, instruction or supervision related to the student's professional task. Activities extend

over more than one quarter and are based on a proposal for study which must be approved by the faculty.

780. Practicum in Educational Leadership. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

A period of guided learning opportunities allowing students to test principles in the field and to relate theory to practice in actual institutional setting. Activities are approved and supervised by a member of the faculty.

801. Comparative International Curricula. 5 hours.

A comparative study of curricula in elementary secondary and higher education in selected representative types of foreign countries in a contemporary and historical framework.

802. Basic Theories of Educational Administration. 5 hours.

Study of current theories of organization and their application to educational administration.

803. Trends and Issues in Curriculum. 5 hours.

Trends in curriculum design and content and factors which influence curriculum innovations.

804. School Data Processing. 5 hours.

An application of data processing to school problems, such as master scheduling, records, and accounting.

805. Administration of State and Local School Systems. 5 hours.

Fundamentals of state and local public school organization and administration; relation to state and local school systems to federal agencies.

806. Personnel Administration. 5 hours.

Principles and policies governing employer-employee relationships in the public schools.

809. Economics of Education. 5 hours.

Economic forces, including those involved in financing public schools, are examined.

811. School Law. 5 hours.

Legal principles applicable to public education, the legal structure of the public school system; legal problems related to teacher and student personnel.

813. Trends and Issues in School Administration. 5 hours.

Study of selected problems and issues in educational administration.

814. The School as a Social System. 5 hours.

Education viewed as one social system within the matrices of other social systems.

820. Planning and Programing of Educational Facilities. 5 hours.

Planning principles and strategies are reviewed; principles, concepts, processes and practices of planning and programming educational facilities are studied.

821. Educational Policy Analysis. 5 hours.

Prerequisite: EDL 700 or equivalent.
A study of the educational policy process, including school boards, pressure groups and their roles in getting issues to government. Intended to acquaint students with educational policy research methodology.

823. Trends and Issues in Supervision. 5 hours.

Prerequisite: Two courses in supervision and permission of department.
Identification and investigation of problems in supervision; research and experimentation in the use of supervisory procedures.

824. Group Development. 5 hours.

Prerequisite: Permission of department.
Group process and problems of group work, improving behavioral skills in group leadership and membership roles, and improving group planning and execution of educational programs.

839. School-Community Relations. 5 hours.

This course is designed to create awareness among school administrators of educational problems which arise in school desegregation and how to cope with them effectively.

841. Administration and Supervision of Special Education. 5 hours.

Prerequisite: Permission of department.
Study of the needs of exceptional children with particular emphasis on planning and implementing comprehensive special education programs.

887. Internship in the Administration and Supervision of Special Education. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.
Supervised participation in coordinating a public school or residential school program of special education.

899. Research Seminar in Educational Leadership. 1-10 hours. (Max. 10 hours.)

Each doctoral candidate is expected to attend a seminar during each quarter of residence. A minimum of three quarter hours of credit is required.

900. Curriculum Development, K-12. 5 hours.

Analyses of existing theoretical models for curriculum development, the generation of new models, and the assessment of the effectiveness of the models for evaluating and implementing proposals for program change and for the determination of additional program needs.

900D. Doctoral Research. 1-15 hours. (Max. 60 hours.)

Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

901. Instructional Theory. 5 hours.

Prerequisite: EDL 709.
Advanced seminar for students to interpret existing theory and develop new theory. Study of research on present alternatives, appropriate developments and process of creating instructional theories.

904. Curriculum Theory. 5 hours.

Prerequisite: Two courses in curriculum and permission of department.
The identification, analysis, and synthesis of knowledge basic to the development of curriculum theory with consideration for the design of curriculum strategies.

917. Seminar in School Law. 5 hours.

Prerequisite: EDL 811 or permission of department.
Provides an opportunity for an in-depth study of specific areas of school law mutually agreed upon by the student and the instructor.

922. Strategic Planning in Educational Administration. 5 hours.

Prerequisite: EDL 700.
A study of long-term planning activities for educational systems including the development of objectives, allocation of resources used to attain objectives, and the planning of policies that are to govern the acquisition, use, and disposition of the resources.

925. Supervision Theory. 5 hours.

Prerequisite: Two courses in supervision and permission of department.
Interdisciplinary study of forces impinging upon education and the implications of these findings for supervision.

929. Politics of Education. 5 hours.

Examines local, state, federal and nongovernmental political forces operating on the public schools.

930D. Doctoral Dissertation. 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of department.

935. Educational Resource Management. 5 hours.

Study of the principles, methods and practices of systematic approaches to educational resource management with particular emphasis on the sets of processes involved in program budgeting and management by objectives in educational administration.

Education

960. Educational Research in Educational Leadership. 1-15 hours. (Max. 15 hours.)

Independent investigation to provide advanced students with opportunities to probe areas of specialized interests or need and to encourage exploration by doctoral students of potential topics for dissertation research.

962. Directed Doctoral Readings. 1-5 hours. (Max. 15 hours.)

Prerequisite: Permission of department.
Specialized study while enrolled for a doctoral degree under the direction of a major professor.

963. Critique of Educational Literature in Educational Leadership. 5 hours.

Critical interpretation and evaluation of research and theoretical writing in the field of educational administration.

970. Internship in Educational Leadership. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.
A study-work program; class or conference study of problems encountered by the intern with remainder of time in application of principles to regular job.

Educational Psychology and Measurement and Educational Research

Carl J Huberty, *Head*
Joseph M. Wisenbaker, *Graduate Coordinator, 542-4257*
(Aderhold Hall)

The department's primary missions are to prepare highly skilled professionals to serve in academe and other settings, and to enhance the theoretical and technical training of graduate students. For its own graduate students, the department provides preparation to those who would serve as school psychologists, as specialists in gifted/creative education, cognition and development, and as evaluation and research methodologists. Students in programs outside the department are provided with general training in learning and development and in quantitative and qualitative research methods.

The department offers programs of study leading to MEd, MA, EdS, EdD and PhD degrees. Program areas include applied cognition and development, gifted/creative education, research design in education,

and school psychology. The department also includes the Torrance Center for Creative Studies and the School Psychology clinic.

The school psychology programs meet the applicable standards of the Georgia Department of Education, the National Association of School Psychologists, and the American Psychological Association.

Courses are listed below under the EPY and ERS headings.

Educational Psychology and Measurement (EPY)

600. Special Problems in Educational Psychology. 1-10 hours. (Max. 20 hours.)

May be independent study with variable credit with permission of department or assembled class especially developed to study some problem or set of problems in educational psychology with specified credit and prerequisites.

601. Psychology of Early Childhood. 5 hours.

Prerequisite: EPY 204 or equivalent.
Interests, needs, and abilities of children; evaluation of their total development.

624. Personality Theory Applied to Education. 5 hours.

Prerequisite: Four courses in education.
Study of the theories of personality and motivation that have application in educational settings. The focus upon the interpretation of children's behavior from a theoretical view will comprise most of the course offering.

625. Group Dynamics. 5 hours.

Prerequisite: EPY 204 or PSY 101 or equivalent.
Examination of major ideas about dynamics of group behavior and their educational implication. Laboratory in T-Group methods, creative problem-solving groups, and the conduct of experiments in group interaction.

680. Foundations of Cognition for Education. 5 hours.

Prerequisite: EPY 204 or PSY 101 or equivalent.
Cognitive representational systems and cognitive processes are discussed. "Cognitive analyses" of school tasks are performed. The course emphasizes application for cognitive psychology to such school domains as reading, writing, speaking, memory, inductive and deductive reasoning, and problem-solving.

699. Research Seminar in Educational Psychology. 1-10 hours. (Max. 10 hours.)

A seminar for master's level students in educational psychology dealing with proposed research projects and critiques of the literature.

700. Educational Tests and Measurements. 5 hours.

Prerequisite: Four courses in education. Nature and function of measurement in education. Teacher-made and standardized tests and scales. Introductory statistical concepts of measurement.

700M. Master's Research. 1-15 hours. (Max. 30 hours.)

Prerequisite: Permission of department. Research while enrolled for a master's degree under the direction of faculty members.

710. Advanced Adolescent Psychology. 5 hours.

Evaluation of adolescent development; review of research related to the adolescent; and assessment of theoretical positions in the psychology of the adolescent.

711. Characteristics of Gifted Children and Youth. 5 hours.

Prerequisite: EPY 204 or equivalent. Psychological characteristics of gifted children and youth; including studies of the lives of eminent persons, empirical studies of gifted children and youth today, and models for identifying gifted children.

715. Advanced Educational Psychology. 5 hours.

Applications of the scientific findings of psychology to the more complex problems of the educative process.

723. Strategies and Materials for the Gifted. 5 hours.

Prerequisite: EPY 511/711 or permission of department. Teaching strategies and related instructional materials for the gifted.

725. Program and Curriculum Development for the Gifted. 5 hours.

Prerequisite: EPY 511/711. Program planning for gifted students including curriculum inventory and development, program models, and evaluation.

726. Systematic Observation of Interpersonal Behavior. 5 hours.

Prerequisite: EPY 204 or course in social psychology. Observation and measurement of behavior in educational groups, such as classroom, playground, and therapy groups and administrative and staff groups.

730M. Master's Thesis. 1-15 hours. (Max. 45 hours.)

Prerequisite: Permission of department.

765. Applied Project in Educational Psychology. 5 hours.

Prerequisite: ERS 401/601, 411/611, and 812. Functional study of a topic or problem in educational psychology, measurement, or research design.

780. Metacognitive Strategies and Motivation in the Classroom. 5 hours.

Prerequisite: EPY 204 or senior-level psychology course. Development and instruction of metacognitive strategies in reading, math, and memory. The effects of motivation on strategy use are examined. Strategy Instruction in the classroom is discussed.

800. Educational Measurement Theory. 5 hours.

Prerequisite: [EPY 500/700 and ERS 813] or equivalents. Theoretical basis of classical test theory: statistical treatment of reliability and validity; emphasis on application and interpretation of results through computer analyses.

802. Theories of Child Development. 5 hours.

Prerequisite: EPY 401/601 or equivalent. A survey of recent literature in the field of child development with special emphasis on early childhood experiences at home and at school, peer relationships, socio-cultural influences, and determinants self-concepts.

816. Problems in Educational Psychology. 5-20 hours. (Max. 20 hours.)

Prerequisite: EPY 204. Specialized training in selected areas of educational psychology; e.g., individual differences, motivation, evaluation procedures, creativity, pre-school testing, etc.

817. (ERD) Psychology of Reading. 5 hours.

See ERD 817.

818. Psychology of Classroom Learning. 5 hours.

Prerequisite: EPY 680 or equivalent. Analytical study of learning activities in the classroom, with reference to the learning of school subjects. The focus is on the learning process. Theories and principles of learning are related to classroom situations.

819. Cognitive Processes and Education. 5 hours.

Prerequisite: EPY 680 or equivalent. Theories of cognitive organization and functioning, verbal learning, concept formation, thinking and problem-solving in relation to educational programs and teaching methods and materials.

Education

820. Learning Difficulties of Gifted Children and Youth. 5 hours.

Prerequisite: A course in learning theory or classroom learning.
Gifted students with special needs.

822. Theories of Creativity. 5 hours.

Prerequisite: Permission of department.
Theory and research concerned with the creative process, creative problem solving, creative thinking abilities and their measurement, the creative personality, and environmental and classroom conditions that facilitate creative functioning and development.

824. Creativity: Instructional Procedure and Problem-Solving Processes. 5 hours.

Prerequisite: Permission of department.
Basic theory, demonstration, and practice of creative thinking techniques.

830. Introduction to School Psychology. 5 hours.

Prerequisite: Ten quarter hours in educational psychology.
History, functions, duties, and responsibilities of psychologists in the schools.

831. Applied Behavior Analysis I. 5 hours.

Prerequisite: Admission to graduate work in psychology or allied fields.
Emphasizes the theoretical and research underpinnings for the application of behavioral techniques in the assessment of difficulties in the classroom. Field experiences with a variety of observational techniques.

832. Applied Behavior Analysis II. 5 hours.

Prerequisite: EPY 831.
Emphasis on the application of assessment procedures in the development of behaviorally-oriented intervention strategies. Field experience in the classroom is integrated with didactic material.

833. Consultation Processes in Educational Settings. 5 hours.

Prerequisite: EPY 910 and 911 or permission of department.
The course focuses on the problems inherent in interprofessional communication, particularly communication between school psychologists and teaching professionals.

834. Child Neuropsychology. 5 hours.

Prerequisite: EPY 910, PSY 480/680 or permission of department.
Theory, techniques and issues of neuropsychological assessment with the developmentally disabled or learning disabled student will be covered. Primary emphasis will be on understanding the theory, issues and limitations of neuropsychological assessment with school-age children.

882. (PSY/LIN) Psycholinguistics. 5 hours. See PSY 882.

899. Research Seminar in Educational Psychology. 1-10 hours. (Max. 10 hours.)

Each doctoral candidate is expected to attend a seminar during each quarter of residence. A minimum of three quarter hours of credit is required.

900D. Doctoral Research. 1-15 hours. (Max. 30 hours.)

Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

902. Construction of Educational Measuring Instruments. 5 hours.

Prerequisite: EPY 500/700 and ERS 812.
Design, construction, and evaluation of affective and cognitive psychometric instruments. Traditional and contemporary test analysis procedures and questionnaire design methods will be examined.

904. Problems in the Evaluation of Instruction. 5 hours.

Interpretation of the results secured from evaluative techniques.

906. Assessment of Gifted Children and Youth. 5 hours.

Prerequisite: EPY 500/700.
Measurement of intellectual and creative abilities for identification and evaluation, with a focus on administering and scoring the *Torrance Tests of Creative Thinking*; assessment of abilities in special populations of the gifted.

910. Individual Clinical Assessment I. 5 hours.

Prerequisite: EPY 500/700 or equivalent.
Administration and interpretation of the most commonly used intelligence tests with school-age children. Emphasis is on developing an understanding of basic theoretical assumptions associated with intellectual assessment as part of the comprehensive psychoeducational evaluation. Practicum experience required as well as experience in communicating results of evaluation.

911. Individual Clinical Assessment II. 5 hours.

Prerequisite: EPY 500/700 or equivalent.
Administration and interpretation of the most commonly used psychoeducational assessment instruments including measures of cognitive ability, achievement, perceptual motor ability, adaptive behavior and social-emotional functionings. Emphasis will be on building clinical skill as well as on understanding legal and professional issues associated with the use of these assessment procedures.

912. Social-Emotional Aspects of Educational Diagnosis. 5 hours.

Prerequisite: EPY 910 and 911.

The administration, scoring and interpretation of test materials designed to diagnose social and emotional adjustment problems in school children. Emphasis is given to the effects of social and emotional adjustment on academic achievement.

913. Individual Preschool Testing. 5 hours.

Prerequisite: EPY 910 or equivalent.

Administration, scoring, and interpretation of major preschool instruments; the Bayley and McCarthy Scales, and various procedures for assessing perceptual-motor development, social-emotional development, and academic readiness. Special emphasis is placed on the educational implications of test findings.

930D. Doctoral Dissertation. 1-15 hours. (Max. 45 hours.)

Prerequisite: Permission of department.

960. Research in Educational Psychology.

1-15 hours. (Max. 20 hours.)

Individual research. Close supervision will be maintained by a member of the faculty.

963. Critique of Educational Literature in Educational Psychology. 5 hours.

Prerequisite: ERS 401/601.

Critical interpretation and evaluation of research and theoretical writing in educational psychology.

970. Internship in Educational Psychology.

1-15 hours. (Max. 20 hours.)

Prerequisite: Permission of department.

A study-work program; class or conference study of problems encountered by the intern with remainder of time in application of principles to regular job.

973, 974, 975. Internship in School Psychology. 1-15 hours each. (Max. 45 hours.)

980. Practicum in Educational Psychology.

1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Supervised practice in approved institutional setting. Close supervision will be maintained by a member of the faculty.

983, 984. Practicum in School Psychology.

1-15 hours each. (Max. 45 hours.)

Educational Research (ERS)

601. Methods of Research in Education. 5 hours.

Exploration of diverse research approaches used in behavioral science settings, including critical review and interpretation of published research.

611. Applied Statistical Methods in Education. 5 hours.

Prerequisite: ERS 401/601 or equivalent.

Techniques for describing and summarizing data for educational research studies. Applications of the standard normal distribution and the use and interpretations of standard scores. Inferential statistics for one and two population studies including means, proportions, and correlations.

799. Qualitative Research Methods in Education. 5 hours.

Prerequisite: One graduate course in research or permission of department.

Theories, methodologies, and findings are examined from qualitative educational research: ethnography, case study, life history, document analysis, and interview studies. The relationships between qualitative research and other investigative traditions are emphasized. Techniques for data collection, analysis, and presentation are studied through the design and implementation of a research project.

802. Planning Educational Research. 5 hours.

Prerequisite: ERS 411/611 and 812, their equivalents, or permission of department.

Designed for students who plan to engage in a research project as a part of degree requirements. Deals with research logic, research strategies, research models, and research tools.

809. Advanced Qualitative Analysis in Educational Research. 5 hours.

Prerequisite: ERS 799.

Examination of conceptual, theoretical, methodological, and empirical applications of qualitative data in educational research, e.g., observational field notes, interview transcripts, documents and other participant artifacts, and film, tape, and photograph records. Procedures for the analysis and interpretation of qualitative data are presented, practiced, and evaluated.

812. Applied Analysis of Variance Techniques. 5 hours.

Prerequisite: ERS 411/611 or equivalent.

Principles of experimental design and the analysis of data from experiments including orthogonal analysis of variance for single and multifactor designs, randomized block, repeated measures, and mixed models. Computer applications and the reporting of results using APA style are emphasized.

813. Applied Correlation and Regression Methods in Education. 5 hours.

Prerequisite: ERS 812 or equivalent.

Design and analysis of nonexperimental and quasi-experimental research studies including simple and multiple regression techniques, nonorthogonal analysis of variance, correlation techniques, and analysis of covariance.

820. Multivariate Methods in Education. 5 hours.

Prerequisite: ERS 813 or equivalent.

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Discriminant analysis, multivariate analysis of variance, canonical correlation analysis, principal component analysis, and cluster analysis. Emphasis is on relating educational research questions to methods, conducting computer analyses, interpreting computer printouts, and critiquing analysis reports.

900D. Doctoral Research. 1-15 hours. (Max. 30 hours.)

Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

930D. Doctoral Dissertation. 1-15 hours. (Max. 45 hours.)

Prerequisite: Permission of department.

960. Educational Research in Educational Research. 1-15 hours. (Max. 20 hours.)

Individual research. Close supervision will be maintained by a member of the faculty.

970, 971, 972. Internship in Educational Research. 5 hours each.

Prerequisite: ERS 813 or equivalent.
Three quarters of internship/practicum experiences are offered to familiarize students with use of the computer in data analysis. The focus of the experiences is on becoming acquainted with the use of SPSS, SAS, and BMDP computer program packages and interpretation of printouts. Some basic computer language skills are developed. Also, experience is given in consulting with other graduate students on data processing problems.

Elementary Education

K. Denise Glynn, *Head*
Brenda H. Manning, *Graduate Coordinator*,
542-4244
(Aderhold Hall)

Early Childhood Education (ECE)

600. Special Problems in Early Childhood Education. 1-10 hours. (Max. 10 hours.)

Selected students are permitted to secure specialized training appropriate to the needs of the individual. The students' project may involve intensive library investigation or the collection and analysis of original data pertinent to a given problem.

642. (CFD) Organization of Early Childhood Classrooms. 5 hours.

Prerequisite: EPY 403, SPE 300 or 700 and a course in child development.

Investigation of early childhood education principles and practices which are germane to organizing and operating the classroom for learners in Kindergarten through Grade 4. Students will acquire knowledge of important theoretical approaches in this area as well as practical skills applicable to their work with young children.

699. Research Seminar in Early Childhood Education. 1-10 hours. (Max. 10 hours.)

A seminar for master's or specialist level students in education dealing with proposed research projects and critiques of the literature.

700. Early Childhood Education. 5 hours.

Study of facilities, equipment, organization, and administration of curricula in early childhood education.

701. Current Trends in Early Childhood Education. 5 hours.

Interdisciplinary factors and research in the education of children ages three to eight.

705. Problems of Teaching in Early Childhood Education. 5 hours.

Prerequisite: Four courses in education.
Instructional procedures and evaluation in terms of student growth.

711. The Educational Role of Play in Early Childhood Education. 5 hours.

Prerequisite: Upper division course in child development or psychology.
An examination of the cognitive and affective aspects of the play of children in Grades 1-4. Techniques for facilitating children's play will be stressed.

746. Internship in Teaching Early Childhood Education. 1-15 hours.

Prerequisite: Permission of department.
Supervised practicum in Grades K-4.

765. Applied Project in Early Childhood Education. 5 hours.

Functional study of a topic or problem in early childhood education significantly related to the student's professional task. Required of all EdS students in early childhood education.

802. (EMS) Self-Instruction for Classroom Process. 5 hours.

Prerequisite: ECE 500/700 or EMS 708 or permission of department.
Theoretical and research backgrounds of self-instruction (SI) to improve memory, comprehension, problem-solving, and behavioral self-control of both elementary (K-8) teachers and students. Classroom applications of SI from the perspective of teacher introspection, classroom strategies, and management.

899. Research Seminar in Early Childhood Education. 1-10 hours. (Max. 20 hours.)
Doctoral seminars.

900D. Doctoral Research. 1-15 hours. (Max. 20 hours.)

Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

930D. Doctoral Dissertation. 1-15 hours. (Max. 30 hours.)

Prerequisite: Permission of department.

960. Educational Research in Early Childhood Education. 1-15 hours. (Max. 15 hours.)

Prerequisite: Advanced graduate standing in early childhood education and permission of department.

Independent research under direction of faculty.

963. Critique of Educational Literature in Early Childhood Education. 5 hours. (Max. 10 hours.)

Prerequisite: ERS 401/601.

Critical interpretation and evaluation of research and theoretical writing in early childhood education. Each student will make critical reviews of significant education literature in his/her specialization.

Elementary Education (EEL)

709. Teaching Styles in the Elementary Classroom. 5 hours.

Prerequisite: ECE 302 or EPY 204 or an equivalent upper division level course.

This course will examine the theoretical foundation of selected teaching styles and will also concentrate on planning and developing teaching strategies which reflect these styles.

899. Research Seminar in Elementary Education. 1-10 hours. (Max. 20 hours.)

Doctoral seminars.

900D. Doctoral Research. 1-15 hours. (Max. 20 hours.)

Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

930D. Doctoral Dissertation. 1-15 hours. (Max. 30 hours.)

Prerequisite: Permission of department.

960. Educational Research in Elementary Education. 1-15 hours. (Max. 15 hours.)

Prerequisite: Four courses in education and advanced graduate standing.

963. Critique of Education Literature in Elementary Education. 5 hours. (Max. 10 hours.)

Prerequisite: ERS 401/601.

Critical interpretation and evaluation of research and theoretical writing in the field of elementary education. Each student will make critical reviews of significant education literature in his/her specialization.

Middle School Education (EMS)

600. Special Problems in Middle School Education. 1-5 hours. (Max. 10 hours.)

Independent study of educational problems. Student confers with instructor who is in field.

699. Research Seminar in Middle School Education. 5 hours.

Prerequisite: Admission to EdS program in Middle School Education.

Exploration of literature and research relating to the middle school. Culminates in preparation of prospectus for the EMS 765 applied project.

703. The Middle School. 5 hours.

Prerequisite: One basic course in curriculum.

Will study in depth research supporting the concept of a separate organization and program for youngsters 10 to 14 years of age, types of curricular plans for the middle school, aspects of teaching in the middle school, and the organization and staff of the middle school.

705. Problems of Teaching in the Middle School. 5 hours.

Use of problem-solving techniques to identify problems, analyze causes, and develop a repertoire of strategies for problems of middle school instructional personnel.

708. Curriculum Planning for the Middle School. 5 hours.

A study of the process of curriculum development based on the unique nature of the middle school learner and content appropriate to his physical, intellectual, and emotional development. A variety of evaluative techniques will also be examined.

709. Instructional Strategies for the Middle School. 5 hours.

Prerequisite: EMS 503/703 and admission to graduate school.

Instructional strategies to meet unique needs of early adolescents, curricular approaches as related to instructional strategies and program development, major curricular models, and research on instructional strategies for middle school.

710. Evaluation of the Middle School. 5 hours.

Prerequisite: EMS 503/703 and admission to graduate school.

Course focuses on: needs for evaluation of middle school, components of evaluation, types of appropriate evaluation techniques, procedures, and

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utilization of research data for improving middle schools.

746. Internship in Middle School. 1-15 hours. Prerequisite: T-4 certification or permission of department.

Supervised professional laboratory experience in a selected middle school.

765. Applied Project in Middle School Education. 5 hours.

Prerequisite: EMS 699.

Functional study and reporting of a research problem in middle school education.

802. (ECE) Self-Instruction for Classroom Process. 5 hours.

See ECE 802.

903. Young Adolescents and Schools. 5 hours. Prerequisite: EMS 503/703.

Adolescence as a historical and cultural concept, research on middle school practices and students' perspectives of schooling, and adolescents' experiences in school and society.

Foundations and Philosophy of Education

Foundations of Education (EFN)

701. Comparative and International Education. 5 hours.

Theory, policy, and practice in selected educational systems. Examines data and models from educational systems around the world. Critiques important themes: race, ethnicity, class, and gender; the role of education in national development; cross-cultural research; and major developments in the methodology of comparative education.

702. History of Education in the United States to 1865. 5 hours.

United States educational history from the birth of Colonial America through the Civil War.

703. History of Education in the United States Since 1865. 5 hours.

United States educational history from the end of the Civil War to the present.

710. Gender and Education. 5 hours.

Issues, research, theory, and policy on gender and education. Gender effects in socialization, schooling, and lifelong learning are analyzed for their implications for individuals, society, and culture.

711. Race and Education: The African-American Educational Experience 1865 to Present. 5 hours.

African-American educational experience since 1865. Covers the history of racial discrimination and the ongoing struggle for equal opportunity in American education. Examines Black America's educational leadership, philosophies, tactical disputes and schools. Includes case studies of the desegregation process, and the relationship between white reformers and the Black community.

713. Education as Democracy. 5 hours.

Four lectures and one 2-hour lab period. Conceptions of public education congruent with principles of democratic society. Topics include foundational works, constitutional interpretations, traditional canons, multi-culturalism, and post-modernism/critical theory. Attention is given to situating current education reforms in public schools according to varying perspectives of American democracy. Supervised field experience is included.

720. Multicultural Education in the United States. 5 hours.

Investigation of racial and cultural identity; ways oppression appears in students' lives and schooling policies and practices; connections between gender/feminist and sexuality issues and education; relationships of empowerment to social changes, assessment, and evaluation; and associations among knowledge construction, culture, and the learning of school disciplines in the U.S.

810. Research in Educational History of the United States. 5 hours.

Research methods in the history of education.

Educational Philosophy (EPH)

801. Philosophy of Education. 5 hours.

A critical examination of philosophical questions concerning education.

804. Pragmatism and Education. 5 hours.

A critical examination of the educational writings of William James, Charles S. Pierce, and John Dewey.

806. Social and Political Philosophies of Education. 5 hours.

A critical study of social and political philosophies of education, such as those of communism, fascism, and various types of democracy.

807. Ethics and Education. 5 hours.

Theories of value and evaluation, ethical discourse and argument, and other uses of ethics in educational writings.

808. Contemporary Philosophies of Education. 5 hours.

A study of recent development in the field as revealed in current literature.

Health and Human Performance

Within the School, graduate study is offered in the following areas: exercise science (MEd, EdD, PhD), health promotion and behavior (MEd, PhD), physical education (MEd, EdS, EdD, PhD), and recreation and leisure studies (MEd, EdD). Students may pursue a master's degree with the thesis option through the Master of Arts in education degree.

Exercise Science (EXS)

Kirk J. Cureton, *Head*
 Ted A. Baumgartner, *Graduate
 Coordinator, 542-4424*
 (Ramsey Center)

600. Problems in Exercise Science. 1-10 hours. (Max. 10 hours.)

Prerequisite: Permission of department.
 Independent study in exercise science.

630. Exercise Epidemiology. 5 hours.

Prerequisite: CB 220-220L and 221-221L; or PHR 349 and 350; or permission of department.
 Health-related aspects of exercise, physical activity, and physical fitness from the perspective of epidemiology. Biological mechanisms for health adaptations to physical activity and the behavioral determinants of exercise participation are addressed.

631. Physical Fitness Programs. 5 hours.

Prerequisite: EXS 463-463L or permission of department.

A study of physical fitness programs for youth, adults, and special populations. Topics include program goals and objectives, principles and methods of physical fitness development and testing, evaluation of existing programs, and administrative and programming considerations.

700M. Master's Research. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.
 Research while enrolled for a master's degree under the direction of faculty members.

714. Current Problems in Exercise Science. 1-5 hours. (Max. 10 hours.)

Intensive study of a timely problem in exercise science.

715. (HPB/PES/REC) Research Methods in Health and Human Performance. 5 hours.

The application of research to exercise science, health promotion and behavior, physical education, and recreation and leisure studies with experience in developing techniques of gathering, analyzing, and reporting data.

716. Advanced Measurement in Exercise Science. 5 hours.

Prerequisite: EXS 383 or equivalent.
 Current tests in exercise science and physical education; the principles of test construction relative to physical performance, knowledge, and behavior tests; tools for evaluation of tests and the use of laboratory instruments in performance measurement.

718. Measuring Affective Behaviors. 5 hours.

Prerequisite: EXS 383 or 716 or EPY 500/700.
 Literature on psychological measurement is reviewed with a focus on construction of attitude scales, self-concept and body image measuring instruments, and other affective behavior tests.

720. Sport Psychology. 5 hours.

Psychological limitations to athletic performance, and the study and application of psychological interventions for enhancing sport success. Ethical issues regarding the delivery of psychological services to athletes are examined.

730M. Master's Thesis. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

731-731L. Adult Fitness and Cardiac Rehabilitation. 5 hours.

Prerequisite: EXS 463-463L.
 This course provides knowledge and skills required for conducting and administering adult fitness, industrial fitness, and cardiac rehabilitation programs. Practical experience is obtained working with an adult fitness program and assisting with physical fitness assessment, exercise stress testing and exercise prescription.

732. Physical Activity for Older Adults. 5 hours. Prerequisite: EXS 731-731L or GNT 400/600.

The course focuses on the physical, social, and psychological effects of aging in relation to physical activity and exercise. The course provides knowledge, skills and practical experience in conducting activity programs for older adults.

733-733L. Metabolic and Cardiorespiratory Aspects of Exercise. 5 hours.

Prerequisite: EXS 463-463L or equivalent.
 Metabolic and cardiovascular-respiratory responses to exercise and adaptations to training, with emphasis on applications to human physical performance and fitness.

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734-734L. Exercise Psychology. 5 hours.

Prerequisite: HPB 792 or permission of department.

Relation of physical activity and physical fitness to stress and mental health; explanatory models of exercise patterns, exercise psychology assessment experiences.

735. Biomechanics of Motor Skills. 5 hours.

Prerequisite: EXS 360-360L and 715 or equivalent. Description and analysis of performance of motor skills based on laws and principles of mechanics.

780. Practicum in Exercise Science. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Supervised participation in programs or research in exercise science.

830-830L. Advanced Topics in Exercise Physiology. 5 hours.

Prerequisite: EXS 733-733L.

Advanced study through reading, discussion and laboratory investigation of special topics in exercise physiology.

831. Biochemistry of Exercise. 5 hours.

Prerequisite: EXS 733-733L and BCH 402/602.

Advanced study through reading and discussion of current topics of investigation in the biochemistry of exercise including contractile protein energetics, mechanisms regulating chemical energy stores and substrate fluxes, and regulation of protein metabolism.

832. Laboratory Techniques in Exercise Biochemistry. 2 hours.

Prerequisite: EXS 733-733L and BCH 402/602.

Theoretical basis for some of the techniques commonly used to quantify acute exercise and chronic training and to give "hands-on" experience in performing the procedures using rats as laboratory animals.

834. Seminar in Exercise Psychology. 1-15 hours. (Max. 15 hours.)

Prerequisite: HPB 792 and EXS 734-734L and PSY 691 or permission of department.

Advanced study through reading and discussion of current topics of investigation in the psychological and behavioral aspects of exercise and health-related physical fitness.

835. Methods in Biomechanics. 1-5 hours. (Max. 12 hours.)

Prerequisite: [(EXS 735, PCS 127-127L and MAT 254) or equivalent] or permission of department. Methods in human movement biomechanics including electromyography, motion measurement, kinetic analyses, modeling and anthropometry.

841. Neuromuscular Mechanisms in Exercise. 5 hours.

Prerequisite: EXS 733-733L and PHR 649 or VPH 609-609L.

Advanced study through reading and discussion of current topics of investigation in the relationship between the nervous system and skeletal muscle as it pertains to exercise and training with emphasis on neural regulation of muscle phenotype and neural regulation of muscle force and shortening velocity.

842. Oxygen Transport from Lung to Muscle During Exercise. 5 hours.

Prerequisite: EXS 733-733L and VPH 609-609L or PHR 650.

Advanced study through reading and discussion of the mechanisms that regulate oxygen transport from the lung to muscle mitochondria at rest and during exercise. The focus will be on potential limiting factors in the transport system under different exercise stresses and the influence of training on these limiting steps.

899. Research Seminar in Exercise Science. 1-15 hours. (Max. 15 hours.)

Methods and current research in exercise science.

900D. Doctoral Research. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Research while enrolled for a doctoral degree under the direction of faculty members.

917. Principles of Measuring Motor Performance. 5 hours.

Prerequisite: EXS 716 and ERS 712 or equivalent.

An in-depth treatment of reliability and validity techniques applicable to motor performance data; measurement theory and problems related to motor performance data; applications of advanced statistical techniques to measurement situations in exercise science.

930D. Doctoral Dissertation. 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of department.

963. Directed Reading in Exercise Science. 1-10 hours. (Max. 10 hours.)

Critical evaluation of reported research on a specialized topic in exercise science.

970. Internship in Exercise Science. 5-10 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Supervised practice in an approved institutional setting.

Health Promotion and Behavior (HPB)

David M. DeJoy, *Head*
Stuart W. Fors, *Graduate*
Coordinator, 542-4365
(*Ramsey Center*)

600. Special Problems in Health Promotion and Behavior. 1-10 hours.

Prerequisite: Permission of department.
Independent study of selected topics.

604. Use of Epidemiologic Data in Health Promotion and Behavior. 5 hours.

The systematic study of the etiology of various health problems with focus on using this knowledge for planning preventive programs. The principles, uses, techniques, and language of epidemiology and epidemiological method are presented. Students will learn and use principles of data collection, tabulation, analysis and presentation.

633. (SPC) Health Communication. 5 hours.

See SPC 633.

642. Health Education in Early Childhood Education. 3-5 hours.

Health education content, methods and resources for Early Childhood teachers. Emphasis is on comprehensive school health education programs.

645. Industrial Safety. 5 hours.

Introduction to the specific areas and the broad scope in methods, materials, and problems in Industrial Safety programming with special emphasis on organization and implementation of accident prevention and control techniques.

700M. Master's Research. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

706. Educational Strategies in Human Sexuality. 5 hours.

Theory and practice of sexuality education; basic issues, philosophy and guiding principles; legal implications; needs, justification and objectives; curriculum critique for school and community programs; content knowledge, resource materials; acceptable methods to approach controversial topics.

707. Planning and Evaluation in Health Education and Health Promotion. 5 hours.

Factors and processes related to planning, implementation and evaluation of health education and health promotion programs in a variety of community settings.

711. Organization and Administration of Health Programs. 5 hours.

Prerequisite: HPB 707.

The organization and administration of the total health program is presented. Topics emphasized include organizational structure, leadership, planning and goal setting, decision making, supervision, motivation, and communication.

715. (EXS/PES/REC) Research Methods in Health and Human Performance. 5 hours.

See EXS 715.

716. Special Topics in Health Promotion and Behavior. 5 hours.

Emphasis on the etiology of contemporary health problems and the role of parents, teachers, administrators, and the community in meeting and preventing health problems. Examples include: sexually transmitted diseases, smoking, violence, health of the elderly, women's health, school health issues.

717. Aging and Health. 5 hours.

Health promotion, risk reduction, health maintenance, and health problems of the elderly, from an individual, community, cultural, and policy perspective.

720. Women in Health and Illness. 5 hours.

Health and illness concerns of women throughout the life cycle, including the social, political, and cultural contexts of health and health care.

721. The Effects of Drug Use and Abuse. 5 hours.

Social, moral, psychological, and physiological causes and effects of drug use and abuse. Individual, family and community factors related to prevention and treatment.

725. Educational Strategies in Health Promotion and Risk Reduction Programs. 5 hours.

Prerequisite: HPB 707.

Strategies and techniques for conducting health promotion and risk reduction programs in educational, community, and corporate settings. Training is provided in assessing behavioral risk factors, developing program content, selecting teaching methods to attain instructional goals, and optimizing program success.

730M. Master's Thesis. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

737. Social Marketing of Health: Theory and Process. 5 hours.

Prerequisite: HPB 707.

Social marketing theory and process applied to the marketing of health concepts, attitudes, and behaviors in community and corporate settings.

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740. Worksite Health Promotion. 5 hours.

Prerequisite: Undergraduate degree in health or safety education or permission of department.

This course provides detailed analysis of the interaction between human health and the work environment. Consideration is given to both physical and psychosocial work-place stressors, and to the design, implementation, and evaluation of prevention and health promotion programs in business and industry.

746. Internship in Teaching Health Education. 1-15 hours.

Prerequisite: Permission of department.

In-school experience for the graduate student who is completing initial teacher certification requirements in health education.

756. Field Experience in Health Promotion and Behavior. 5-10 hours. (Max. 10 hours.)

Prerequisite: Permission of department.

Practical experience in community or corporate health promotion/education through placement in an appropriate health agency, hospital, or worksite setting.

765. Applied Project in Health Promotion and Behavior. 5 hours.

Prerequisite: Permission of department.

Functional study of a topic that is related to the student's career objectives.

770. Analysis and Prevention of Accidents and Violence. 5 hours.

Prerequisite: HPB 404/604 or permission of department.

Comprehensive analysis of the causes and consequences of accidents and violence, with emphasis on prevention research and program development.

792. Health Behavior. 5 hours.

Detailed examination of the role of behavioral factors in the maintenance of health and the prevention of illness, injury, and dysfunction.

800. Directed Study in Health Promotion and Behavior. 1-10 hours. (Max. 10 hours.)

Prerequisite: Permission of department.

Individual study under the direction of a department faculty member.

841. Human Ecology of Health and Illness. 5 hours.

Prerequisite: [HPB 404/604 and 707 and 792] or permission of department.

Major causes of premature disability and death and the relationship of health-related behavior to these problems. Challenges related to hard-to-reach populations; social isolation, economics, health policy, and lack of trust.

842. Theory and Research in Health Behavior. 5 hours.

Prerequisite: HPB 841 or permission of department.

Theoretical and conceptual foundations of health-related behavior. The development, change, and maintenance of these behaviors from a bio-behavioral perspective; needs and concerns of under-served and under-represented segments of the population.

843. Intervention and Evaluation of Health Promotion and Disease Prevention. 5 hours.

Prerequisite: HPB 842 or permission of department.

Intervention and evaluation strategies in health promotion and disease prevention at the individual, group and community levels.

899. Research Seminar in Health Promotion and Behavior. 1-5 hours. (Max. 10 hours.)

Literature in health promotion and education, health behavior, health communications, and instructional design; research design; data analysis; and development of research proposals.

900D. Doctoral Research. 1-15 hours. (Max. 30 hours.)

Prerequisite: Permission of department.

Research while enrolled for a doctoral degree under the direction of faculty members.

930D. Doctoral Dissertation. 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of department.

963. Critique of Literature in Health Promotion and Behavior. 5 hours.

Prerequisite: Permission of department.

Critical interpretation and evaluation of research and theoretical writing.

Physical Education and Sport Studies (PES)

P. Stanley Brassie, *Acting Head*

Paul G. Schempp, *Graduate Coordinator*

542-4462

(Ramsey Center)

600. Special Problems in Physical Education. 1-10 hours.

Prerequisite: Permission of department.

Independent study in physical education.

642. Movement Education for the Young Child. 1-5 hours.

Developmentally appropriate movement skills and activities for use with children in early childhood. Students will engage in field experiences in local elementary schools.

661. Adapted Physical Education. 5 hours.

Theory of adapted physical education and implementation of physical activity for individuals with disabilities in a school, homebound, community or clinical setting. Course emphasis will be characteristics, functional ability, and program implementation for individuals with disabilities.

700M. Master's Research. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

702. Administration of Sport. 5 hours.

Organizing, planning, and leading the sport enterprise. Theoretical issues in the management of the sport enterprise.

704. Instructional Strategies in Physical Education. 5 hours.

Prerequisite: PES 546 or equivalent.
This course is designed as an advanced course in physical education instruction. A variety of instructional strategies will be presented for the purpose of improving teaching effectiveness in physical education. The course is designed to increase the student's repertoire of teaching skills.

705. Problems of Teaching in Physical Education. 1-5 hours.

Prerequisite: Four courses in education.
Instructional procedures and evaluation in terms of student growth.

707. Movement Education for the Elementary School. 5 hours.

Prerequisite: PES 307 or 442/642 or equivalent.
The course is designed to provide the graduate student with an understanding of the definition, conceptual framework and theoretical understanding of movement education. Students will operationalize their understanding by participating in simulated and/or actual teaching experiences, in the analysis of teaching experiences, and in planning a movement education program for the schools.

708. Curriculum Planning in Physical Education. 5 hours.

Prerequisite: Completion of a teacher certification program in physical education and teaching experience or permission of department.
Problems of curriculum design and development in physical education.

709. Designing Instruction for Psychomotor Skills. 5 hours.

Prerequisite: PES 704 or 721 or permission of department.

The systematic design of instruction of psychomotor skills which includes practical experience in developing and evaluating instructional materials. In addition this course will encompass an examination of existing CBI courseware.

710. Motor Development. 5 hours.

Prerequisite: Undergraduate degree in physical education, child growth and development, or early childhood education.

The course addresses development of fundamental motor skills from childhood to old age with emphasis on concomitant physiological and motor skill stages of development. The impact of developmental delays on motor skill acquisition will also be covered.

712. Analysis of Teaching Physical Education. 5 hours.

Prerequisite: PES 708 or equivalent.
After developing a brief overview of current research related to specific teaching models, students will become involved in the process of utilizing descriptive-analytic techniques created specifically for use in the analysis of teaching physical education. Emphasis will be placed on systematic observation in physical education teaching as it is currently employed in supervision, research and in self-evaluation of teaching.

713. Administration of Physical Education in the School Program. 5 hours.

Program planning; budgeting; selection, care and maintenance of equipment and facilities; personnel; and other administrative problems; evaluation of physical education in the school program.

714. Current Problems in Physical Education and Sport Studies. 1-5 hours.

Problems met in a comprehensive program of physical education and sport studies. Special emphasis given to problems in areas of students' interests.

715. (EXS/HPB/REC) Research Methods in Health and Human Performance. 5 hours.

See EXS 715.

721. Motor Learning in Physical Education. 5 hours.

Analysis and application of psychological factors and theories of learning with special reference to learning and retention of motor skills.

722. Sport and Society. 5 hours.

An analysis of sport in American culture.

723. History of Sport in America. 5 hours.

Prerequisite: 20 hours of physical education and/or history or permission of department.

Education

Traces the development of sport from the colonial period to the present. Deals with recreation sport, school sport, amateur and professional athletics. Investigates the social, economic, and political impact of sport.

724. Psychosocial Aspects of Sport. 5 hours.
Prerequisite: Undergraduate emphasis in physical education or a related field or permission of department.

The study of the psychological and sociological processes that affect the individual as an active participant in sport and physical activity.

725. Women and Sport. 5 hours.
Political, social and cultural factors which have influenced the participation of women in sport and physical activity.

726. Case Studies in Physical Education and Athletics. 5 hours.

Prerequisite: Undergraduate major in physical education or permission of department.
Problems dealing with the administration and teaching of physical education and athletics are studied by using the case method.

727. Design and Management of Physical Education and Sports Facilities. 5 hours.

An overview of the planning, design, financing, construction, and management of renovated or newly constructed physical education and sports facilities.

728. Sport Marketing. 2 hours.

Prerequisite: MKT 760.

Marketing of sporting events and services to consumers of sport. Planning and organization of appropriate marketing strategies.

729. Managerial Operations in Sport. 2 hours.
Business and managerial operations in intercollegiate and professional sport including budget development and control, financial analysis, taxation issues, insurance considerations, and application of computers.

730M. Master's Thesis. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

731. Ethical Decision Making in Sport Management. 2 hours.

Managerial ethics in sport organizations. Development and application of a code of ethics used for decision making in sport management.

746. Internship in Teaching Physical Education. 1-15 hours.

Prerequisite: Permission of department.

A study-work program which includes on the job experience in a teaching setting coupled with class or conference study of problems encountered by the intern.

761. Physical Rehabilitation of Children with Disabilities. 5 hours.

Prerequisite: PES 461/661 or equivalent.

Etiology and remediation of disabilities caused by neurological, cardiorespiratory, sensory, and/or musculoskeletal and developmental anomalies as they relate to physical functioning. Responses to exercise and physical rehabilitation of children with disabilities.

762. Physical Education for the Developmentally Disabled. 5 hours.

Prerequisite: PES 461/661 or equivalent.

Development of competencies related to physical activity and psychomotor functioning of the Developmentally Disabled (including mentally retarded, autistic, cerebral palsied and learning disabled) within the school setting. Content includes program evaluation, skill acquisition and integration of movement with other subjects and current research in the field.

764. (REC) Assessment in Adapted Physical Education and Therapeutic Recreation. 5 hours.

Prerequisite: PES 461/661.

Assessment and interpretation techniques for evaluating physical, motor and recreational capabilities of individuals with disabilities.

765. Applied Project in Physical Education and Sport Studies. 5 hours.

Prerequisite: Permission of department.

Functional study of a topic or problem in physical education significantly related to the student's professional task.

780. Practicum in Physical Education and Sport Studies. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Supervised participation in selected aspects of programming and research in physical education.

821. Bases of Motor Control. 5 hours.

Prerequisite: PSY 480/680.

A neuropsychological approach to perceptual motor processes with emphasis on the role of the nervous system in controlling sensory and motor behavior.

863. Programming in Adapted Physical Education. 5 hours.

Prerequisite: PES 461/661.

Theories, concepts and techniques for development, implementation, coordination, and evaluation of adapted physical education programs including policies, public relations, inter-agency communication, funding, administrative and programs structure, personnel, inservice training and facilities.

899. Research Seminar in Physical Education. 1-10 hours.

A required seminar for first year doctoral students beginning fall quarter and continuing the following winter and spring quarters.

900D. Doctoral Research. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

908. Curriculum Inquiry in Physical Education. 5 hours.

Prerequisite: PES 708 and ECS 702 or 804.
Analysis of the process of curriculum theorizing. Participation in the development of physical education curriculum theory. Application of criteria for theory-building to model-building in physical education. Translating physical education curriculum theory into practice.

921. Advanced Study of Motor Skill Acquisition. 5 hours.

Prerequisite: PES 721.
Advanced study in motor learning with appropriate laboratory experiences.

930D. Doctoral Dissertation. 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of department.

960. Educational Research in Physical Education. 1-15 hours.

An independent study of a research topic in physical education appropriate to the advanced graduate student's specialization.

963. Critique of Educational Literature in Physical Education. 5 hours.

Critical evaluation of reported research in the advanced graduate student's specialization area within physical education.

970. Internship in Physical Education. 5 hours.

Prerequisite: Permission of department.
A study-work program; class or conference study of problems encountered by the intern with remainder of time in application of principles to regular job.

Recreation and Leisure Studies (REC)

Douglas A. Kleiber, *Head*
Diane M. Samdahl, *Graduate Coordinator*,
542-5064
(Ramsey Center)

600. Special Problems in Recreation and Leisure Studies. 1-10 hours.

Selected students are permitted to secure spe-

cialized training appropriate to their needs. Projects may involve intensive library investigation or the collection and analysis of original data pertinent to a given problem.

602. Concepts of Leisure. 5 hours.

The theoretical bases for leisure are explored and discussed by focusing on central issues in defining recreation, leisure and play and emphasizing the persistent problems and perspectives underlying various concepts of leisure. The personal, societal, political and environmental contexts in which leisure occurs are also introduced.

604. Leisure Education. 5 hours.

Prerequisite: REC 602 or permission of department.
Principles of educating for leisure. Course involves review of school and community curricular programs designed to develop leisure awareness, attitudes, decision-making skills, and resource guidance. Emphasis is on the recreation professional's facilitative role in assisting individuals and groups to achieve satisfying leisure lifestyles.

699. Research Seminar in Recreation and Leisure Studies. 1-10 hours.

A seminar dealing with proposed research projects and critiques of the literature in recreation.

700M. Master's Research. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

715. (EXS/HPB/PES) Research Methods in Health and Human Performance. 5 hours.

See EXS 715.

729. Program Planning and Evaluation in Therapeutic Recreation. 5 hours.

This course emphasizes the in-depth study and application of approaches to therapeutic recreation program development, design, and evaluation for persons with disabling conditions. Case studies are used. Field trips and voluntary experiences are required.

730M. Master's Thesis. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

732. Women and Leisure. 5 hours.

Prerequisite: Permission of department.
Feminist critique of leisure theories and women's representation in leisure history, management, and activities.

734. Administration of Recreation and Leisure Services. 5 hours.

The course emphasizes the various methods of delivering recreation and leisure services. This includes the investigation of techniques in bud-

Education

getting and finance, personnel management, public relations, organizational and administrative theory and practice, and legislative issues.

738. Leisure and Aging. 5 hours.

Leisure programs and services for older adults in both community and institutional settings are examined.

743. Camping Administration. 5 hours.

Prerequisite: REC 386 or equivalent experience. Examination of the organization and administration of camps with particular emphasis on program planning, selection and training of staff, campsite selection and development, health and safety, and evaluation and special problems. Individualized study of camp programs for persons with disabling conditions is available.

746. Internship in Recreation and Leisure Services. 1-15 hours.

Prerequisite: Permission of department. Recreation and leisure studies majors are placed in selected leisure service delivery systems for an entire quarter, during which time they are supervised in managerial level internship experience.

750-750L. Outdoor Recreation Resources Management. 5 hours. Three lectures and one 3-hour lab period.

Prerequisite: REC 531 or permission of department. Development of skills in planning, programming, management, and interpretation of outdoor recreation areas through lectures and field experiences.

764. (PES) Assessment in Adapted Physical Education and Therapeutic Recreation. 5 hours. See PES 764.

765. Applied Project in Recreation and Leisure Studies. 5 hours.

The project involves the scholarly examination of a topic or problem in recreation and leisure studies that is significantly related to students' professional goals.

899. Research Seminar in Recreation and Leisure Studies. 1-10 hours.

Each doctoral candidate is expected to attend a seminar during each quarter of residence. A minimum of three quarter hours of credit is required.

900D. Doctoral Research. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department. Research while enrolled for a doctoral degree under the direction of faculty members.

930D. Doctoral Dissertation. 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of department.

933. Trends in Recreation and Leisure. 5 hours. Trends and issues in recreation and leisure are critically analyzed. Implications for the future are explored.

963. Critique of Literature in Recreation and Leisure Studies. 5 hours.

In this course, advanced students critically review the significant literature in recreation and leisure studies.

980. Practicum in Recreation and Leisure Studies. 1-15 hours.

Prerequisite: Permission of department. Supervised practice in an approved institutional or community leisure service setting is required. Students are placed at the administrative level.

Higher Education (EHI)

Cameron L. Fincher, *Director*
D. Parker Young, *Graduate Coordinator*,
542-3464
(Candler Hall)

765. Applied Project in Higher Education. 5 hours.

A functional study of a topic or problem in higher education significantly related to the student's professional task is pursued.

800. The Development and Scope of Higher Education. 5 hours.

A broad survey of higher education emphasizing recent developments in American higher education.

820. Institutional Research. 5 hours.

This course is designed to develop competency and skill in the specialized area of data collection and interpretation of institutional studies and their implication in higher education.

830. The Law and Higher Education. 5 hours.

A study of the legal aspects of higher education through pertinent court decisions affecting the administration of the institution, faculty, staff, and students.

840. Financial Aspects of Higher Education. 5 hours.

A study of the financial aspects of higher education; need for current and capital funds, sources of funds, financial policies, economies in institutional operations, college and university development, budgeting, and resource allocation.

860. Assessment in Higher Education. 5 hours.

Critical review of methods and techniques used in assessing educational outcomes in colleges and universities. Analysis and interpretation of prob-

lems, issues, and concerns involved in public demands for assessment and accountability.

889. Seminar in Higher Education. 1-5 hours. Graduate seminar on topics of general and special interest in higher education.

899. Research Seminar in Higher Education. 1-10 hours.

This course deals with proposed student research projects and methods of data analysis.

900. Organization and Governance in Higher Education. 5 hours.

Administrative theory, diversity of types of policies, control and organizational patterns of public and private institutions, and an investigation of current literature and practices and their implications for higher education.

900D. Doctoral Research. 1-15 hours. (Max. 30 hours.)

Prerequisite: Permission of department. Research while enrolled for a doctoral degree under the direction of faculty members.

901. Academic Programs in Higher Education. 5 hours.

Curriculum development in higher education. Topics include general education and specialization; historical overview and philosophical issues; curricular trends; accreditation; planning, evaluation and assessment in higher education.

902. Critical Issues in Higher Education. 5 hours. (Max. 15 hours.)

A study of critical problems and issues facing higher educational institutions today, emphasizing the processes of change which may result in improved administrative leadership and practice.

903. Instructional Processes in Higher Education. 5 hours.

Overview of instructional processes in higher education. Includes instructional goals and objectives, selection and development of instructional methods and materials, and assessment of course outcomes. Critical review of research and scholarly literature on instructional and faculty development.

920. Administrative Leadership in Higher Education. 5 hours.

Administrative leadership concepts, principles, and practices in U.S. colleges and universities. Interpretation and evaluation of theory and research in leadership, administration, and management.

930D. Doctoral Dissertation. 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of department.

950. Policy Studies in Higher Education. 5 hours. (Max. 15 hours.)

Methods of analyzing, interpreting, and evaluating policy issues related to the continued improvement and development of institutions, programs, and services in higher education. Policy analysis and research at public and institutional levels.

963. Critique of Educational Literature in Higher Education. 5 hours.

Critical interpretation and evaluation of research and theoretical writing. Each student will make critical reviews of significant literature in his/her field of specialization.

970. Internship in Higher Education. 5-15 hours. (Max. 15 hours.)

Prerequisite: Other required course work.

A study-work program. Conference study of problems encountered by the intern with a major portion of time spent in application of principles to an internship program at a selected institution.

Instructional Technology (EIT)

Kent L. Gustafson, *Head*
Melvin M. Bowie, *Graduate Coordinator,*
542-4030
(Aderhold Hall)

600. Special Problems in Instructional Technology. 1-10 hours. (Max. 30 hours.)

Prerequisite: Permission of department.

Independent study of selected problems in instructional technology.

602. Reference Materials and Services. 5 hours.

Nature of reference process, information sources, and evaluation of reference services. Emphasis on types of materials, databases, and reference services that support K-12 curricula.

603. Technical Services. 5 hours.

Study of procedures necessary for internal organization of a media center. Includes practice in analyzing, classifying, cataloging, and organizing all types of media materials.

604. Administration of School Media Center. 5 hours.

Study of the organization, services, functions, and administration of the school media center.

699. Research Seminar in Instructional Technology. 1-10 hours. (Max. 10 hours.)

Prerequisite: EIT 500/700.

This master's level seminar is a critical review of the literature and of proposed research projects in instructional technology.

Education

700. Utilization of Educational Media. 5 hours. Survey of the role of media in the instructional process. Focus is on the characteristics of mediated delivery systems, the selection of media to fit instructional needs, design and evaluation of instructional materials, and the classroom integration of media.

701. Building Library Media Collections. 5 hours.

Building balanced media center collections to support elementary, middle, and secondary school curricula. Analysis of media selection aids, print and non-print reviewing sources, publishers and publishing.

704. Management of Educational Media Services. 5 hours.

Prerequisite: EIT 500/700.

Problems of design and development of mediated learning systems and learning resource centers. Planning, organizing, budgeting media support systems.

705. Supervision of School Media Programs. 5 hours.

Prerequisite: For EdS students only.

Survey of leadership service for the development, improvement, evaluation, and supervision of school media centers; emphasis on organization and coordination of the total media program within the school system; methods and problems of supervision, human relations, public relations, and communication.

707. Instructional Design and Development. 5 hours.

Prerequisite: EDL 709 or EIT 500/700.

Application of systematic procedures for designing, developing, and evaluating and revising instruction to meet identified goals and objectives.

714. (EDL) Design and Development of Computer-Based Instructional Materials. 5 hours. Four lectures and one 2-hour lab per week.

Prerequisite: One course in educational computing. This course will provide students with experience in using authoring languages and course development systems for producing interactive instructional materials. Each student will develop an interactive instructional sequence and demonstrate proficiency with at least one authoring language.

718. Design and Production of Educational Media. 5 hours.

Laboratory course dealing with graphic, duplication, photographic, and audio techniques necessary for the production of basic instructional media materials: displays, slides, transparencies, audio tapes, and other media formats.

719. Educational Television Production. 5 hours.

Prerequisite: EIT 518/718.

Design and production of instructional videotapes. Emphasis is on portable television equipment suitable for school or small business applications. Includes laboratory practice with multi-camera production techniques and electronic editing.

720. Photography in Instruction. 5 hours.

Three lectures and two 2-hour lab periods.

Prerequisite: EIT 518/718 or permission of department.

Basic principles, skills, and techniques of photography and their application to problems of instruction. Areas covered include introductory skills in camera and film use, darkroom procedures, processing and printing in black and white and color.

723. Educational Media Production, Advanced. 5 hours.

Prerequisite: EIT 518/718.

Special projects course focused on the design and development of instructional media materials including various types of graphic, photographic, computer, and audio materials.

724. Data Processing in Libraries. 5 hours.

Prerequisite: EDU 601.

An introduction to the basic principles of systems analysis; the application of automation to the library functions of acquisition, organization, circulation, and retrieval of information in various formats.

729. Educational Telecommunications. 5 hours.

Educational telecommunications to enhance curricula, professional development, and collaborative work, using remote resources. Current social, political, policy, equity issues and technological configurations and trends will be explored.

746. Internship in Teaching Instructional Technology. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Each student will apply principles and techniques of instructional technology in a selected setting under the supervision of a faculty member.

765. Applied Project in Instructional Technology. 5 hours.

Prerequisite: Permission of department.

Each student will plan and conduct a study in instructional technology that relates to the student's professional goals.

770. Internship in School Media Center. 5 hours.

Practicum in selected school media centers under the supervision of college staff and qualified personnel in school. Required of students without school media center experience to meet initial certification requirements.

772. Instructional Text Design. 5 hours.

Strategies and practice in developing and authoring self-guided instructional materials. Ideas are applicable to print or electronic delivery systems (e.g., workbooks, textbooks, computers, projected media).

803. Instructional Technology. 5 hours.

Prerequisite: EIT 707 or one graduate course in EIT or EDL.

Study of both processes and products of technology as applied to curriculum and instruction. Consideration of the impact of instructional technology to date and its potential for the future.

810. Managing Instructional Development Projects. 5 hours.

Prerequisite: EIT 707 or EIT 772 and EIT 518/718.

Skills and techniques for managing projects involving the design, development, and implementation of technology based education and training.

815. Instructional Message Design. 5 hours.

Prerequisite: EIT 518/718 and EIT 772.

Concentrated study and application of behavioral science principles to the design of instructional messages which are embodied in the materials for various media. Units on memory principles, structure of knowledge, learning principles, attitude changes and concept learning are integrated into practical message design exercises.

828. Instructional Product Evaluation. 5 hours.

Prerequisite: EIT 707 and ERS 411/611 or STA 421/621 or equivalent.

Planning, conducting, analyzing, and reporting systematic evaluations of instructional products such as computer-based instruction, interactive videodiscs, and educational television programs.

830. Artificial Intelligence in Education. 5 hours.

Prerequisite: EDU 602 or equivalent.

Examination of two primary strands within the field of artificial intelligence in education: Intelligent tutoring systems and educational expert systems tools. Students will examine the literature and develop a prototypical system.

840. Distance Learning. 5 hours.

Prerequisite: EIT 707 or equivalent.

Distance learning in the United States and the world covering history, current research, and technological delivery methods.

899. Research Seminar in Instructional Technology. 2 hours. (Max. 10 hours.)

Seminar for doctoral students in instructional technology. Topics include literature in instructional technology, research design, data analysis, and development of research proposals.

900D. Doctoral Research. 1-15 hours. (Max. 30 hours.)

Prerequisite: Permission of department.

Research while enrolled for a doctoral degree under the direction of faculty members.

926. Instructional Systems Analysis. 5 hours.

Prerequisite: Two courses in instruction and permission of department.

Investigation of instructional problems as a basis for improvement or redesign. Study of instruction through consideration of components.

930D. Doctoral Dissertation. 1-15 hours. (Max. 35 hours.)

Prerequisite: Permission of department.

960. Educational Research in Instructional Technology. 1-15 hours. (Max. 15 hours.)

Prerequisite: Advanced graduate standing.

Individual research under the supervision of a faculty member.

963. Critique of Literature in Instructional Technology. 5 hours.

Interpretation and analysis of research and theoretical literature in instructional technology. Review and evaluation of current research in selected areas is emphasized. A synthesis of the literature in an area of interest is completed by each student.

980. Practicum in Instructional Technology. 1-15 hours. (Max. 15 hours.)

Supervised practice in approved institutional or project setting. Allows the student to apply and test techniques and principles of instructional technology in an existing development activity.

Language Education

Carol J. Fisher, *Head*

JoBeth Allen, *Graduate Coordinator,*
542-5674

(Aderhold Hall)

English Education (EEN)

600. Special Problems in English Education. 1-10 hours. (Max. 10 hours.)

Selected students are permitted to secure specialized training appropriate to the needs of the individual. The student's project may involve intensive library investigation or the collection and analysis of original data pertinent to a given problem.

Education

642. Whole Language Teaching in Early Childhood Education. 1-5 hours.

Recent research and theory on oral and written language acquisition, development, and variation and the implications for classroom practices. Whole language instructional techniques for the development of written and oral language are explored.

674. (LIN/CML) Discourse Analysis. 5 hours. See LIN 674.

699. Research Seminar in English Education. 1-10 hours. (Max. 10 hours.)

A seminar dealing with proposed research projects and critiques of the literature in English education.

700. Language Acquisition and Development. 5 hours.

A study of native and second language acquisition processes, phonological, morphological, syntactic, and semantic, with attention to regional, social, and functional variation in language and contrasts between English and other selected languages.

700M. Master's Research. 1-15 hours. (Max. 20 hours.)

Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

705. Problems of Teaching English Education. 5 hours.

Effective teaching and classroom management techniques.

706. Literature Study in Secondary Schools. 5 hours.

A study of literature and teaching methods appropriate for an effective secondary school literature program.

707. English Language Studies for Teachers. 5 hours.

Instructional applications of language concepts drawn from theories of grammar, semantics, dialectology, lexicography, and the history of English.

708. Curriculum Planning in English Education. 5 hours.

Prerequisite: 25 quarter hours of graduate credit and teaching experience or permission of department.

Historical, philosophical, and sociological bases for curriculum planning in English; survey of current trends in design and content.

709. Composition in the Elementary and Secondary School. 5 hours.

Instruction in the modes of written expression and study of composition teaching methods.

710. Informational Literature in Early Childhood and Middle Schools. 5 hours.

Survey of informational literature for grades K-8. Providing opportunities for first-hand reading of informational literature and examining selection criteria and ways to integrate informational books into language arts and content area curricula.

711. Survey of Children's Literature, Preschool-8th Grade. 5 hours.

A survey of literature appropriate for children, preschool through junior high school. (Open only to students who have had no previous course in children's literature.)

712. Children's Literature in the Curriculum, Preschool-8th Grade. 5 hours.

Prerequisite: One course in children's literature.
Study of the development of children's literature to the present time; includes principles and techniques in guidance of children's reading interests; selection of books for elementary school libraries. Extensive reading and evaluation of children's books.

713. Folk Literature in the Curriculum. 5 hours.

Prerequisite: EEN 300 or EEN 711.
A study of the genres of folk literature, their relationship to formal literature, and their role in contemporary society. A study of field work techniques and of oral narrative style. Development of approaches for incorporating folk literature into the school curriculum.

714. Guiding the Reading of Young Adults. 5 hours.

Study of current investigation and research concerning interests and habits of young adults; a critical study of standard and current books with aids and criteria for selection; the use of books for curricular and leisure needs; extensive examination and reading of books and materials.

715. The Oral Tradition in Prose and Poetry. 5 hours.

Prerequisite: EEN 300 or 516 or EEN 711.
This course includes a study of the role of the storyteller in preliterate and literate cultures; it also provides practice in the arts of poetic recitation, choral reading and storytelling as they relate to the primary and middle school grades.

726. Poetry in Early Childhood and Middle School Classrooms. 5 hours.

A broad variety of poems and enrichment activities for use in elementary and middle school classes; ways of encouraging children to respond to published poetry and to write poetry.

730M. Master's Thesis. 1-15 hours. (Max. 20 hours.)

Prerequisite: Permission of department.

746. Internship in Teaching English. 1-15 hours. Prerequisite: Ten quarter hours in curriculum and methods.

Classroom teaching experience under the direction of a supervising teacher and a University faculty member.

765. Applied Project in English Education. 5 hours.

Prerequisite: 40 quarter hours of graduate credit. Intensive study of a selected topic through library research and/or collection of original data.

806. Seminar in Secondary School Literature Study. 5 hours.

Prerequisite: EEN 506/706 or EEN 712 or permission of department.

A study of recent trends in literature for adolescents; critical approaches to literature, especially response-to-literature theory and research; recent research in the teaching of literature; and issues and problems in censorship.

809. Seminar on Research in Composing Processes. 5 hours.

Prerequisite: EEN 509/709 or permission of department.

A study of the research literature on composing processes. Topics include developmental rhetoric, speaking and writing relationships, thought processes involved in composing, qualitative research methodology, and implications of research for curriculum and instruction in writing.

813. Seminar on the Images of Women and Minorities in Literature for Young People. 5 hours.

Prerequisite: EEN 711 or 712 or EEN 506/706 or an equivalent course.

This course explores the historical evolution of the images of women and racial minorities in children's literature. Research suggesting that children's literature provides historical evidence about changing social values and ideals provides the course's theoretical framework. The relationship between children's literature's socializing function and aesthetic concerns is also considered.

899. Research Seminar in English Education. 1-10 hours. (Max. 10 hours.)

Prerequisite: Advanced graduate standing. Critiques of published research and reports of original research conducted by faculty members and doctoral students.

900D. Doctoral Research. 1-15 hours. (Max. 30 hours.)

Prerequisite: Permission of department. Research while enrolled for a doctoral degree under the direction of faculty members.

930D. Doctoral Dissertation. 1-15 hours. (Max. 30 hours.)

Prerequisite: Permission of department.

960. Educational Research in English Education. 1-15 hours. (Max. 15 hours.)

Prerequisite: Advanced graduate standing. Directed readings in research related to the teaching of English.

963. Critique of Educational Literature in English Education. 5 hours.

Prerequisite: Advanced graduate standing. Critical survey of research related to the teaching of English.

Foreign Language Education (EFL)

600. Special Problems in Foreign Language Education. 1-10 hours. (Max. 10 hours.)

Prerequisite: Permission of department. Individualized study of selected topics related to the teaching of foreign languages.

635. Foreign Language Curriculum and Methodology in the Elementary School. 5 hours.

Foundation of curricular design, second language acquisition, and methods of teaching foreign languages in the elementary school.

636. Foreign Language Curriculum and Methodology in the Secondary School. 5 hours.

Curricular design of foreign languages in the secondary school and on the techniques and strategies for teaching and evaluating language acquisition in the secondary schools.

637. Foreign Language Methodology and Curriculum for the Elementary School. 5 hours.

Prerequisite: Permission of department. Develops an understanding of children as foreign language learners and focuses on methods of teaching foreign languages to children in grades K-6.

686. (LIN/ANT) Language in Culture and Society. 5 hours.

See LIN 686.

699. Research Seminar in Foreign Language Education. 1-10 hours. (Max. 10 hours.)

A seminar dealing with proposed research projects and critiques of the literature in foreign language education.

700M. Master's Research. 1-15 hours. (Max. 20 hours.)

Prerequisite: Permission of department. Research while enrolled for a master's degree under the direction of faculty members.

701. Methods and Materials for Teaching English as a Second Language. 5 hours.

Prerequisite: Permission of department.

Education

Objectives and approaches to teaching English as a second language; instructional materials and professional resources; principles of testing and interpreting student proficiency and progress; principles of evaluating materials, student methods, and curricula.

702. Theory and Practice for Teaching English as a Second Language. 5 hours.

Prerequisite: EFL 501/701 or permission of department.

Strategies for teaching advanced reading and writing skills; approaches to the teaching of patterns of American culture; curricular implications for English as a second language; observation and teaching practicum.

705. Teaching for Cross-Cultural Understanding. 5 hours.

Lecture and discussion in areas of cross-cultural analysis, attitudes toward other cultures, strategies for teaching culture in the language classroom and the testing of cultural insights.

708. Curriculum Planning in Foreign Language Education. 5 hours.

Prerequisite: 25 quarter hours of graduate credit and teaching experience or permission of department.

Historical, philosophical, and sociological bases for curriculum planning in foreign languages; survey of current trends in design and content.

710. American Language and Cultural Studies for Foreign Students. 1-5 hours.

Designed to help foreign students develop advanced English skills in understanding academic lectures, comprehending reading materials, speaking with grammatical accuracy and acceptable pronunciation, and writing for academic purposes.

730M. Master's Thesis. 1-15 hours. (Max. 20 hours.)

Prerequisite: Permission of department.

746. Internship in Teaching Foreign Languages. 1-15 hours.

Prerequisite: Ten quarter hours in curriculum and methods.

Classroom teaching experience under the direction of a supervising teacher and a University faculty member.

765. Applied Project in Foreign Language Education. 5 hours.

Prerequisite: 40 quarter hours of graduate credit. Intensive study of a selected topic through library research and/or collection of original data.

899. Research Seminar in Foreign Language Education. 1-10 hours. (Max. 10 hours.)

Prerequisite: Advanced graduate standing.

Critiques of published research and reports of original research conducted by faculty members and doctoral students.

900D. Doctoral Research. 1-15 hours. (Max. 30 hours.)

Prerequisite: Permission of department.

Research while enrolled for a doctoral degree under the direction of faculty members.

930D. Doctoral Dissertation. 1-15 hours. (Max. 30 hours.)

Prerequisite: Permission of department.

960. Educational Research in Foreign Language Education. 1-15 hours. (Max. 15 hours.)

Prerequisite: Advanced graduate standing.

Directed readings in research related to the teaching of foreign languages.

963. Critique of Educational Literature in Foreign Language Education. 5 hours.

Prerequisite: Advanced graduate standing.

Critical survey of research related to the teaching of foreign languages.

Mathematics Education (EMT)

Larry L. Hatfield, *Head*

William D. McKillip, *Graduate Coordinator*,
542-4194
(Aderhold Hall)

600. Special Problems in Mathematics Education. 1-10 hours. (Max. 15 hours.)

In-depth exploration of special topics in mathematics education of interest to individual students or groups.

635. History of Mathematics. 3 hours.

Prerequisite: MAT 254.

An historical development of selected topics in mathematics. The organization of the course is along lines of mathematics content, but the motivational and pedagogical relevance of such historical insights is emphasized.

641. Mathematics Learning: K-4. 3-5 hours.

Prerequisite: The entire general education requirement must have been met.

A study of individual progress and problems in the learning of mathematics. Individual assessment, diagnostic and remedial teaching, internship.

642. Mathematics Methods in Early Childhood Education. 3-5 hours.

Prerequisite: MAT 205 and 206.

Methods and materials for teaching mathematics in nursery school, kindergarten, and grades one, two, and three. The use of concrete and semi-

concrete materials and informal laboratory activities appropriate for children in that age range.

655. Diagnostic Teaching of Arithmetic. 5 hours.
Prerequisite: EMT 442/642 or equivalent.

The reasons why some children have difficulty in learning mathematical concepts will be investigated in terms of the structure of elementary school mathematics as it relates to how children learn mathematical concepts. The students will be guided in using diagnostic strategies of teaching arithmetic to elementary school children.

668. Computers and Algorithms in Mathematics Education. 5 hours.

Prerequisite: MAT 254 or permission of department. Methods and materials for teaching school mathematics with emphasis upon algorithmic constructions and computer programming.

669. Computer-Based Mathematics Instruction. 5 hours.

Prerequisite: EMT 468/668 or EMT 335 or equivalent.

Analysis and design of computer-based instruction in school mathematics. Pedagogical bases for designing computer-based instruction will be developed.

670. Advanced Design of Computer-Based Mathematics Instruction. 5 hours.

Prerequisite: EMT 469/669 and 336 or 705 or equivalent.

Advanced concepts and applications of instructional design for analyzing and creating computer courseware in mathematics education.

699. Research Seminar in Mathematics Education. 1-10 hours. (Max. 15 hours.)

In-depth exploration of special topics in mathematics education of interest to individual students or groups.

700M. Master's Research. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department. Research while enrolled for a master's degree under the direction of faculty members.

701. Teaching Mathematics in the Elementary School. 5 hours.

Prerequisite: Four courses in education, two courses in mathematics and either teaching experience or permission of department.

An examination of the interrelationships between contemporary mathematics for elementary schools, effective means of communicating mathematical ideas for children, and elementary learning theory.

705. Problems of Teaching Secondary School Mathematics Education. 5 hours.

Prerequisite: Four courses in education.

Instructional procedures and evaluation in terms of student growth.

707. Mathematics Curriculum in the Elementary School. 5 hours.

Prerequisite: Four courses in education. Survey of the mathematics curriculum of the elementary school, with special emphasis on contemporary programs, issues, and trends.

708. Curriculum Planning in Mathematics Education. 5 hours.

Prerequisite: Four courses in education. Mathematics curriculum of the secondary schools, with emphasis on current issues and trends.

715. Contemporary General Mathematics. 5 hours.

An approach to mathematics curriculum, teachers' procedures, and evaluation through an examination of mathematics content with emphasis on the function concept, applications, and problem solving.

725. Problem Solving in Mathematics. 5 hours.
Prerequisite: MAT 254.

Students will engage in extensive experience and practice in solving mathematical problems. This experience will serve as a background examining theories of mathematics problem solving abilities. Pedagogical techniques for secondary school mathematics problem solving will be examined and curriculum organization to incorporate problem solving in secondary school mathematics programs will be explored.

728. Teaching Number Systems in the Middle School. 5 hours.

Corequisite: MAT 502/702. Didactics of number systems for middle school mathematics. Teaching methods, curriculum materials, psychological factors for developing natural, integer, rational, and real number structures.

729. Teaching Geometry in the Middle School. 5 hours.

Corequisite: MAT 503/703. Didactics of geometry for middle school mathematics. Teaching methods, curriculum materials, psychological factors for developing geometric and measurement concepts.

730. Teaching Algebra in the Middle School. 5 hours.

Prerequisite: Two courses in mathematics and two courses in education or permission of department.

Didactics for algebra and number theory for middle school mathematics. Teaching methods, curriculum materials, psychological factors for developing algebraic concepts.

Education

730M. Master's Thesis. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

731. Teaching Mathematics in the Middle School. 5 hours.

Prerequisite: EMT 530/730.

Methods and materials for teaching mathematics in the middle school.

746. Internship in Teaching Mathematics. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Carefully supervised mathematics teaching in a secondary school.

765. Applied Project in Mathematics Education. 5 hours.

Prerequisite: Four courses in education.

Study of a mathematics education topic or problem under the direction of a faculty member. A significant written document is required.

805. Theoretical Bases of Mathematics Instruction. 5 hours.

Prerequisite: EMT 705, 708, and permission of department.

Advanced study of some theoretical bases of mathematics instruction, including philosophical and psychological bases, the study of instructional theories from the field of mathematics education, and the research that supports these theories.

808. Advanced Study of Mathematics Curriculum. 5 hours.

Prerequisite: EMT 705, 708, and permission of department.

Advanced study of mathematics curriculum; its content, scope, and sequence; the development and evaluation of mathematics programs. Emphasis is upon the identification of issues and problems for disciplined inquiry.

899. Research Seminar in Mathematics Education. 1-10 hours. (Max. 15 hours.)

Prerequisite: Four courses in education.

Doctoral seminar on topics for research in mathematics education. Each doctoral student is expected to participate in a seminar during each quarter of registration.

900D. Doctoral Research. 1-15 hours. (Max. 60 hours.)

Prerequisite: Permission of department.

Research while enrolled for a doctoral degree under the direction of faculty members.

930D. Doctoral Dissertation. 1-15 hours. (Max. 60 hours.)

Prerequisite: Permission of department.

960. Educational Research in Mathematics Education. 1-15 hours. (Max. 15 hours.)

Prerequisite: Four courses in education and advanced graduate standing.

Independent research on a problem in mathematics education.

963. Critique of Educational Literature in Mathematics Education. 5 hours. (Max. 15 hours.)

Prerequisite: Four courses in mathematics education.

Critical interpretation and evaluation of research and theoretical writing in mathematics education. Each student will make critical reviews of significant mathematics education literature.

970. Internship in Mathematics Education. 1-15 hours. (Max. 15 hours.)

Prerequisite: Four courses in education and permission of department.

Supervised work in mathematics education in an on-the-job leadership situation.

980. Practicum in Mathematics Education. 1-15 hours. (Max. 15 hours.)

Prerequisite: Four courses in education and permission of department.

Completion of a supervised task in mathematics education in an approved setting.

Music Education (EMU)

Jolene R. Davis, *Graduate Coordinator,*
542-2743
(*Music Building*)

600. Special Problems in Music Education. 1-10 hours. (Max. 10 hours.)

Selected students are permitted to secure specialized training appropriate to the needs of the individual. The student's project may involve intensive library investigation or the collection and analysis of original data pertinent to a given problem.

746. Internship in Teaching Music Education. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

A student is assigned in an appropriate school setting to have a supervised teaching experience in music education.

765. Applied Project In Music Education. 5 hours.

Prerequisite: Permission of department.

Functional study of a topic or problem in music education significantly related to the student's professional task.

822. Philosophy and Practice of Music Education. 5 hours.

Prerequisite: Graduate standing in music.
A survey of national and international philosophical thought and practice in music education.

899. Research Seminar in Music Education. 1-5 hours. (Max. 10 hours.)

Prerequisite: Permission of department.
A seminar stressing intensive individual investigation of music education research topics and reports.

900D. Doctoral Research. 1-15 hours. (Max. 60 hours.)

Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

930D. Doctoral Dissertation. 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of department.

963. Critique of Educational Literature in Music Education. 5 hours.

Prerequisite: Permission of department.
Critical interpretation and evaluation of theoretical writing and research in the field of music education. Each student will make critical reviews of significant literature in music education.

Occupational Studies

Helen C. Hall, *Head*
Clifton L. Smith, *Graduate Coordinator*,
542-1682
(Aderhold Hall)

Agricultural Education (EAG)

600. Special Problems in Agricultural Education. 1-10 hours. (Max. 10 hours.)

Specialized training appropriate to the needs of the individual, involving intensive library investigation or the collection and analysis of data pertinent to a given problem.

702. Methods of Instruction in Agricultural Education. 5 hours.

Prerequisite: EAG 546/746.
Instructional procedures, materials, and evaluation techniques in agricultural education.

705. Problems of Teaching Agricultural Education. 5 hours.

Instructional procedures and evaluation of teaching in terms of pupil growth.

745. Internship in Agricultural Business/ Industry. 5 hours.

Prerequisite: Permission of department.
Experienced teachers of vocational agriculture spend a minimum of 50 clock hours of planned activity in a modern agricultural business for the purpose of updating their knowledge and skills in related technical agriculture and business practices.

746. Internship in Agricultural Education. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.
Identification and study of selected problems confronting a beginning teacher with emphasis upon program planning, class preparation, instructional strategies and evaluation techniques.

765. Applied Project in Agricultural Education. 5 hours.

Prerequisite: ERS 601 and permission of department.
Functional study of a problem in agricultural education significantly related to the student's professional interest and responsibility.

Business Education (EBE)

600. Special Problems in Business Education. 1-10 hours. (Max. 10 hours.)

Specialized training appropriate to the needs of the individual. The student's project may involve intensive library investigation or the collection and analysis of original data pertinent to a given problem.

601. Business Communication. 5 hours.

Theory and practice in the processes (thinking, reading, writing, speaking and listening) involved in business communication.

602. Computer Concepts and Operating Systems for Occupational Studies. 5 hours.

Prerequisite: EBE 205 or ability to type 30 wpm.
Computer hardware and software; fundamental operating procedures; data organization and representation; current trends in occupational uses of computer technology. Emphasis on instructional approaches for teaching microcomputer operating systems in occupational studies. Includes MS-DOS, Windows, and Macintosh.

699. Research Seminar in Business Education. 1-10 hours. (Max. 10 hours.)

A seminar for master's level students in business education dealing with proposed research projects and critiques of the literature.

700. Curriculum Planning in Business Education. 5 hours.

Prerequisite: Permission of department.

Education

Basic principles and procedures of curriculum construction; stresses curricular content and organization; use of job analysis.

701. Instructional Strategies for Information Processing. 5 hours.

Prerequisite: EBE 305 or equivalent and EBE 503/703 or equivalent.

Teaching theory, psychological principles of skill building, materials development, and evaluation relating to the teaching of keyboarding, word processing, machine or manual transcription, and other types of information processing.

702. Instructional Strategies for Basic Business Education. 5 hours.

Organization, standards, evaluation, textbooks, materials, special teaching techniques, motivation, individual differences in the teaching of basic business courses.

703. Word Processing Applications. 5 hours.

Prerequisite: EBE 205 or ability to type 35 WPM. Word processing skill development utilizing microcomputers with popular software package designed for administrative word processing applications. Focus is on advanced features of word processing package including merging, sorting, mathematical functions, and desktop publishing.

706. Desktop Publishing in Occupational Studies. 5 hours.

Prerequisite: Touch Keyboarding Skill.

Integration of applications for electronic publishing. Elements of page design, development of effective publications, presentations, and instructional activities involving desktop publishing knowledge, skill, and application.

707. Office Management. 5 hours.

Scientific office management; principles, equipment, supervision, information management, methods and procedures, job organization and evaluation, selection and training of office personnel.

709. Spreadsheet and Database Applications for Occupational Studies. 5 hours.

Prerequisite: EBE 205 or ability to type 30 WPM.

Applications of spreadsheets, database, and presentation software for use in occupational education teaching situations. Includes basic spreadsheet commands, graphs, data sorting, querying, and macro design. Database design and organization is also provided. Emphasis on teaching is enabled through the application of presentation software.

710. Systems Analysis and Design for Occupational Studies. 5 hours.

Prerequisite: EBE 509/709, CS 533/733, or permission of department.

Provides technical background and knowledge for teaching information system development and implementation in occupational studies. Instructional strategies for project management, documentation standards, hardware and software considerations, organizational change and personnel factors, needs analysis, feasibility studies, systems design, and structured programming in an XBASE language.

746. Internship in Teaching Business Education. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Prospective or in-service teachers develop and/or refine competencies related to innovation and experimentation in classroom teaching, individual and program development and evaluation, development and revision of instructional materials, design and revision of courses to reflect changing needs of business, recognition and treatment of individual needs and differences, and evaluation of achievement in a variety of business fields.

765. Applied Project in Business Education. 5 hours.

Prerequisite: Permission of department.

Functional study of a topic or problem in business education significantly related to the student's professional task.

776. Consumer Financial Planning. 5 hours.

Prerequisite: ECN 105 or 545/745 or equivalent.

Focuses on specific consumer problems that students encounter during school years, as well as those they will confront after leaving school; emphasizes how our economy functions, making purchases wisely, managing money to best advantage, evaluating sales and advertising practices, guarding against unwise buying practices and dishonest selling practices.

Home Economics Education (EHE)

600. Special Problems in Home Economics Education. 1-10 hours. (Max. 10 hours.)

Selected students are permitted to secure specialized training appropriate to the needs of the individual. The student's project may involve intensive library investigation of the collection and analysis of original data pertinent to a given problem.

705. Problems of Teaching Home Economics.

5 hours.

Prerequisite: Four courses in education or permission of department.

The course is based on student-identified problems and includes instructional strategies, resource materials, and readings in current publications.

746. Internship in Teaching Home Economics Education.

1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

This experience is designed to meet a special need of the student such as classroom teaching, occupational update, supervision, or administration.

760. Special Problems in Nutrition Education.

5 hours.

765. Applied Project in Home Economics Education.

5 hours.

Prerequisite: Permission of department.

The student's project will involve library investigation and the collection of original data pertinent to a chosen problem related to the student's professional task. The report will be written in acceptable thesis format.

Marketing Education (EME)**600. Special Problems in Marketing Education.**

1-10 hours. (Max. 10 hours.)

Individual or group study and research into specific problems affecting marketing education.

699. Research Seminar in Marketing Education.

1-10 hours. (Max. 10 hours.)

Overview of the research process and its implications for teaching and program management in marketing education.

700. Marketing Business Experience.

5-15 hours. (Max. 15 hours.)

Directed work experience in marketing business, with emphasis on training and developing the workforce. An analytical project is completed.

705. Problems of Teaching Marketing Education.

5 hours.

Prerequisite: Four courses in education.

Constructing, applying, and evaluating specific methods pertinent to marketing content categories in the marketing education curriculum. Traditional and innovative concepts are explored.

706. Curriculum Planning in Marketing Education.

5 hours.

Analysis of the curriculum development process in marketing education. Social and labor trends and forecasts are used to establish relevance.

709. Advertising Strategy in Marketing Education.

5 hours.

Promotional strategies used to assess employment needs in the marketing industry. An applied project is completed.

710. Teaching Sales Procedures in Marketing Education.

5 hours.

Selling methods used in various markets, from retail to industrial. The impact of employment skills and business trends on the training and development of the sales force are included. An applied project is completed.

746. Teaching Internship in Marketing Education.

5-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Individualized experiences that up-grade technical and/or professional skills. Needs are examined and innovative techniques are applied to specific situations.

765. Applied Project in Marketing Education.

5 hours.

Prerequisite: ERS 401/601.

Basic research and writing skills applied to an advanced problem in marketing education.

Occupational Studies (EOS)**600. Special Problems in Occupational Studies.**

1-10 hours. (Max. 10 hours.)

In-depth exploration of selected topics in occupational studies of interest to individual students or groups.

601. Foundations for Work and Family Life Applications.

5 hours.

Overview of philosophic and historical foundations for occupational and family life studies.

603. Supervision of Occupational Teaching.

5 hours.

Theoretical and research base for supervision of teachers in occupational studies; policies, procedures, and problems related to the supervised teaching program.

610. Principles and Practices of Career Education.

5 hours.

Role of career education in elementary, middle, and secondary schools; major theories of career development; use of standardized assessment, career information resources, and curriculum materials; special issues and trends influencing work and careers.

700M. Master's Research.

1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Research while enrolled for a master's degree under the direction of faculty members.

Education

702. Assessing Student Learning in Occupational Studies. 5 hours.

Nature and function of assessing student learning in occupational studies.

703. Organizing and Managing Work and Community Based Education Programs. 5 hours.

Prerequisite: Permission of department.

Planning, implementing, and directing various school-to-work transition models in occupational studies.

705. Problems of Teaching Occupational Studies. 5 hours.

Prerequisite: Four courses in education.

Selection, utilization, and evaluation of theories that support effective teaching in occupational studies.

706. Student Organizations in Occupational Studies. 5 hours.

Prerequisite: Four courses in education.

Student organizations in occupational studies programs emphasizing contributions of organizations to the curricula. Planning, directing, and evaluating activities such as group and individual projects. Techniques of leadership and group development are included.

707. Methods of Teaching Advanced Occupational Skills. 5 hours.

Teaching and learning paradigms that influence the learner's ability to use acquired occupational information. Gender and ethnic aspects of teaching methods, cognitive assumptions, and selection of appropriate instructional strategies for occupational studies.

708. Developing Curricula and Programs for Modern Work. 5 hours.

Curriculum theories and models for planning, developing, and evaluating programs of occupational instruction. Social, psychological, philosophical, and practical factors which influence curricular development and implementation are included. Focus is on learning theories and assumptions as applied to curriculum in occupational studies.

720. Evaluation of Programs in Occupational Studies. 5 hours.

Concepts, principles, and procedures basic to the evaluation of programs in occupational studies as a basis for program improvement.

746. Internship in Teaching Occupational Studies. 1-15 hours. (Max. 15 hours.)

Work-based program of student activities such as administration, supervision, teaching, curriculum, or staff development.

755. Students with Special Needs in Programs of Occupational Studies. 5 hours.

Learning characteristics of students with special needs including those who are disabled, economically disadvantaged, and at-risk. Implications for occupational studies are considered and modifications of curriculum and instruction are designed.

756. At-Risk Individuals in Occupational Transition. 5 hours.

Prerequisite: EOS 555/755 or EXC 300.

Current issues relevant to students from economically disadvantaged and/or culturally diverse backgrounds. Characteristics of special and economically disadvantaged populations, relationship of poverty and cultural diversity, applicable legislation, and educational and societal responsibilities.

765. Applied Project in Occupational Studies. 5 hours.

Topic or problem in occupational studies significantly related to the student's professional responsibility.

802. International Occupational Education. 5 hours.

Occupational education systems and international applications. Analysis of factors affecting international work. Planning international occupational education programs.

803. Improving Personnel Performance in Occupational Studies. 5 hours.

Theories and models of behavior in organizations and institutions offering programs in occupational studies. Theories affecting adaptation and change; determinants of individual, interpersonal, and group behavior; and institutional structures and processes are examined.

806. Administration and Supervision of Occupational Studies Programs. 5 hours.

Administration and supervision in organizations engaged in occupational education and training. Emphasizes theories of motivation, analyzing administrative structure; planning and decision making; and personnel development.

899. Research Seminar in Occupational Studies. 1-10 hours. (Max. 10 hours.)

A seminar for doctoral candidates in occupational studies dealing with the development of research skills necessary to identify an appropriate dissertation topic and prepare the prospectus necessary for admission to candidacy.

900D. Doctoral Research. 1-15 hours. (Max. 30 hours.)

Prerequisite: Permission of department.

Research while enrolled for a doctoral degree under the direction of faculty members.

901. Workforce Issues and Policy Development. 5 hours.

Prerequisite: EOS 601 or equivalent.

Major workforce issues such as sociological, economic, political and demographic trends that impact on occupational education. In-depth analysis of the nature of these issues and how they affect the policy-making process at the local, state, national and international levels.

902. Leadership Development in Occupational Studies. 5 hours.

Leadership philosophies, theories, and research as related to organizations engaged in occupational studies and training. Research and theory are translated into practice for educational leaders in occupational studies.

904. Problems in Occupational Studies. 5 hours.**930D. Doctoral Dissertation.** 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of department.

960. Educational Research in Occupational Studies. 1-15 hours. (Max. 15 hours.)

Critical evaluation of research literature, research paradigms, future research needs, and research design/methodology in occupational studies. A research study will be designed.

963. Critique of Educational Literature in Occupational Studies. 5 hours.

Research studies, dissertations, and journal articles in occupational studies are analyzed by doctoral students in preparation for the development of the dissertation proposal.

980. Practicum in Occupational Studies. 1-15 hours. (Max. 15 hours.)

Guided learning opportunities allowing students to test principles in the field and to relate theory to practice in occupational settings.

Technological Studies (ETS)**600. Special Problems in Technological Studies.** 1-10 hours. (Max. 10 hours.)

Special problems related to updating occupational skills, developing curriculum materials and/or developing additional teaching competencies in the technical field or specialty.

635. Introduction to Teaching Technological Studies. 5 hours.

Prerequisite: Appropriate occupational experience. Standards, concepts, practices, and procedures in the development of curricula for areas within technological studies.

636. Instructional Strategies and Management Techniques in Technological Studies. 5 hours.

Prerequisite: Appropriate occupational experience. Principles and practices of teaching manipulative skills and related technology.

701. Communication Systems. 5 hours.

Communication technology in business and industry. Use of microcomputer applications for computer graphics, desktop publishing, electronic presentation, and telecommunications including layout and design principles and procedures, graphic production systems, photographic processes, societal impacts, and innovative technologies.

702. Production Systems. 5 hours.

Manufacturing through the design, planning, and development of a manufactured product employing activities that center around materials processing.

703. Energy Systems. 5 hours.

Present and future applications of the technical, economic, and environmental aspects of energy systems and evaluation of the advantages and disadvantages.

704. Research and Experimentation in Technological Studies. 5 hours.

Pre-designed and original research and experimentation in a problem-solving format. Use of scientific and technological methods to solve problems. Suitable research and experimentation activities will be developed for technology education programs in secondary schools.

705. Problems of Teaching Technological Studies. 5 hours.

Instructional procedures and evaluation in teaching technical subjects. Current issues in technological education are stressed.

708. Critical Issues in Technological Studies. 5 hours.

Current problems and issues, contemporary trends, strategies for initiating change, and resources needed to implement changes in technological studies.

712. Needs Analysis in Technological Studies. 5 hours.

Techniques in analyzing occupations, industry, human resources, communities and jobs within the areas of technological studies education to determine instructional and training content.

719. Coordinating Cooperative and Work-based programs. 5 hours.

Organization and coordination of cooperative and work-based education programs. Emphasis is on preparing individuals for the roles and duties of work-based program coordinators.

Education

746. Internship in Technological Studies. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Work-based program of student activities such as administration, supervision, teaching, curriculum, or staff development in an existing technological studies program.

765. Applied Project in Technological Studies. 5 hours.

Prerequisite: Permission of department.

Topic or problem in technological studies significantly related to the student's professional responsibility.

Reading Education (ERD)

David Reinking, *Head*

Michelle Commeyras, *Graduate Coordinator*

542-2718

(Aderhold Hall)

600. Special Problems in Reading Education. 1-10 hours. (Max. 10 hours.)

Selected students are permitted to secure specialized training appropriate to the needs of the individual. The student's project may involve intensive library investigation of the collection and analysis of original data pertinent to a given problem.

601. The Teaching of Reading. 5 hours.

A systematic coverage of the teaching of reading, including methods, techniques, and materials, from first through twelfth grades.

602. The Analysis and Correction of Reading Disabilities. 5 hours.

Prerequisite: ERD 401/601 or permission of department.

Causes of reading disability; methods of diagnosis; procedures and materials for corrective work, group and individual.

603. Teaching Reading in the Secondary School. 5 hours.

The development of reading skills needed by students in grades 7-12 for success in school subjects.

604. (EAD) Adult Literacy—Basic Reading Needs. 5 hours.

An examination of the causal factors contributing to adult literacy and of those methods and materials appropriate for teaching adults to read.

605. Materials for Reading Instruction. 5 hours.

Prerequisite: ERD 401/601.

An in-depth examination of reading materials from both the theoretical and practical point of view.

606. Content Area Reading. 5 hours.

Prerequisite: An undergraduate or graduate level course in reading and permission of department. An in-depth study of teaching reading in various subject matter areas. Emphasis placed on informal assessment procedures and appropriate instruction strategies to facilitate student reading comprehension in content classrooms.

607. Middle School Reading. 5 hours.

Prerequisite: ERD 401/601 or equivalent; permission of department.

Survey of practices, materials, and evaluation techniques utilized in the teaching of reading at the middle school level. Emphasis will be placed on the comprehensive reading program for middle school readers.

608. Teaching College Reading. 5 hours.

Prerequisite: Permission of department.

Provides a foundation in the history and development of college reading programs; analyzes instructional methods and materials; examines the reading and studying demands at the college level and the nature of the college-level reader; analyzes extant research and evaluation in the area.

642. Reading and Written Discourse for Early Childhood Education. 1-5 hours.

This course is designed to study the reading program in the elementary school. Major emphasis will be placed on the developmental reading program for kindergarten through grade 3. Content will be divided into 1) the reading process, 2) the reading child, and 3) a special emphasis upon the practical aspects of reading instruction.

700M. Master's Research. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Research while enrolled for a master's degree under the direction of faculty members.

711. Computer-Based Instruction in Reading Education. 5 hours.

Prerequisite: ERD 401/601 or equivalent.

Classroom applications of computer technology to the teaching of reading, including reading and writing activities across the curriculum. Attention is given to integrating computer-based activities with other instructional methods and materials.

730M. Master's Thesis. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

746. Internship in Teaching Reading Education. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Designed to provide reading education majors lacking actual experience teaching, experience in managing and teaching in a developmental read-

ing setting. The intern is expected to plan instruction, manage reading groups, and teach the necessary reading skills—all in the developmental sequence defined by the classroom's materials, teacher, and instructor.

750. Supervision of the Reading Program. 5 hours.

Prerequisite: EDL 722.

Principles of supervising a total school reading program. Study of inservice reading education, reading curriculum design, and systematic coverage of innovative school reading programs, as well as methods of including reading instruction in all subject areas.

815. Topics in Computer-Based Reading and Writing. 5 hours.

Research and theory related to computer-based written discourse. Electronic and printed texts are compared, emphasizing implications for reading and writing texts, for developing literacy, and for conducting research.

817. (EPY) Psychology of Reading. 5 hours.

Prerequisite: ERD 401/601; recommended, ERD 602.

Psychological correlates of reading ability and disability; psychological bases for instructional methods and materials.

846. Internship in College Reading. 5 hours.

Prerequisite: ERD 608 or permission of department. Observation, planning, implementation, and assessment of college reading instruction in Academic Assistance program on campus.

850. Research in College Reading. 5 hours.

Prerequisite: ERD 608 or permission of department.

Current research and methodological issues in conducting research in college reading. Students write a research proposal as a culminating activity.

888. Theories of Reading Comprehension. 5 hours.

Prerequisite: ERD 401/601 or equivalent course in the teaching of reading.

Reading comprehension theories in the development of curriculum, evaluation of teaching, and the design and interpretation of research. Elemental, information processing, psycholinguistic, schema, and semiotic theories are examined.

899. Research Seminar in Reading Education. 1-10 hours. (Max. 10 hours.)

Prerequisite: Admission to doctoral program. Required seminar for doctoral candidates in reading education. Activities include designing and defending dissertation project, evaluating

research of others, and reviewing selected recent research/theoretical/practical publications in reading.

900. Trends and Practices in the Teaching of Reading. 5 hours.

Prerequisite: ERD 401/601 or equivalent or permission of department.

An intensive analysis of recent trends and practices in the teaching of reading. An advanced course in which students read widely on the teaching of reading and also intensively on one or more selected topics. A seminar-type course. Emphasis on analyzing critically the research literature on trends and practices in the teaching of reading.

900D. Doctoral Research. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Research while enrolled for a doctoral degree under the direction of faculty members.

930D. Doctoral Dissertation. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

960. Educational Research in Reading Education. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Research in reading education. To provide depth in the field of a student's specialization through pure or applied research done in collaboration with the major instructor.

963. Critique of Educational Literature in Reading Education. 5 hours.

Prerequisite: Open to EdS and doctoral students only.

Required course for EdS and doctoral candidates. Activities include locating, evaluating, and reporting on selected reading research studies (past and present); reviewing and evaluating recent summaries of reading research; developing general understanding of current research findings in selected areas; and evaluating the contributions of persons to the field of reading.

970. Internship in Reading Education. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

A study-work course; class or conference study of problems in reading instruction encountered with remainder of time in application of principles to regular job.

980. Practicum in Reading Education. 1-15 hours. (Max. 15 hours.)

Prerequisite: ERD 602 or equivalent and permission of department.

Instruction in the administration and interpretation of formal and informal reading tests. Also tests and equipment in several related areas are

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used for evaluation of children with reading problems who are tested by students enrolled in the course.

Science Education (ESC)

Joseph P. Riley, II, *Head*
J. Steve Oliver, *Graduate Coordinator*,
542-1763
(Aderhold Hall)

600. Special Problems in Science Education. 1-10 hours. (Max. 10 hours.)

Selected students are permitted to secure specialized training appropriate to the needs of the individual. The student's project may involve intensive library investigation or the collection and analysis of original data pertinent to a given problem.

620. Science, Technology and Society. 5 hours. Prerequisite: Experience teaching science, K-12 or permission of department.

The role of society in science and technology. Emphasis is placed on incorporating science, technology, and society (STS) related goals and activities in the K-12 curriculum. A special emphasis is placed on STS issues in the state of Georgia through field trips and readings.

623. Environmental Science Education. 5 hours. Prerequisite: Permission of department.

This course focuses on environmental curriculum materials and how those materials can be implemented in the science classroom.

642. Science for Early Childhood Education. 5 hours.

Course especially designed for graduate majors in early childhood education.

645. Science Curriculum for the Secondary School. 5 hours. Prerequisite: ESC 441.

Science curriculum materials suitable for use in grades 7-12 are analyzed for appropriateness to achieve specific instructional objectives. The development and selection of curriculum materials are related to purposes of science instruction. The range of materials needed for pupils in grades 7-12 is included.

646. Methods of Teaching Science in the Secondary School. 5 hours. Prerequisite: ESC 441.

Using classroom, laboratory and field experiences, skills in science teaching methods, instructional materials and evaluation suitable for pupils in grades 7-12 are developed. These include using

teaching strategies with different instructional materials and evaluation schemes for effective science instruction.

699. Research Seminar in Science Education. 1-10 hours.

A seminar for master's level students in science education dealing with the acquisition and application of research and evaluation skills for planning and interpreting science education research.

700M. Master's Research. 1-15 hours. (Max. 30 hours.)

Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

702. Teaching Science in Elementary School. 5 hours.

Prerequisite: Permission of department.
Instructional procedures, materials, and evaluation techniques in teaching biological and physical science through scientific process in the elementary school.

703. Teaching Science to Students with Special Education Needs. 5 hours.

Develops an understanding of the basis and practice of modifying science programs/teaching for students with special educational needs and introduces skills for modifying science programs/teaching strategies.

704. Teaching Strategies for Middle and Secondary School Science Teachers. 5 hours.

Prerequisite: EMS 303.
Designed to improve the instructional competencies of students preparing to teach science in the middle school. The course includes preparation in the planning and implementation of instructional strategies.

706. Computer-Based Instruction in Science Education. 5 hours.

Prerequisite: ESC 448 and/or experience with instructional computing including use of BASIC or PILOT.

Application of computers to science teaching. Use of the computer in algorithmic problem solving, management, record keeping, and data manipulation is covered. Attention is given to fully integrating computers into classroom activities. Materials development with instructional languages is included.

708. Curriculum Planning in Science Education. 5 hours.

Prerequisite: Teaching certificate or equivalent.
Problems of the science curriculum from early childhood to high school concerns are studied. The social, psychological, philosophical and prac-

tical influences on science curriculum are applied to the process of selecting and developing curriculum materials.

730M. Master's Thesis. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

746. Internship in Teaching Science. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Supervised internship in planning and teaching science lessons. Periodical seminars are held to discuss common problems and their solutions.

765. Applied Project in Science Education. 5 hours.

Prerequisite: Permission of department.

The fundamental study of a topic or problem in science education significantly related to the student's professional responsibilities.

806. Affective Domains in Science Education. 5 hours.

Prerequisite: EPY 810.

This course deals with fundamental values embodied in science and technology by demonstrating how science educators can formulate objectives, use instructional techniques, and implement evaluation procedures directed toward important outcomes that relate to the affective domain.

812. (PS) Science Writing and Literature Retrieval. 5 hours.

See PS 812.

820. Science Supervision. 5 hours.

Skills are developed in role definition, conducting needs assessments, designing and conducting science teacher workshops, and planning and executing comprehensive science program evaluations.

899. Research Seminar in Science Education. 1-10 hours. (Max. 10 hours.)

Doctoral students integrate theoretical construction in research design and analysis into practical application to science education research, both published and proposed. Each doctoral candidate is expected to attend at least four quarters or a minimum of eight quarter hours of credit is required.

900D. Doctoral Research. 1-15 hours. (Max. 30 hours.)

Prerequisite: Permission of department.

Research while enrolled for a doctoral degree under the direction of faculty members.

902. History and Theory of Science Education. 5 hours.

The course's goal is to enable students to establish a reference scheme within which they can

understand how our past has influenced today's science teaching practices and to predict future science teaching practices. Contributions by science teachers and learning theorists which have influenced classroom practices and curriculum development are examined.

930D. Doctoral Dissertation. 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of department.

960. Educational Research in Science Education. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

A research practicum for the student who is involved in a research problem. It may involve such activities as searching the literature, collection of data, or processing data.

963. Critique of Educational Literature in Science Education. 5 hours.

Critical interpretation and evaluation of selected research and theoretical writings in science education. Each student also completes a critical review of the literature in an area of special interest.

970. Internship in Science Education. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

A study of problems related to the development of instructional material and their use in classroom settings based on the student's professional responsibility.

Social Science Education (ESS)

Ronald L. VanSickle, *Head and Graduate Coordinator, 542-7265 (Tucker Hall)*

600. Special Problems in Social Science Education. 1-10 hours. (Max. 10 hours.)

Prerequisite: Eligible for teacher certification.

Intensive study of a problem in social science education through library research or collection and analysis of primary data.

610. (HIS) Teaching United States History. 5 hours.

Classic historiography and current debates among historians over major themes and events in U.S. history. Examination of ways in which this historical scholarship can be incorporated into social studies teaching. Evaluation of materials and methods used to teach U.S. history in secondary and middle schools.

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635. Social Science Curriculum in Secondary Schools. 5 hours.

Prerequisite: Admission to Teacher Education. Current status and trends with illustrations of selected teaching strategies and media for both cognitive and affective learning.

636. Methods of Teaching Social Science in Secondary Schools. 5 hours.

Prerequisite: Admission to Teacher Education. Development of instructional objectives and the examination and application of instructional procedures, utilization of media and methods of evaluation.

642. Social Studies for the Young Child. 5 hours.

An examination and application of social studies curriculum models relevant to instruction for pre-school and primary level children.

699. Research Seminar in Social Science Education. 5 hours.

Consideration of fundamentals of research in social science education. Required of master's degree candidates.

700M. Master's Research. 1-15 hours. (Max. 20 hours.)

Prerequisite: Permission of department. Research while enrolled for a master's degree under the direction of faculty members.

701. Teaching of Geography. 5 hours.

Prerequisite: One course in geography, forty hours of social science.

Geographic principles and the history of geography in the school curriculum, literature of the field, including textbooks; the application of special techniques, i.e., field methods and map study; and geographical evaluation.

704. Teaching Social Studies in the Middle Grades. 5 hours.

Prerequisite: Eligible for teacher certification. The examination and application of instructional procedures and materials focusing upon the cognitive and affective processes relevant to middle grades social studies education.

705. Problems of Teaching Secondary Social Studies. 5 hours.

Selection, utilization, and evaluation of teaching procedures in history and the social sciences to various ability levels of students.

708. Curriculum Planning in Social Sciences. 5 hours.

Selection, utilization, and evaluation of curricular content and materials in history and the social sciences appropriate to various ability levels of students.

715. (ANT) Anthropology of Education. 5 hours.

This survey of cultural aspects of educational processes, institutions, and issues in societies around the world is organized around comparative analysis. Topics include education as cultural process and social function, as sociocultural structure, as cultural transaction, and as cultural product.

720. Economic Education in the Social Science Curriculum. 5 hours.

Corequisite: ECN 545/745.

Examination and evaluation of instructional strategies and materials for teaching basic economic concepts in an integrated K-12 social science curriculum with emphasis on utilizing a decision-making model for analyzing contemporary economic problems.

722. Teaching Politics, Government, and Citizenship. 5 hours.

Prerequisite: ESS 436 and an introductory political science course.

Review of fundamentals and current issues in American politics from lecture, readings, and roundtable discussions with political leaders; examination of the role of teachers and schools in political socialization; and demonstration and analysis of teaching procedures and materials for improving political/citizenship education in the schools.

725. Values Education for Citizenship. 5 hours.

Theory, research, and classroom practice in values education, focusing specifically on the development of values needed for citizenship in a democracy. Various contemporary and historic approaches to values education, along with curriculum materials, and state and district policies.

730M. Master's Thesis. 1-15 hours. (Max. 30 hours.)

Prerequisite: Permission of department.

746. Internship in Teaching Social Science. 1-15 hours. (Max. 15 hours.)

Teaching internship in a public school under supervision of a classroom teacher and a faculty member in social science education.

765. Applied Project in Social Science Education. 5 hours.

Prerequisite: Candidate for T-5 or T-6 certification. Applied research project in social science education related to a present or potential teaching position.

801. History of Social Studies Education. 5 hours.

Prerequisite: ESS 708 or 642 or 504/704.

Review and analysis of the major themes, ideas, and personalities in the historical development of curriculum and instruction in social studies in the U.S. since 1880, including comparisons to selected other nations.

899. Research Seminar in Social Science Education. 1-10 hours. (Max. 10 hours.)

Prerequisite: ESS 699 or equivalent.
Consideration of research design problems in social science education. A minimum of five hours credit is required of doctoral candidates.

900D. Doctoral Research. 1-15 hours. (Max. 20 hours.)

Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

930D. Doctoral Dissertation. 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of department.

960. Research in Social Science Education. 1-15 hours. (Max. 15 hours.)

Directed independent research in social science education.

963. Critique of Educational Literature in Social Science Education. 5 hours.

A review and analysis of research and other literature in social science education.

970. Internship in Social Science Education. 1-15 hours. (Max. 15 hours.)

Supervised internship in instruction, curriculum development, supervision, or evaluation in social science education.

Social Work Education (ESW)

James A. Pippin, *Graduate Coordinator*,
542-3364
(Tucker Hall)

963. Critique of Educational Literature in School Social Work. 5 hours.

Prerequisite: Permission of department.
Critical interpretation and evaluation of research and theoretical writing in the field of education. Each student will make critical reviews of significant education literature in the area of specialization.

980. Practicum in School Social Work. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Supervised practice in approved institutional setting. Close supervision will be maintained by a member of the faculty.

Special Education (SPE)

Cheri A. Hoy, *Head*
David L. Gast, *Graduate Coordinator*,
542-4617
(Aderhold Hall)

The Department of Special Education offers the following degrees with a major in special education: MEd, EdS, and PhD.

600. Directed Study in Special Education. 1-10 hours. (Max. 10 hours.)

Prerequisite: Permission of department.
Students are engaged in specialized training appropriate to the needs of selected individual.

700. Introduction to Special Education. 5 hours.

Prerequisite: Permission of department.
Characteristics of individuals with disabilities. A survey of causes and interventions is included.

700M. Master's Research. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

701. Assessment of Individuals with Disabilities. 5 hours.

Prerequisite: [SPE 300 or 700] or permission of department.
Corequisite: SPE 709C.

Theory and practice in the use of standardized and informal evaluation procedures used with individuals with disabilities. Experiences in interpreting results and writing reports.

704. Characteristics of Individuals with Mental Retardation. 5 hours.

Prerequisite: [SPE 300 or 700] and permission of department.

Types, nature, and causes of mental retardation and implications for adjustment and education. Issues in eligibility and placement of individuals in special programs.

706. Teaching Individuals with Mild Mental Retardation. 5 hours.

Prerequisite: SPE 504/704 and permission of department.

Study and selection of methods and materials used in teaching students with mild mental retardation. Emphasis is on direct instruction of functional skills.

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707. Secondary School Programming for the Mentally Retarded. 5 hours.

Prerequisite: Permission of department.

Study will emphasize the needs of the adolescent and young adult mentally retarded: preoccupational, occupational and related experiences, home and family living, civic responsibility, and community living. The relationship of the teacher as a counselor and the utilization of community resources will also be stressed.

708. Curriculum for Individuals with Mental Retardation. 5 hours.

Prerequisite: SPE 504/704 and permission of department.

Development, modification, and adaptation of curricular approaches to the education of individuals with mental retardation. Development of individualized programs, including goals and objectives.

709ACDEU. Practicum in Special Education. 1-15 hours. (Max. 15 hours.)

Prerequisite: [SPE 300 or 700] and permission of department.

- A. Interrelated Classrooms.
- C. Assessment.
- D. Learning Disabilities.
- E. Behavioral Disorders.
- U. Early Childhood.

709B. Practicum in Special Education – Mild Mental Retardation. 1-15 hours. (Max. 15 hours.)

Prerequisite: [SPE 300 or 700] and permission of department.

Supervised field experience related to teaching individuals with mild mental retardation. Application of methods and procedures learned in SPE 506/706 and previous courses are practiced on site.

709S. Practicum in Special Education – Moderate to Severe Mental Retardation. 1-15 hours. (Max. 15 hours.)

Prerequisite: [SPE 300 or 700] and permission of department.

Supervised field experience related to teaching individuals with moderate to severe mental retardation. Application of methods and procedures learned in SPE 595/795 and previous courses are practiced on site.

710. Special Education Technology Practicum. 1-5 hours. (Max. 10 hours.)

Prerequisite: SPE 750 or permission of department.

Application of special education technology for individuals with disabilities. Students will visit organizations using special education technology to teach individuals with disabilities. Students participate in experiences which disseminate special education technology information and skills to other professionals.

712. Characteristics of Individuals with Learning Disabilities. 5 hours.

Prerequisite: Permission of department.

In-depth examination of the literature on the characteristics of individuals with learning disabilities. Current theories and issues surrounding this life-long condition.

713. Written Language Disorders. 5 hours.

Prerequisite: [SPE 300 or 700] and permission of department.

Sociolinguistic and neurolinguistic study of the written language disorders of individuals with disabilities. Identification of error patterns, assessment tools, and instructional techniques in written language.

714. Teaching Students with Learning Disabilities. 5 hours.

Prerequisite: SPE 712 and permission of department.

In-depth examination of teaching procedures which promote cognitive, social, oral language, and achievement gains for individuals with learning disabilities.

715. Orthopedic Impairments: Causes, Characteristics, and Services. 5 hours.

Prerequisite: [SPE 300 or 700] and permission of department.

Causes and characteristics of persons with orthopedic impairments and discussion of physical management strategies. Emphasis is on a transdisciplinary service delivery model.

716. Intervention Strategies for Persons with Orthopedic Impairments. 5 hours.

Prerequisite: Four courses in education, plus SPE 715, and permission of department.

Strategies for increasing the functional independence of persons with orthopedic impairments through the use of proper positioning, augmentative communication, and adaptive/prosthetic equipment.

720. Characteristics of Individuals with Behavioral Disorders. 5 hours.

Prerequisite: [SPE 300 or 700] and permission of department.

Characteristics of behavioral disorders including definition, eligibility, assessment, causal factors, characteristics of various disorders, and current issues.

721. Teaching Individuals with Behavioral Disorders. 5 hours.

Prerequisite: SPE 520/720 and permission of department.

Procedures for planning and implementing adaptations, and managing disordered behavior in educational and community settings. Emphases include social skills curriculum development and implementation of pre- and post-referral consulta-

tion models, designing interventions which promote generalization of skills, and policies and strategies for effecting inclusion.

722. Strategies for Adolescents with Learning and Behavioral Disabilities. 5 hours.

Prerequisite: Permission of department.

Policies, transition models, curricula and instructional methods which predict successful transitions by individuals with behavioral and learning difficulties to middle and secondary schools, and to post-school environments. Community surveys, ecological inventories, and community-based training are indexed to social, academic and occupational skills.

728. Characteristics and Assessment of Preschool Children with Disabilities. 5 hours.

Prerequisite: [SPE 300 or 700] and permission of department.

Characteristics and assessment of preschool children with handicapping conditions. Topics include history and rationale for early intervention, typical and atypical child development, screening, and formal and informal assessment strategies are studied.

729. Curriculum and Methods in Early Childhood Special Education. 5 hours.

Prerequisite: SPE 728 and permission of department.

Program models, instructional methods, and curriculum in early childhood education. Also includes related topics: interagency collaboration and working with families.

730M. Master's Thesis. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

733. Perspectives on Secondary Transitional Programming. 5 hours.

Prerequisite: [SPE 300 or 700] and permission of department.

Special educator's role in the habilitation of adolescents and adults with disabilities. Current efforts to guarantee employment opportunities and develop programs for adolescents with disabilities in the school and in the community.

734. Curriculum Development in Secondary Transitional Special Education Programs. 5 hours.

Prerequisite: SPE 733 and permission of department.

Selection, modification, and development of appropriate curricula for students with disabilities in secondary schools. Approaches to the development of prevocational curricula, techniques for adapting existing curricula to individual needs, and the quality and appropriateness of secondary curricula materials.

740. Individuals with Disabilities and Their Families. 5 hours.

Prerequisite: [SPE 300 or 700] and permission of department.

Impact of an individual with disabilities on the family system. Emphasis is on preparing students to participate in partnership with families.

741. Advanced Behavior Analysis and Management. 5 hours.

Prerequisite: Permission of department.

Principles and procedures of applied behavior analysis, with emphasis on designing and validating interventions which improve socially significant behavior.

746A. Internship in Interrelated Classrooms. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

746B. Internship in Mild Mental Retardation. 1-15 hours. (Max. 15 hours.)

Prerequisite: SPE 506/706 and 508/708 and permission of department.

746C. Internship in Hospital/Homebound Teaching. 1-15 hours. (Max. 15 hours.)

Prerequisite: SPE 504/704 and permission of department.

746D. Internship in Learning Disabilities. 1-15 hours. (Max. 15 hours.)

Prerequisite: SPE 712 and 714 and permission of department.

746E. Internship in Behavioral Disorders. 1-15 hours. (Max. 15 hours.)

Prerequisite: SPE 521/721 and [SPE 505 or 741] and SPE 509E/709E and permission of department.

746M. Internship in Orthopedic Impairments. 1-15 hours. (Max. 15 hours.)

Prerequisite: SPE 715 and 716 and permission of department.

746S. Internship in Moderate to Severe Mental Retardation. 1-15 hours. (Max. 15 hours.)

Prerequisite: SPE 504/704 and 509S/709S and 595/795 and permission of department.

746U. Internship in Early Childhood Special Education. 1-15 hours. (Max. 15 hours.)

Prerequisite: SPE 729 and permission of department.

750. Applications in Special Education Technology. 5 hours.

Prerequisite: SPE 700 and permission of department.

Hardware, software, adaptive devices, augmentative/alternative communication devices and interactive systems and the application of these

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with individuals with all types of disabilities. Emphasis is placed on the integration of computer-based technology into the curriculum.

763. Critique of Literature in Special Education. 5 hours.

Prerequisite: Permission of department.
Readings and library research related to contemporary issues in special education.

765. Applied Project in Special Education. 1-10 hours. (Max. 10 hours.)

Prerequisite: Permission of department.

793. Seminar in Severe Developmental Disabilities. 5 hours.

Prerequisite: Permission of department.
Current litigation, legislation, and public policy issues related to the education and delivery of services to individuals with severe and multiple disabilities and their families.

794. Behavioral Methods of Instruction. 5 hours.

Prerequisite: SPE 741 and [SPE 521/721 or equivalent course in applied behavior analysis] and permission of department.

Application of behavioral psychology learning principles and procedures in the design of instructional programs for students with severe learning problems. Focus is on data-based instructional strategies which facilitate behavior acquisition, fluency, maintenance, and generalization.

795. Teaching Individuals with Moderate to Severe Disabilities. 5 hours.

Prerequisite: SPE 503 and 504/704 and permission of department.

Preferred teaching practices for individuals who have moderate to severe disabilities. Design of appropriate curriculum, assessment of present level of performance, and behavioral methods of instruction.

801. Clinical Assessment in Special Education. 5 hours.

Prerequisite: SPE 701 and permission of department.

Appraisal of advanced psychometric instruments, as well as functional and dynamic techniques required for the assessment and program planning of children, adolescents, and adults with disabilities.

831. Analysis of Research on Social Behavior. 5 hours.

Prerequisite: Permission of department.
Seminar on origins and treatment of socially disordered behavior. Emphasis is on critical analysis of applied literature.

832. Law and Education of Individuals with Disabilities. 5 hours.

Prerequisite: [SPE 300 or 700] and permission of department.

Court rulings, legislative enactments, administrative regulations, and their impact on the function of general and special education in providing public education for individuals with disabilities.

837. Single Subject Research Methodology in Special Education. 5 hours.

Prerequisite: Permission of department.
Presentation and discussion of applied research conducted in educational settings using single subject experimental designs. Attention is on direct and repeated measurement, internal validity, and external validity issues.

899. Research Seminar in Special Education. 1-10 hours. (Max. 10 hours.)

Prerequisite: Limited to EdS and PhD students and permission of department.
Current issues in special education research.

900D. Doctoral Research. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.
Research while enrolled for a doctoral degree under the direction of faculty members.

930D. Doctoral Dissertation. 1-15 hours. (Max. 30 hours.)

Prerequisite: Permission of department.

960. Educational Research in Special Education. 1-15 hours. (Max. 15 hours.)

Prerequisite: Advanced graduate standing and permission of department.
Social, psychological, and physical aspects of the cause and effect of disabilities.

963. Critique of Current Issues in Special Education. 5 hours.

Prerequisite: Advanced graduate standing and permission of department.
Seminar on current issues and practices related to special education.

980. Practicum in Special Education. 1-15 hours. (Max. 15 hours.)

Prerequisite: Advanced graduate standing and permission of department.

993. Internship: College Teaching in Special Education. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

994. Internship: Supervision of Special Education Teachers. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

English (ENG)

Hugh Ruppensburg, *Head*
Douglas A. Anderson, *Graduate*
Coordinator, 542-2197
(Park Hall)

Doctoral language requirement: reading knowledge in two foreign languages or proficiency in one approved foreign language. Other requirements for the MA, MAT and PhD degrees, and up-to-date course listings, may be obtained from the coordinator of graduate studies in English. There will probably be some new courses that are not listed below.

The English department also participates in MA and PhD programs in linguistics. Further information for these programs appears separately under Linguistics.

600T. (LIN) History of the English Language. 5 hours.

The development of present English through the stages of Old English, Middle English, and early Modern English. Emphasis is placed on the growth of the vocabulary and changes in pronunciation, although grammatical changes receive some attention. Elementary phonetics and phonemics are studied in connection with sound change and dialectal variations in pronunciation.

601T. (LIN) American English. 5 hours.

The history, present status, and future prospects of American English, including standards and internal variation.

602T. (LIN) Language Variation. 5 hours.

See LIN 602T.

606T. (LIN) Old English. 5 hours.

The language and literature of England before the Norman Conquest, with reading of selected texts.

607T. (LIN) Middle English. 5 hours.

Prerequisite: ENG/LIN 400T/600T or ENG/LIN 406T/606T.

The English language of the Middle English period, including the development of the language from the end of the Old English period through the transition to Modern English.

611T. (LIN) English Grammar. 5 hours.

English grammar in the scholarly tradition of Curme and Jespersen.

613T. English Grammar: Phonology and Morphology. 5 hours.

The phonological and morphological structure of Modern English.

615T. (LIN) Transformational Syntax. 5 hours.

See LIN 615T.

616T. (LIN) Advanced Generative Syntax. 5 hours.

See LIN 616T.

617T. (LIN) Second Language Acquisition. 5 hours.

Prerequisite: ENG/LIN 411T/611T.

Study of linguistic theories of second language acquisition, with emphasis on the acquisition of English. Topics include order of acquisition, socio-cultural factors with linguistic bases, and neurolinguistic models.

618T. (LIN) ESL Error Analysis. 5 hours.

Prerequisite: ENG/LIN 411T/611T.

Psycholinguistic theory applied to problems in second language learning, and the prediction of language behavior through the use of contrastive analysis.

619T. Study of the English Language. 5 hours.

The nature, structure, and varieties of the English language in vocabulary, grammar, pronunciation, and semantics.

621T. Old English Literature. 5 hours.

Prerequisite: ENG/LIN 406T/606T or reading knowledge of Old English.

Prose and poetry of the Old English period, exclusive of *Beowulf*, with emphasis on poetry. Works will be read in Old English, with supplementary translations.

622T. Beowulf. 5 hours.

Prerequisite: ENG/LIN 406T/606T or reading knowledge of Old English.

The poem in the original Old English, with attention to important critical studies.

624T. Chaucer. 5 hours.

Canterbury Tales, *Troilus and Criseyde*, and minor poems.

625T. Medieval Drama. 5 hours.

English drama from its beginnings to the opening of the public theater in 1576.

626T. Middle English Literature. 5 hours.

Prerequisite: Admission to Graduate School.

English literature of the 13th, 14th, and 15th centuries, exclusive of Chaucer and the drama.

630T. Elizabethan Literature. 5 hours.

Poetry and prose of the earlier English Renaissance, such as works by More, Sidney, and Spenser, and Shakespeare's sonnets.

English

631T. Spenser. 5 hours.

A study of *The Faerie Queene*, *The Shepheardes Calender*, and the *Amoretti*, with attention to Spenser's other works and his literary context.

632G. Shakespeare: Part I. 5 hours.

The early plays.

633G. Shakespeare: Part II. 5 hours.

The later plays.

634T. Renaissance Drama. 5 hours.

English drama from 1576 to 1642, exclusive of Shakespeare, emphasizing dramatists such as Marlowe, Jonson, Webster, and Middleton.

635T. 17th-Century Poetry. 5 hours.

Major English poets of the period, such as Donne, Jonson, Herbert, and Marvell.

636T. 17th-Century Prose. 5 hours.

Works of fiction and non-fiction by major writers of the later English Renaissance, such as Donne, Bacon, Hobbes, Browne, Milton, and Bunyan.

637T. Milton. 5 hours.

The works and times of John Milton.

640T. Restoration and 18th-Century English Drama. 5 hours.

Outstanding dramatists of the period: Dryden, Wycherley, Addison, Goldsmith, Sheridan, and others.

642T. Early 18th-Century Prose and Poetry. 5 hours.

Poetry and prose of the earlier 18th Century, emphasizing Addison, Steele, Defoe, Swift, and Pope.

643T. The 18th-Century English Novel. 5 hours.

The English novel from Defoe to 1800, including novels by Richardson, Fielding, Smollett, and Sterne, the Gothic novel, and the novel of purpose.

644T. The Age of Johnson. 5 hours.

English literature of the late 18th Century, emphasizing Johnson, Boswell, and their group.

645T. William Blake. 5 hours.

The works, times, and critical heritage of William Blake.

650T. Early Romantic Literature. 5 hours.

Wordsworth, Coleridge, and other writers.

651T. Later Romantic Literature. 5 hours.

Byron, Shelley, Keats, and other writers.

652T. The 19th-Century British Novel. 5 hours.

The development of the British novel in the 19th Century.

653T. Victorian Poetry. 5 hours.

Tennyson, Browning, and Arnold.

654T. Victorian Prose. 5 hours.

A study of the major Victorian prose writers, chiefly Carlyle, Newman, Mill, Ruskin, and Arnold.

660T. Women and Literature. 5 hours.

Study of topics in the theory and practical criticism of literature in English by or about women.

664T. Film as Literature. 5 hours.

Prerequisite: Permission of department.

The interpretation of films, with emphasis on the relationships between motion pictures and British and American literature.

665T. Modern Drama. 5 hours.

The drama of Europe and America from the realism of Ibsen and Strindberg to the present.

666T. 20th-Century British Poetry. 5 hours.

British poetry since the 1890's.

667T. The 20th-Century British Novel. 5 hours.

Fiction of such representative British novelists for the 20th Century as Bowen, Conrad, Forster, Joyce, Lawrence, Waugh, Woolf, and Greene.

668T. Modern Irish Literature. 5 hours.

Fiction, poetry and drama of the Irish Renaissance and after.

670T. Early American Literature. 5 hours.

American literature from the beginning through Irving.

671T. American Romanticism. 5 hours.

Representative works of the Romantics and Transcendentalists, with emphasis on Poe, Emerson, Thoreau, Hawthorne, Melville, Whitman, and Dickinson.

672T. American Realism and Naturalism. 5 hours.

Representative work of the realists and naturalists, with emphasis on James, Clemens, Crane, Norris, and Dreiser.

673T. American Poetry to 1900. 5 hours.

A study of representative poets from Edward Taylor through Stephen Crane.

674T. The American Novel to 1900. 5 hours.

The works of major novelists from Cooper through Norris.

675T. Southern Literature. 5 hours.

Literary achievements in the South from 1610 to the present, with emphasis upon Poe, Clemens, and Faulkner.

676T. 20th-Century American Poetry. 5 hours.

American Poetry from the Imagist Movement to the present.

677T. The 20th-Century American Novel. 5 hours.

The American novel since World War I.

680T. Advanced Creative Writing. 5 hours.

Prerequisite: Permission of department.

Advanced instruction in the craftsmanship of poetry and fiction writing.

681T. History of Literary Criticism. 5 hours.

A survey of literary theory from Plato to the early modern period, examining changing concepts of genre, style, and the social function of literature.

682T. Modern Literary Theory and Criticism. 5 hours.

Major themes and movements in 20th-Century criticism.

684T. Theory and Practice of English Prose Style. 5 hours.

Theory and practice of English prose style from classical times to the present, with emphasis on rhetorical theory and writing styles since 1500.

685T. Rhetoric and Literature. 5 hours.

Prerequisite: Two courses in English numbered 400T or above.

Study of the Western rhetorical tradition since Plato and specifically its application to English and American literature.

686T. Bibliography and Methods of Research. 5 hours.

Bibliographical analysis and description and the study of research materials and methods.

687T. Folklore Studies. 5 hours. (Max. 10 hours.)

Prerequisite: Permission of department.

One or more folk groups, folklore genres, or topics concerning folklore.

688. (AAM) Topics in African American Literature. 5 hours. (Max. 10 hours.)

Selected topics in African American Literature such as African American Autobiography, Harlem Renaissance, Gwendolyn Brooks and Richard Wright, and Black American Literature and Aesthetics.

689T. Apprenticeship in College English. 1 hour. (Max. 3 hours.)

An apprenticeship in the teaching of freshman composition and of sophomore literature for MAT candidates.

690T. Graduate Study in English. 1 hour.

Conventions and standards of scholarly and critical work in the field, required skills and resources, insight into the discipline and program expectations.

700M. Master's Research. 1-15 hours. (Max. 30 hours.)

Prerequisite: Permission of department.

Research while enrolled for a master's degree under the direction of faculty members.

730M. Master's Thesis. 1-15 hours. (Max. 30 hours.)

Prerequisite: Permission of department.

810T. Seminar in English Linguistics. 5 hours. (Max. 15 hours.)

Special topics in English linguistics. Topics will vary. Consult the department for the specific topics to be offered in a given year.

820T. Seminar in Medieval Topics. 5 hours. (Max. 15 hours.)

Special topics in Medieval literature. Topics will vary. Consult the department for the specific topics to be offered in a given year.

830T. Topics in Nondramatic English Literature, 1500-1660. 5 hours. (Max. 15 hours.)

Special topics in nondramatic English literature. Topics will vary. Consult the department for the specific topics to be offered in a given year.

835T. Seminar in Elizabethan Drama. 5 hours. (Max. 15 hours.)

Special problems in Elizabethan drama.

840T. Seminar in 18th-Century Literature. 5 hours. (Max. 15 hours.)

Swift, Pope, Johnson, Fielding, or Blake.

850T. Seminar in English Romantic Literature. 5 hours. (Max. 15 hours.)

A major writer or special topics of the period.

855T. Seminar in Victorian Literature. 5 hours. (Max. 15 hours.)

Tennyson, Browning, and Arnold.

860T. Seminar in Modern Literature. 5 hours. (Max. 15 hours.)

An author or problem in 20th-Century British or American literature.

870T. Seminar in American Literature. 5 hours. (Max. 15 hours.)

A research course on special problems in American literature.

875T. Seminar in Southern Literature. 5 hours. (Max. 15 hours.)

Special problems in Southern literature.

880T. Creative Writing Seminar. 5-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Seminar in creative writing for advanced students: poetry and fiction.

885T. (CML) Problems in Literary Criticism. 5 hours.**886T. (CML) Seminar in Feminist Literary Theory.** 5 hours. (Max. 15 hours.)

Theory of gender as it relates to the interpretation of literature.

888T. (CML) Seminar in Psychoanalytical Literary Criticism and Theory. 5 hours. (Max. 15 hours.)

Psychoanalytic approaches to literary study.

890T. Current Issues in Rhetorical Theory. 5 hours.

Study of contemporary rhetorical theory and its relation to literary criticism and English composition.

896. Directed Reading. 5 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Independent graduate study in special topics not available in scheduled courses. Topics must be approved by the instructor and the graduate faculty in English.

900D. Doctoral Research. 1-15 hours. (Max. 30 hours.)

Prerequisite: Permission of department.

Research while enrolled for a doctoral degree under the direction of faculty members.

930D. Doctoral Dissertation. 1-15 hours. (Max. 30 hours.)

Prerequisite: Permission of department.

Entomology (ENT)

Robert W. Matthews, *Acting Head*

Kenneth G. Ross, *Graduate Coordinator,*
542-7699

(Biological Sciences Building)

Requirements for the PhD include completion of research skills requirement in either statistics, computer science, or foreign language.

The Department of Entomology offers graduate work leading to the professional MPPPM (Master of Plant Protection and Pest Management) degree, and the MS and PhD degrees. The MPPPM is a non-thesis degree requiring 30 hours of specified graduate level course work, two units of internship, plus 30 hours of selected graduate level electives. The MS and PhD are research degrees requiring course work plus original research leading to a thesis or dissertation. Students holding the baccalaureate degree are normally admitted at the MS level but may petition to bypass this degree and work

towards the PhD after meeting specific departmental requirements.

In addition to the faculty at the Athens campus, students may carry out research under the direction of faculty at the Experiment Station at Griffin or at Tifton, Georgia. Facilities and opportunities for studies on applied aspects of entomological problems are emphasized at the stations. On the Athens campus, faculty joint staffed with the College of Agricultural and Environmental Sciences and the Institute of Ecology enable students to earn a degree in entomology with training in related disciplines.

Facilities outside the department include electron transmission and scanning microscopes, cell sorter, monoclonal and sequencing labs, computer facilities, nine agricultural research farms, forest research areas, the Natural History Museum, and the U.S. Department of Agriculture and Forestry laboratories. Particularly good library facilities in entomology are available.

Departmental teaching and research assistantships are available from the Entomology Department. Other financial aid is available through the Graduate School, but applications should be submitted to the Department of Entomology.

Students without previous courses in entomology, genetics, or biochemistry may be required to make up deficiencies.

600-600L. Advanced General Entomology. 5 hours.

Prerequisite: BIO 104-104L or 108-108L and two other courses in life sciences.

An overview of the science of entomology which includes the following areas: functional anatomy and physiology, behavior, ecology, insects as vectors of pathogens, chemical and biological control of pests. Laboratory sessions are devoted primarily to collecting and the identification of major families of insects.

601-601L. Insect Taxonomy. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: ENT 400/600-400L/600L.

The principles of taxonomy with practice in the classification of all orders of insects. (Even years.)

613. (PAT) Internship in Crop Production and Pest Management. 1 hour. (Max. 2 hours.)

See PAT 613.

615-615L. Insect Physiology. 5 hours.

Prerequisite: ENT 400/600-400L/600L and CHM 240 or equivalent and BCH/BIO 310 or equivalent.

An introduction to the general physiological processes and functions of the various organ systems of insects. (Open to graduate students only.)

625-625L. (CSS/ET) Pesticide Management and Utilization. 5 hours.

Four lectures and one 3-hour lab period.

Prerequisite: CHM 121-121L and 122-122L and 240-240L or 261 or permission of department.

Practical management and utilization of pesticides in urban and agricultural environments. Subject areas include classification of insecticides, herbicides, and fungicides, their general chemical and toxicological properties, deployment philosophy, hazards and environmental impact, formulation and application, safety and disposal, and management of pesticide resistance.

626-626L. (ECL/BOT) Biological Collections Management. 5 hours.

See ECL 626-626L.

640-640L. Insect Behavior. 5 hours. Two double lectures and one 3-hour lab period.

Prerequisite: ENT 400/600-400L/600L.

An evolutionary approach to the principles of behavior; coverage includes communication, sexual behavior, antipredator behavior, insect-plant interactions, and the development of sociality. (Even years.)

650-650L. Insect Ecology. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: Permission of department.

Study of basic and applied principles of how insects interact with their environment at the population, community and ecosystem levels. Course covers evolution, population genetics, regulation of insect pests, modeling, and the role of insects in agricultural ecosystems. (Open to graduate students only.)

660-660L. Insect Morphology. 5 hours. Two lectures and three 2-hour lab periods.

Prerequisite: ENT 400/600-400L/600L.

An introduction to insect structure, function, and phylogeny. (Odd years.)

667-667L. (MIB) Insect Pathogens. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: BIO 108-108L.

Basic principles of insect pathology, including history, classification of diseases, insect response to pathogens, normal insect/microbe ecology, and the production and use of insect pathogens for pest control. (Odd years.)

674-674L. Insect Pest Management. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: ENT 374 or permission of department.

Description of the major applied insect control techniques with discussion of the advantages and limitations of these tactics including practicality, economics, environmental impact, etc. Final portion of the course will consider integrated control systems for development of a pest management program. (Open to graduate students only. Even years.)

682-682L. Entomology in Natural Resources Management. 5 hours. Two lectures and two 3-hour lab periods.

A study of arthropods which are important in forest resources management, including timber, wildlife, and recreation. (Odd years.)

694-694L. Aquatic Entomology. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: ENT 400/600-400L/600L.

An introduction to taxonomy, life history and ecology of aquatic insects. (Open to graduate students only. Spring quarter each year.)

700M. Master's Research. 1-15 hours. (Max. 60 hours.)

Prerequisite: Permission of department.

Research while enrolled for a master's degree under the direction of faculty members.

730M. Master's Thesis. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

773. Entomology for Teachers. 5 hours.

Prerequisite: Two elementary courses in biological science and two courses numbered 300 or above in biological science or education.

Insects and related forms, their identification and life habits, with emphasis on the use of these forms in teaching.

800. Entomology Seminar. 1-2 hours. (Max. 30 hours.) Each credit hour meets once a week.

Prerequisite: Graduate status in a biological science.

Discussion of topics relating to entomology, both fundamental and applied, including literature reviews and discussion of recent advancements.

805. Principles of Systematics and the Phylogeny of Insects. 3 hours.

Prerequisite: ENT 400/600-400L/600L.

History and philosophy of systematics, the science of biological classification, with reference to insects. Methods of analysis and types of data in systematic biology. (Odd years.)

808. Chemical Ecology. 3 hours. (Max. 6 hours.)

Prerequisite: ENT 400/600-400L/600L and BCH 402/602 or permission of department.

An analysis of interactions between organisms that are mediated by the chemicals they produce. (Odd years.)

810. Evolution of Insects. 2 hours.

Prerequisite: ENT 400/600-400L/600L or permission of department.

An overview of the general principles of organic evolution, the history of evolutionary thought, methods for studying evolution, and contemporary topics in evolutionary theory with a special emphasis on the insects. (Odd years.)

831. The Insect/Plant Interface. 3 hours.

Prerequisite: ENT 615-615L.

Chemical and physical description of the insect/plant interface. Attention will be focused on the plant surface and its role in insect resistance. (Odd years.)

834. Social Insect Biology. 2 hours.

Prerequisite: ENT 400/600-400L/600L or permission of department.

A survey of the social insects, their physiology, ecology, behavior, and evolution. (Odd years.)

857. Molecular Entomology. 3 hours.

Prerequisite: ENT 615-615L and BOT/CSS 650 or permission of department.

A molecular biological study of insects and their pathogens. (Even years.)

871. Taxonomy of Insect Larvae. 3 hours.

Prerequisite: ENT 400/600-400L/600L or 401/601-401L/601L.

A study of the classification, biology, and phylogenetic and economic significance of insect larvae. (Even years.)

882. Entomophagous Arthropods. 3 hours. (Max. 9 hours.)

Prerequisite: ENT 650 or BIO 350 or permission of department.

A study of the interactions of arthropod parasitoids and predators in natural population systems. Basic and subsidiary components of parasitism and predation, parasitoid-prey and predator-prey systems, systematics, taxonomy, morphology, and biology are the major subjects of consideration.

900. Problems in Entomology. 1-10 hours. (Max. 10 hours.)

Prerequisite: Two senior division courses in entomology.

In this course students are allowed to work intensively on approved problems in entomology.

900D. Doctoral Research. 1-15 hours. (Max. 60 hours.)

Prerequisite: Permission of department.

Research while enrolled for a doctoral degree under the direction of faculty members.

930D. Doctoral Dissertation. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Environmental Design

Kerry J. Dawson, *Dean*
(Caldwell Hall)

The School of Environmental Design offers two graduate degree programs: Master of Landscape Architecture (initiated 1954) and Master of Historic Preservation (initiated 1982). Both programs are concerned with the quality of environments.

The two programs are housed in Denmark Hall. Each one is directed by a graduate coordinator who can provide additional information to prospective students. Out-of-state students are encouraged to investigate whether they qualify for in-state tuition rates available through the Academic Common Market.

Master of Landscape Architecture (MLA): Applicants are accepted into the program from both design and non-design backgrounds. Those entering without the BLA (or equivalent degree) are admitted into the three-year degree program that includes up to 60 prerequisite credits, plus 75 graduate credits. Applicants holding a recent BLA degree enter directly into the second year of study for 75 graduate credits. Applicants holding the BLA degree with ten or more years' responsible professional experience, may apply for a one-year accelerated program emphasizing specialization and requiring 42 graduate credits, including the 10-hour thesis.

The MLA program is structured around a sequence of design studios, lecture and seminar courses and electives. Design studios are supported by required courses in theory, landscape construction, plant communities, professional practice, and research methods and applications. Areas of specialization are supported by elective courses both within the School and from other departments.

All candidates are required to have their applications completed prior to March 31 of the year they plan to enter. Completion prior to December 30 is to the student's advan-

tage. Graduate Record Examination scores are a required part of a complete application.

A limited number of scholarships and assistantships are administered by the School and the University.

Master of Historic Preservation (MHP): Students from diverse backgrounds are often surprised to discover the manner in which their undergraduate degree may either relate directly to historic preservation or provide skills useful in the pursuit of historic preservation as a career. Thus, interested individuals are encouraged to visit the School to explore their potential for success in this new career area. As an area of academic study, historic preservation has been available for just three decades. Within this period, there has been a rapid expansion of career opportunities at the various levels of government as well as within the private sector.

The 90 credit hour program of study, required for the Master of Historic Preservation degree, provides a comprehensive program which includes an internship as well as a thesis. Financial assistance, in the form of research assistantships, is available on a competitive basis. Students interested in applying for assistantships for the following year must have been accepted for admission by February 15.

In addition to the MHP program, the School, in cooperation with the School of Law, offers a joint JD/MHP four-year combined degree as well as a Preservation Studies Certificate Program. The School is a member of the National Council of Preservation Educators and meets their standards for academic programs in historic preservation.

Landscape Architecture (LAR)

Bruce K. Ferguson, *Graduate Coordinator*,
542-4720
(Denmark Hall)

601. Seminar in Landscape Design, Planning, and Management. 1 hour.

Prerequisite: Enrollment in MLA program.

Exploration of contemporary landscape design, planning, and management theory and practice, with implications for scholarly investigation in each area.

602. Introduction to Landscape Research. 2 hours.

Prerequisite: LAR 601 and permission of school. An introduction to research directions and methods in landscape design, planning, and management.

603. (BOT) Plant Communities of the Southeast. 5 hours.

Prerequisite: LAR 323 or BIO 350 or equivalent. Examination of the plant communities of the southeast United States, with emphasis on botanical and aesthetic characteristics, factors affecting community composition, and community dynamics. (Fall quarter.)

610. Professional Internship. 5 hours.

Prerequisite: Permission of school.

Provides credit for professional office experience under the supervision of registered landscape architects or related practitioners (architects, engineers, planners). The experience may involve site design, planning or related research. A minimum of two months full-time supervised employment for five (5) credit hours.

615. Computer Applications for Landscape Architects. 5 hours.

Prerequisite: LAR 501 and 503.

Introductory computer course applying specific computer software to areas of study within landscape architecture: includes site engineering, plant selection, site selection and computer-aided drawing applications.

625. Field Study in Contemporary Landscape Architecture. 5 hours.

Prerequisite: LAR 305.

Travel-case study of nationally recognized firms and individuals and notable works in architecture, landscape architecture, and urban design.

640. Professional Practice in Environmental Design. 2 hours.

Prerequisite: Permission of school.

A course to familiarize students with landscape architectural firms and agencies, covering: staff organization, fee estimating, scheduling of work, business and personnel management, and client/consultant relations.

653. City Planning. 4 hours.

Prerequisite: LAR 372 or permission of school.

Background course in city planning covering the history and bibliography of the subject and introducing the students to modern trends in planning. Designed as a foundation for further study of professional planning.

Environmental Design

700M. Master's Research. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of school.

Research while enrolled for a master's degree under the direction of faculty members.

715. (RE) Land Development Studio. 5 hours.
See RE 715.

723. Environmental Analysis. 5 hours.
Prerequisite: LAR 323.

Techniques for the survey and analysis of natural processes at the site planning scale with an emphasis on field studies and computer applications.

730M. Master's Thesis. 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of school.

740. Landscape Planning Theory. 5 hours.

Prerequisite: LAR 601 and 602 and 723.

Corequisite: LAR 741.

The application of concepts from landscape design, environmental analysis, and environmental law in landscape planning. This course focuses on the role of the landscape architect in a multi-disciplinary planning team.

741. Landscape Planning Studio. 5 hours.

Two lectures and three 2-hour lab periods.

Prerequisite: LAR 601 and 602 and 723.

Corequisite: LAR 740.

The application of landscape planning theory and practice in selected planning projects.

750. Landscape Design Theory. 5 hours.

Prerequisite: LAR 601 and 602.

Corequisite: LAR 751.

The study of current theory and practice in landscape design on a comparative basis. This course focuses on the need for contemporary design to respond to changes in society and development in science and technology, art, and architecture.

751. Landscape Design Studio. 5 hours. Two lectures and three 2-hour lab periods.

Prerequisite: LAR 601 and 602.

Corequisite: LAR 750.

The application of current landscape design theory and practice in selected design projects.

755. Theory and Practice in 20th Century Landscape Architecture. 5 hours.

Prerequisite: LAR 372 or equivalent.

Survey of design traditions that have informed American landscape architectural practice over the past century and typology of landscape forms through which these traditions have been expressed. Analysis of philosophical and theoretical premises of contemporary practice from perspective of continuity with, or reaction against, inherited regional and national models.

760. Landscape Management Theory. 5 hours.

Prerequisite: LAR 601 and 602 and 603.

Corequisite: LAR 761.

The application of concepts from ecology and landscape design in landscape management. This course emphasizes the dynamic nature of landscapes and the need for the sustained involvement of landscape architects in their management.

761. Landscape Management Studio. 5 hours. Two lectures and three 2-hour lab periods.

Prerequisite: LAR 601 and 602 and 603.

Corequisite: LAR 760.

The application of landscape management theory in selected management projects.

Environmental Design (ENV)

618ABC. Special Directed Projects. 2-5 hours. (Max. 15 hours.) (MLA and MHP Programs.)

Prerequisite: Permission of school.

Special study or project which would provide an opportunity to pursue research interests or significant projects in environmental design.

676. Restoration and Preservation of Historic Buildings and Sites. 5 hours.

Survey of European and American historic restoration and preservation theory, its evolution and practice, and its relationship to the concept of environmental quality.

Historic Preservation (HP)

John C. Waters, *Graduate Coordinator,*
542-4706
(Denmark Hall)

600. Contemporary Preservation Perspectives. 5 hours.

Prerequisite: ENV 476/676.

A study-travel course focused upon preservation problems and practice. Emphasis is upon the work of preservation professionals and preservation organizations and agencies.

610. Preservation Internship. 5 hours.

Prerequisite: ENV 476/676 or permission of school.

Provides credit for preservation agency experience under supervision of approved professional staff member. Experience will vary according to the agency selected. A minimum of two months full-time supervised employment required for 5 credit hours.

650. Preservation Law. 5 hours.

Prerequisite: ENV 476/676 or permission of school.

An analysis of significant national, state, and local preservation law, the legal foundation for protection of historic resources, and related preservation case law.

682ABCDE. Historic Preservation Colloquium. 1-2 hours. (Max. 10 hours all suffixes.)

Prerequisite: ENV 476/676 for 682BCDE and permission of school.

Corequisite: ENV 476/676 for 682A.

Investigation of special topics in historic preservation. Topics will vary from quarter to quarter.

- A. Preservation practice.
- B. Neighborhood conservation.
- C. Small town conservation.
- D. Preservation technology.
- E. Fund raising for historic preservation.

685. Building Materials Conservation. 5 hours.
Prerequisite: ENV 476/676.

An introduction to restoration and rehabilitation practice, in the U.S. and Europe. Emphasis is on materials, conservation and consolidation and on available replacement building features. Topics include: the analysis of structural systems; identification and treatment of moisture problems; the history and philosophy of conservation; preservation treatments for wood buildings; cleaning and masonry repair work; and the use of modern substitute materials.

690. Historic Landscape Preservation. 5 hours.
Prerequisite: LAR 372.

Theory and practice in the preservation of historic landscapes, focusing on landscapes in the United States and Europe.

700M. Master's Research. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Research while enrolled for a master's degree under the direction of faculty members.

705. Historic Preservation Planning. 5 hours.
Prerequisite: ENV 476/676.

Application of the theory and techniques of preservation planning. Emphasis is placed on the development of preservation plans at the site specific, community, and regional levels.

706. Preservation Advocacy. 5 hours.

Prerequisite: ENV 476/676 or permission of school.

The application of historic preservation skills to actual community preservation problems. Projects will focus upon advocacy, strategy development, and implementation of solutions to preservation problems.

730M. Master's Thesis. 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of department.

752. Evolution of the American Landscape. 5 hours.

Prerequisite: ENV 476/676 or permission of school.

An introduction to the study of American Landscape History, from its colonial beginnings to the present day.

753. Evolution of American Architecture. 5 hours.

Prerequisite: ENV 476/676 or permission of school.

A survey of structures in the landscape and reasons for their forms including function, materials available, tools, technology, prototypes, climate, site, and stylistic influences. (U.S. only.)

772. Cultural Resource Assessment. 5 hours.

Prerequisite: ENV 476/676 or permission of school.

Identification of cultural resources; methods of collecting, recording, processing, and analyzing survey material.

780. Rural Preservation. 5 hours.

Prerequisite: ENV 476/676 or permission of school.

A survey and analysis of the evaluation of the rural historic landscape, its aesthetic values, preservation problems, and legal and financial resources available for landscape preservation.

Environmental Ethics (ETH)

Peter Hartel, *Graduate Coordinator,*
542-0898
(Plant Sciences Building)

Please see the Index for information on the certificate program in environmental ethics. The courses having an environmental ethics prefix are listed below.

600. Environmental Ethics Seminar. 1 hour.
Prerequisite: Permission of department.

Readings in environmental ethics. Open only to students in the graduate certificate program.

618. (PHY) Environmental Ethics. 5 hours.
See PHY 618.

619. (AGR) Agricultural Ethics. 2 hours.
See AGR 619.

620-620L. (ECL) Ecological Concepts. 5 hours.
See ECL 620-620L.

651. (PHY) Technology and Values. 5 hours.
See PHY 651.

Family and Consumer Sciences

Sharon Y. Nickols, *Dean*
(Dawson Hall)

The College of Family and Consumer Sciences offers the Doctor of Philosophy and Master of Science degrees in each of its departments: Child and Family Development; Foods and Nutrition; Housing and Consumer Economics; and Textiles, Merchandising, and Interiors. The Department of Child and Family Development and the Department of Foods and Nutrition also offer the Master of Home Economics degree. A Pre-Professional Certificate in Marriage and Family Therapy is also offered to graduate students meeting certain requirements. (Please see Index.) The Department of Child and Family Development offers an AAMFT accredited program. A certificate is also available in gerontology (Please see Index.) Facilities include well equipped laboratories in foods, nutrition, clothing, textiles, housing and family resource management; the Marriage and Family Therapy Clinic; the McPhaul Child and Family Development Center for infants and young children; and the computer laboratories located in Dawson Hall. Applications for admission and requests for assistantships should be addressed to the graduate coordinator in the department of interest.

Child and Family Development (CFD)

Sharon J. Price, *Head*
Lynda H. Walters, *Graduate*
Coordinator, 542-4831
(Dawson Hall)

607. Marriage and Family Problems. 5 hours.
Prerequisite: SOC 105 or PSY 101.

Study of serious difficulties and stresses within marriage and families such as child/spouse abuse, neglect, alcohol and other drug dependencies, physical handicaps, unemployment, and national disasters and their relation to the family.

608. (PSY) Development of the Young Child. 5 hours.

Prerequisite: CFD/PSY 395 or equivalent.
The physical, mental, emotional, and social development of the preschool child, and the origins of psychological processes in lab work; special reference to techniques of guidance.

642. (ECE) Organization of Early Childhood Classrooms. 5 hours.

See ECE 642.

650. (HCE) Second Half of Life. 5 hours.

Prerequisite: Ten hours of sociology, psychology or child and family development.

A review of the second half of life: resource management, living patterns and housing, sexuality, roles, family relationships, community and organization involvement, career opportunities.

661. (SOC) The Family. 5 hours.

Family study utilizing data from the field of anthropology, individual and social psychology, history, sociology, economics and psychiatry.

662. Women in the Family and Society. 5 hours.

Prerequisite: Upper division standing, five hours of CFD and SOC or permission of department.
Women's roles in relation to marriage, family and society at various ages and times, their changing constraints and opportunities.

670. The Family and Adolescence. 5 hours.

Prerequisite: Ten hours from the following: CFD 210 or CFD/PSY 395 or PSY 101.

A consideration of the unique features of the family while it is at the life cycle stage which includes an adolescent member. Special attention will be given to the dual process of adolescent development and family development.

690. (HCE) Research Methods. 5 hours.

Prerequisite: Admission to graduate school.
Introduction to research design in selected areas of home economics. Emphasis on common problems incurred in measurement and data analysis.

691. Hospitalized Child and the Family. 5 hours.

Prerequisite: CFD 390 and CFD/PSY 395 and one of the following: CFD 407/607 or 495/695 or CFD/SOC 461/661.

Study of the normal and stress related needs of hospitalized children and the families. Philosophy and development of the Child Life Program.

695. Family Development. 5 hours.

Prerequisite: Courses in child development or family relations or SOC 105.

An examination of families as social groups that develop their own patterns, meanings and processes across stages of the family life cycle in both conventional and alternative family forms. Topics include family formation, dissolution, parenting, remarriage, reconstructed families, and child custody.

696. Parent and Child Guidance. 5 hours.

Prerequisite: CFD/PSY 395 or equivalent.

Theories, strategies, and techniques employed by parents, teachers and other significant adults to promote the healthy development of children and adults. Lab work is required.

697. Human Sexuality and the Family. 5 hours.

A survey of various attitudes, values, substantive, and theoretical materials on human sexuality, particularly the relation of these two and implications for interpersonal relations in marriage and the family.

699. Internship in Child and Family Development. 1-15 hours. (Max. 15 hours.)

Prerequisite: CFD 461/661 and 408/608 and graduate student in Child and Family Development.

Supervised professional practice in human service agencies.

700M. Master's Research. 1-15 hours. (Max. 20 hours.)

Prerequisite: Permission of department.

Research while enrolled for a master's degree under the direction of faculty members.

701. Directed Study in Child and Family Development. 1-20 hours. (Max. 20 hours.)

Prerequisite: [CFD/SOC 461/661 and CFD/PSY 408/CFD 608] or equivalent.

Directed reading and/or research under supervision of instructor.

721. Problems in Child and Family Development. 5 hours.

Prerequisite: Three graduate courses in CFD and permission of department.

The course is designed to provide individual guidance in the development of a significant project related to the student's field of work. A written report of the problem or project will be required.

730M. Master's Thesis. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

791. Creative Activities for Young Children. 5 hours.

Prerequisite: CFD/PSY 395 and one additional related senior division course.

Creative activities for young children, including literature, art, mathematics, science, music, and nature study. Lab work required.

792. Group Programs for Young Children. 15 hours.

Prerequisite: CFD 390 or 409/609 and CFD/PSY 395 and CFD 496/696.

Developmental and educational theories applied to the design, content, and implementation of group programs for young children. Lab work required.

794. Administration of Children's Programs. 5 hours.

Prerequisite: CFD/PSY 395 and CFD 496/696 and 592/792.

Theories and administration of child care programs including planning, scheduling, enrollment, certification, and evaluation. Lab work required.

805. Family Systems Theory. 5 hours. (Max. 10 hours.)

Prerequisite: CFD 807A or equivalent of 807B or equivalent.

Experience in marriage and family therapy through the interaction with and observation of healthy marital/family systems. Structured experiences to develop skills in interviewing, assessing couple/family functioning, making limited therapeutic interventions, observing couple/family interaction, and developing basic aspects of the client-therapist relationship.

806. Principles of Marital and Family Therapy I. 5 hours.

Prerequisite: Permission of department and ten completed graduate hours in counseling-related courses.

A study of principles, theoretical approaches, specific objectives, and techniques currently used in marriage and family counseling. The focus will be on normal developmental problems rather than on psychopathology.

807. Principles of Marital and Family Therapy II. 5 hours.

Prerequisite: Permission of department and ten completed graduate hours in counseling-related courses.

A study of principles, theoretical approaches, specific objectives, and techniques currently used in marriage and family counseling. The focus will be on normal developmental problems rather than on psychopathology.

808. Marriage and Family Assessment. 5 hours.

Prerequisite: CFD 897A or SW 843 or EPY 802 or equivalent.

Critical review of observational and self-report measures used to assess aspects of marriage and family life with emphasis on reliability, validity and theoretical issues. Application in educational and clinical settings emphasized.

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809. Research Methods in Marriage and Family Intervention. 5 hours.

Prerequisite: CFD/FDN/HCE/TMI 690 or equivalent and ERS 411/611 or equivalent.

Critical evaluation of quantitative and qualitative research designs used to study the process and outcome of marriage and family interventions.

850. Current Research and Issues in Child and Family Development. 1-6 hours. (Max. 6 hours.)

Prerequisite: Graduate standing in Child and Family Development.

A forum for presenting current research of faculty, graduate students and visiting scholars. Discussion of current issues pertaining to child and family development.

890. Research in Child and Family Development. 1-20 hours. (Max. 20 hours.)

Critical evaluation of research process, conceptualization of the research problems, selection of appropriate methods of data collection, construction of research designs, collection of data, consideration of alternative data analysis strategies, interpretation of findings, research writing. (Ten hours maximum credit for a master's degree.)

892. Behavior Problems in Children. 5 hours.

Prerequisite: CFD/PSY 408/608.

The child's adjustment to his environment with a consideration of the causes, treatment, and prevention of behavior problems. Utilization of case materials. Research problems in the field will be carried out by the student.

895. Seminar in Child and Family Development. 5-20 hours. (Max. 20 hours.)

Prerequisite: Courses in family life, child development, sociology or psychology, and permission of department.

Survey of current literature on selected areas in child and family development; discussion of current research trends in the field; reports and discussion on selected topics; completion of review of empirical research paper.

896. Proseminar in Individual and Family Systems. 5-15 hours. (Max. 15 hours.)

Prerequisite: CFD/SOC 461/661 and CFD/PSY 408/ and CFD /608 or equivalent.

Major substantive areas of research and other literature in child and family development will be studied. Emphasis will be placed on studies of interaction between or among family members and their impact on each other in the context of family systems.

897AB. Theories of Human Development. 5 hours each.

Prerequisite: CFD 461/661 and CFD/PSY 408/ and CFD /608 or equivalent.

An investigation of the origin and extension of selected theories of human behavioral, social and emotional development, particularly as these relate to development within a family context.

900D. Doctoral Research. 1-15 hours. (Max. 20 hours.)

Prerequisite: Permission of department.

Research while enrolled for a doctoral degree under the direction of faculty members.

901. Directed Study in Family and Child Development. 1-20 hours. (Max. 20 hours.)

Prerequisite: Permission of department.

Independent study and/or research under supervision of an instructor. (No more than 10 hours may be counted toward master's degree requirements.)

907. Practicum in Marriage and Family Counseling. 1-20 hours. (Max. 20 hours.)

Prerequisite: CFD 807AB and 893 and permission of department.

Supervised experience in marriage and family counseling.

908. Supervision of Marriage and Family Therapy. 5 hours.

Prerequisite: CFD 807A and 807B and 906 and 461/661 and 907 Practicum.

Methods of supervision in marriage and family therapy.

930D. Doctoral Dissertation. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

998ABCD. Internship in Child and Family Development. 5-20 hours each. (Max. 20 hours.)

Prerequisite: Permission of department.

Supervised professional practice in settings which employ persons with graduate degrees in child and family development. The internship can be in one of the following areas:

- A. Group programs for children under six.
- B. Human development programs.
- C. Developmentally disabled individuals and their families.
- D. Administration.

Foods and Nutrition (FDN)

Roy J. Martin, *Head*

Mary Ann Johnson, *Graduate Coordinator,*
542-2292
(Dawson Hall)

627. Cultural Aspects of Foods and Nutrition. 5 hours.

Prerequisite: FDN 210 or 351 or 500/700.

A study of the foodways, food habits and food behavior of various population groups in this country and others and the influences of these factors on the nutritional status of group members.

630. Public Health Dietetics. 5 hours.

Prerequisite: FDN 349 or 351.

Nutrition in public health care and tools for successful management and delivery of nutrition services including knowledge of community assessment, planning, implementation and evaluation as related to nutritional care.

641. Advanced Nutrition I. 5 hours

Prerequisite: FDN 351 and VPH 310 and BCH/BIO 310.

Survey of the literature of human nutrition (including physiology, biochemistry and endocrinology) related to the major nutrients, with special emphasis on the relationship between diet and performance under varying conditions of age and health.

643. Micronutrients in Human Health I. 5 hours.

Prerequisite: BCH 401/601 and FDN 441/641 or permission of department.

Integration of literature on human nutrition (including physiology, biochemistry, endocrinology and epidemiology) related to inorganic nutrients, with special emphasis on their role in metabolic processes.

644. Micronutrients in Human Health II. 2 hours.

Prerequisite: BCH 401/601 and FDN 441/641 or permission of department.

Integration of the role of vitamins as nutrients in metabolic processes.

652. Nutrition Support Dietetics. 2 hours.

Specialized nutrition in the clinical setting including nutrition assessment, enteral nutrition, parenteral nutrition, clinical applications and documentation. Prepares dietetics students for internships.

653. Nutrition in Disease. 5 hours.

Prerequisite: FDN 441/641.

Modifications needed in normal diet in treatment of various diseases. Special emphasis is given to the study of digestive diseases, metabolic disorders, diseases of the blood and to cardiovascular and renal disorders.

655. Maternal and Child Nutrition. 5 hours.

Prerequisite: BCH/BIO 310 and ZOO 213 or VPH 310, and FDN 351.

Fundamental principles of nutrition during pregnancy, lactation, infancy and early childhood. Laboratory work in maternity clinics, infant laboratory, nursing schools, and other appropriate community agencies.

658. Readings in Nutrition. 5 hours.

Prerequisite: FDN 442/642 or permission of department.

Recent developments and the present status of knowledge on selected topics from the field of nutrition. The course is designed specifically for those who wish to bring their knowledge of nutrition up to date.

670. Food and the Consumer. 5 hours.

Prerequisite: FDN 210 or 360-360L or 500/700 or 351.

Corequisite: CHM 112-112L.

Health, safety and policy issues related to food consumption trends, nutrient composition of foods, food additives, food allergies and hypersensitivities, naturally occurring toxins, pathogens, pesticides, biotechnology-derived foods, irradiated foods, and food laws and regulations.

675. Experimental Study of Food. 5 hours.

Four lectures and one 3-hour lab period.

Prerequisite: [FDN 360-360L] and [CHM 112-112L or 122-122L] and [FDN 210 or 351 or 500/700] and [statistics or permission of department].

Functional and nutritional properties of components in food products. Techniques to evaluate food products for consumer acceptability including individual and group laboratory experimentation; computer applications.

680. Geriatric Nutrition. 5 hours.

Prerequisite: One graduate course in nutrition and one graduate course in physiology.

Role of foods and nutrients in the health and well-being of the elderly, effects of aging on macro and micronutrient needs; influence of disease, medications, economics, and culture; nutritional assessment, support and services; health promotion and disease prevention; future directions for research.

700. Nutrition Related to the Human Life Cycle. 5 hours.

A survey of nutritional health needs related to specific stages of the human life cycle. Special emphasis will be given to the nutritional needs during pregnancy, infancy, and early childhood, and the gerontological-nutritional needs. The subject matter of the course will be presented for non-majors in foods and nutrition.

700M. Master's Research. 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of department.

Research while enrolled for a master's degree under the direction of faculty members.

721. Problems in Foods and Nutrition. 5 hours.

Prerequisite: Three graduate courses in FDN and permission of department.

The course is designed to provide individual guidance in the development of a significant project related to the student's field of work. A written report of the problem or project will be required.

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730. Facilities Planning and Development. 5 hours.

Prerequisite: FDN 570/770 or permission of department.

Concepts, strategies, and skills needed in planning, designing and equipping facilities related to the hospitality industry.

730M. Master's Thesis. 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of department.

757. Demonstration Techniques. 5 hours.

Prerequisite: FDN 360-360L.

Planning and organizing effective types of communications about food and nutrition to the consumer through various types of media. Use of techniques such as food demonstrations, construction of displays and writing of brochures will be performed by students.

760. Menu Management and Service. 5 hours.

The planning of meals as related to styles of service for individual, family, commercial and institution use. Cultural, marketing, and social aspects of foods will be considered.

770. Quantity Food Production. 5 hours.

Prerequisite: FDN 360-360L.

Application of principles of food preparation in large quantities utilizing institutional equipment and procedures; including topics such as: yield studies, work improvement methods, and recipe standardization.

773. Management of Foodservice Organizations. 5 hours.

Prerequisite: FDN 570/770.

Management of foodservice organizations: concepts of management, staffing, and delivery systems as they pertain to the resources and organization of public and private institutions.

774. Purchasing for Foodservice Organizations. 5 hours.

Prerequisite: FDN 360-360L.

A study of the total purchasing process with emphasis on purchasing methods, storage and issuing procedures, inventory systems, forecasting of quantities and specification writing. Purchase of food, beverages, chemicals, disposables, table service and small equipment is included.

775. Institutional Management II. 5 hours.

Prerequisite: FDN 570/770.

A study of the layout, design, equipment selection and purchase necessary to establish a food service facility. Energy use and conservation involved in a food service facility. Overall operational cost involved in operating a food service facility and the maintenance of records and cost controls. Laws and regulations pertaining to the operation of a food service facility.

780. Hospitality Sanitation and Safety. 5 hours.

Prerequisite: FDN 570/770.

Principles of sanitation and safety for the restaurant and lodging industries. Studies of food spoilage and foodborne illness, maintenance of sanitary food, facilities and equipment, and sanitation and safety regulations and standards.

791. Foods and Nutrition Practicum. 5 hours.

Prerequisite: Basic courses in FDN department and permission of department. Supervised work experience in dietetics and/or food service facility.

792. Seminar in Hotel and Restaurant Administration. 1 hour.

Speakers from the hotel and restaurant industry will discuss current trends in the industry.

793. Consumer Foods Internship. 5-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Work in a public and private institution to obtain practical professional experience.

850. Seminar in Foods and Nutrition. 1-12 hours. (Max. 12 hours.)

Prerequisite: One advanced course in the subject area.

Survey of current literature on selected topics in foods and nutrition. Organized to use classic studies as background material for each topic.

851. Metabolic Controls in Nutrition. 5 hours.

Prerequisite: FDN 442/642 and BCH 402/602, and a course in human physiology.

A presentation of regulatory mechanisms of nutrition and metabolism including discussions of current theories on endocrine controls and their dysfunction in human health.

852. Nutritional Aspects of Growth and Development. 5 hours.

Prerequisite: BCH 402/602 and FDN 441/641 and 442/642.

A presentation of basic mechanisms of tissue and cellular development during prenatal and neonatal periods of growth, including current concepts of nutritional and hormonal regulation of cellular proliferation and differentiation. Critical evaluation of original research techniques and approaches in current literature.

858ABCD. Research in Foods and Nutrition. 5 hours each.

Prerequisite: One graduate-level course in the subject area; admission to candidacy for advanced degree in foods and nutrition; permission of department.

The planning and conducting of an individual research problem under supervision.

900D. Doctoral Research. 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of department.

Research while enrolled for a doctoral degree under the direction of faculty members.

901. Directed Study in Foods and Nutrition. 1-20 hours. (Max. 20 hours.)

Prerequisite: Permission of department. Independent study and/or research under supervision of an instructor. (No more than 10 hours may be counted toward master's degree requirements.)

930D. Doctoral Dissertation. 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of department.

Housing and Consumer Economics (HCE)

Carol B. Meeks, *Head*
Julia Marlowe, *Graduate Coordinator*,
542-4856
(Dawson Hall)

650. (CFD) Second Half of Life. 5 hours.
See CFD 650.

664. Family Socio-economic Characteristics. 5 hours.

Prerequisite: Senior division courses in economic theory and sociology or in related fields. Family as an income producing and utilizing unit; application of theory and research to economics of the household; implications on family structural characteristics on the family as supplier and demander of inputs and outputs in relation to economic and demographic characteristics and consequences for families.

665. Family Consumer Systems. 5 hours.

Prerequisite: A microeconomics course. Social systems analysis of research on consumer activities of households, families, and individuals; examination of empirical research and theory on the consumer at micro and macro levels; suggested new directions for consumer research and theory with family focus.

671. Study Tour in Housing and Consumer Economics. 5-15 hours. (Max. 15 hours.)

Prerequisite: One upper division housing course or permission of department.

A systematic study of topics relating to housing, home management or consumer economics, with site visits to relevant locations. Combines in-depth study with first-hand experience gained on site.

680. Federal Housing Developments. 5 hours.

Prerequisite: Courses in housing, economics and sociology or permission of department.

Development of national housing programs and policies as related to family welfare. The focus is on federal policies, particularly financial programs, in the United States in the context of national priorities, social conditions and economic trends.

681. Housing for the Elderly. 5 hours.

Prerequisite: Ten hours of housing courses. Housing needs and conditions, housing alternatives, legislation and current programs related to housing elderly persons. Survey of current housing is compared to proposals for effectively meeting more of the housing needs of the elderly person.

685. State and Local Housing Developments. 5 hours.

Prerequisite: Courses in housing, economics and sociology or permission of department. An examination of the impact of state and local action in the provision of housing including an historical introduction to the role of state and local government regulations, taxation and policies that influence the development and consumption of housing.

690. (CFD) Research Methods. 5 hours
See CFD 690.

700. Consumer Legislation. 5 hours.

Prerequisite: HCE 370. The rights and responsibilities of consumers related to legislation concerning consumer information, product safety, choice of goods and channels of appeal for the consumer.

700M. Master's Research. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department. Research while enrolled for a master's degree under the direction of faculty members.

721. Problems in Housing and Consumer Economics. 5 hours.

Prerequisite: Three graduate courses in HCE and permission of department.

The course is designed to provide individual guidance in the development of a significant project related to the student's field of work. A written report of the problem or project will be required.

730M. Master's Thesis. 1-30 hours. (Max. 30 hours.)

Prerequisite: Permission of department.

768. Management for Families with Special Needs. 5 hours.

Prerequisite: Senior division course in family resource management or permission of department.

Life styles and instrumental functioning of families challenged by limited resources. Unique managerial needs of families with special needs will be explored.

770. The Consumer and the Market. 5 hours.
Prerequisite: One course in intermediate micro-economic theory.

Problems of the household buyer; intelligent selection of goods on modern market; standards and labeling as safeguards in buying; family income and problems in distribution.

771. Housing Alternatives. 5 hours.

Prerequisite: HCE 480/680 or equivalent or permission of department.

Analysis of housing alternatives currently available to families. Public and private efforts to meet housing needs in the context of economic, social and demographic change.

776. Advanced Family Finance. 5 hours.

Prerequisite: Undergraduate course in family financial management.

Personal and family financial planning. Family values in relation to family income, spending, saving, and investing; advanced analysis of the effect of the economy on family financial planning; retirement plans and social security; insurance; home ownership and housing.

777. Family Financial Counseling. 5 hours.

Prerequisite: HCE 576/776 or permission of department.

Case study and practicum experiences related to financial counseling for families.

790. Internship Orientation. 1 hour.

Orientation to an internship experience.

791. Housing and Consumer Economics Internship. 5-15 hours. (Max. 15 hours.)

Prerequisite: HCE 590/790, upper division coursework in HCE, minimum GPA Of 2.5, and permission of department.

Supervised work experience in housing, household equipment, home management or consumer economics.

860. Theories in Family Economics. 5 hours.

Prerequisite: One course in intermediate micro-economic theory.

Major theoretical approaches to family economic decision-making, including neoclassical, household production, product characteristics, consumer behavior, and family ecosystems theories. Review of classic research testing theoretical propositions from these approaches.

865. Policies and Programs for Consumers. 5 hours.

Prerequisite: HCE 860 or permission of department.

A systematic assessment of public policies and programs relating to consumers in the market. Policies promoting consumer information and pro-

tection, as well as service-provision programs, are explored in terms of cost-benefit relationships.

867. Family Resource Management Theories and Applications. 5 hours.

Prerequisite: Senior division course in family resource management or permission of department.

Theories of family resource management for the realization of values and goals through the effective use of human and material resources. The family is regarded as the focal point in this approach.

872. Families as Producers and Consumers. 5 hours.

Prerequisite: HCE 860 and 865.

Theories and research on family time allocation applied to family labor force participation, human capital investment, fertility, and intertemporal decisions. Current policy questions on family economic behavior in the household and in product and factor markets.

884. Housing Theories and Research. 5 hours.

Prerequisite: ([CFD/TMI/HCE 690 and HCE 860] and [STA 421/621 or equivalent]) or permission of department.

Theoretical and empirical housing models and concepts. Building on previous research, the student will develop and test his/her own conceptual model.

886. Housing Policies in Contemporary Society. 5 hours.

Prerequisite: HCE 860.

Family housing needs related to government housing policy in contemporary society.

900D. Doctoral Research. 1-15 hours. (Max. 90 hours.)

Prerequisite: Permission of department.

Research while enrolled for a doctoral degree under the direction of faculty members.

901. Directed Study in Housing and Consumer Economics. 1-20 hours. (Max. 20 hours.)

Prerequisite: Permission of department.

Independent study and/or research under supervision of an instructor. (No more than 10 hours may be counted toward master's degree requirement.)

910. Seminar in Housing and Consumer Economics. 5 hours. (Max. 10 hours.)

Prerequisite: Fifteen hours of doctoral level graduate work and permission of department.

Selected topics in housing and consumer economics.

920. Applications of Statistics in Housing and Consumer Economics. 5 hours. (Max. 10 hours.) Prerequisite: HCE 860 and [CFD/TMI/HCE 690 (or equivalent)] and AEC 814.

Application of statistical techniques to housing and consumer economics research, including multiple regression, simultaneous equations methods (2SLS/3SLS), selectivity models, limited dependent variable problems and methods (logit, probit, tobit), and analysis of covariance structures (LISREL).

930D. Doctoral Dissertation. 1-15 hours. (Max. 30 hours.)

Prerequisite: Permission of department.

Textiles, Merchandising, and Interiors (TMI)

Ian R. Hardin, *Head*

Helen H. Epps, *Graduate Coordinator,*

542-4913

(Dawson Hall)

620. Advanced Textiles. 5 hours

Prerequisite: TMI 320 and 320L.

In-depth study of fibers and finishes; emphasis on man-made fibers, new fiber and finish developments and technology.

625. Introductory Polymer Science. 5 hours.

Prerequisite: TMI 420/620, CHM 240-240L and 241-241L.

An introduction to the science of polymers including the mechanisms of polymer formation and degradation and methods of polymer characterization.

630. Clothing and Human Behavior. 5 hours.

Prerequisite: PSY 101 or SOC 105.

A multidisciplinary approach to the study of clothing with particular emphasis on psychological, sociological and economic aspects of clothing.

645. Textile Dyeing. 5 hours.

Prerequisite: TMI 325 and permission of department.

An in-depth study of textile dyeing processes with emphasis on fiber-dye association. Analysis of dyeing techniques and properties of dyes and dyed materials.

664. (DRA) History of Costume: Antiquity to 19th Century. 5 hours.

Prerequisite: [TMI 320-320L] or permission of department.

Interrelationship of costume and social, cultural, political and economic environments from antiquity to the 19th Century.

666. History of Costume from the 19th Century to Present. 5 hours.

Prerequisite: TMI 320-320L or permission of department.

Interrelationship of costume and social, cultural, political and economic environments from 19th Century to present day.

668. History of Textiles in Europe and America, 1700-1950. 5 hours.

Prerequisite: TMI 320-320L or permission of department.

Development of historic textiles and the textile industry in Europe and America from 1700-1950.

671. Study Tour in Textiles, Merchandising, and Interiors. 5-10 hours. (Max. 10 hours.)

Prerequisite: Permission of department.

An on-location study of clothing, textiles, fashion merchandising and residential interiors and furnishings in the United States. Includes lectures by recognized leaders in the field(s); meetings with designers, manufacturers, merchants and field trips to designers' showrooms or studios, manufacturing plants, distribution centers, retail stores, and museums.

675. Historical Homes and Furnishings. 5 hours.

Prerequisite: [TMI 375 and (ART 200 or 287 or 288 or 289)] or permission of department.

A study of decoration in the past with application to contemporary interiors.

676. Decorative Accessories for the Home. 5 hours.

Prerequisite: TMI 475/675 or permission of department.

Historical and cultural development of accessories used in the home including ceramics, metals, and textiles. Design and characteristics of materials in these accessories will be covered.

677. Contemporary Home Furnishings. 5 hours.

Prerequisite: [TMI 375 and (ART 200 or 287 or 288 or 289)] or permission of department.

Contemporary developments in furniture and accessories for the home; designs and materials used in contemporary homes.

678. Fabrics for Furnishings and Interiors. 5 hours.

Prerequisite: TMI 325 and 475/675 or 477/677 or permission of department.

Construction, fibers, and finishes for fabrics with emphasis on quality, durability, and utilization of current materials for soft floor coverings, window treatments, and upholstery. Estimations and specifications.

685. American Interiors and Furnishings. 5 hours.

Prerequisite: TMI 475/675 or ENV 476/676 or permission of department.

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American interior design and furnishings from the seventeenth to the twentieth centuries. Identification of styles as well as social, cultural, and historic influences.

688. Historic Interior Materials. 5 hours.

Prerequisite: TMI 485/685 or permission of department.

Ceiling, wall and floor coverings, window treatments, upholstery, and lighting in historic American interior design, with emphasis on analysis and selection.

700M. Master's Research. 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of department.

Research while enrolled for a master's degree under the direction of faculty members.

710B. International Textiles and Apparel: Asia. 5 hours.

Prerequisite: TMI 320-320L.

Textile and apparel production and distribution in relation to the culture, politics and policies of major textile and apparel industries in Asia. Emphasis placed on impact of global issues on marketability and availability of textile and apparel products.

725. Chemical and Optical Analysis of Textiles. 5 hours.

Prerequisite: TMI 325 and 420/620 and CHM 241 and 241L.

Theory and application of organic chemistry and optical analysis to fabrics, dyes and finishes.

730M. Master's Thesis. 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of department.

731. Product Standards and Quality Analysis. 5 hours.

Prerequisite: STA 200 and TMI 325 or 722 and MKT 360 or MAN 351 or equivalent course work for transfer or graduate students.

Processes of developing, maintaining, and assessing product standards, from the initial design process to end uses of textile and apparel products. Quality assurance and certification programs; governmental regulations; statistical analysis and control and benefits offered through standards are other topics that will be discussed.

735. Textile Finishing Processes. 5 hours.

Prerequisite: TMI 325 and 420/620.

Theory, application, evaluation and identification of textile finishes and textile auxiliary processes. Examination of the role of finishing and types of finishes used in manufacturing fibers, yarns and fabrics.

740. Nonwovens Technology. 5 hours.

Prerequisite: TMI 320-320L and 420/620 and permission of department.

The science and technology of the manufacture and conversion of nonwoven webs with examination of the interrelationships involving raw materials, bonding systems, manufacturing processes, product properties and end uses.

761. Clothing and Textile Economics. 5 hours.

Prerequisite: TMI 320-320L and [ECN 106 or 107].

Organization and functions of clothing and textile industries. Factors related to production, distribution and consumption of apparel and household textiles; special problems; field trips.

771. Residential Interiors and Economic Resources. 5 hours.

Prerequisite: TMI 378 and 478/678 or permission of department.

Residential space planning and selection of fabrics, finishes, and furnishings using specified amounts of economic resources.

810A. Textiles, Merchandising and Interiors Seminar. 2 hours.

Prerequisite: Permission of department.

Critical analysis of research and theory in clothing, textiles and furnishings. Intensive reading and discussion of selected topics to be presented by advanced students, faculty, and guest speakers.

817. Color Science. 5 hours.

Prerequisite: TMI 325 and MAT 253 or permission of department.

Development of color order systems and color theory in relation to color vision, light and optics; problems in visual and instrumental color measurement of materials with emphasis on textile materials.

820. Environmental Aspects of Textiles. 5 hours.

Prerequisite: TMI 561/761.

Detailed analysis of environmental issues related to textile manufacturing. Examination of water, air, noise and solid pollution controls and legislation and their impact on the textile industry.

825. Physics of Textile Structures. 5 hours.

Prerequisite: TMI 420/620 and 325 and PCS 137-137L or 127-127L or permission of department.

Theoretical analysis of fine fiber structure, physical properties of yarns, fabric shear deformation and bending. Evaluation of interrelationships among fiber structure, yarn structure, fabric geometry and fabric performance.

845. Dyeing Theory. 5 hours.

Prerequisite: TMI 445/645 or permission of department.

Theoretical basis of textile dyeing, with emphasis on mathematical descriptions of equilibrium and kinetic processes of dye sorption.

860C. Contemporary Topics in Textiles, Merchandising and Interiors. 3 hours.

Prerequisite: Ten hours in upper division clothing and textiles.

Analysis of current specialized topics in textiles, clothing and furnishings. Focus on economic, environmental and social factors related to textiles, clothing and furnishings.

867. Textiles, Merchandising and Interiors Research Methods. 5 hours.

Prerequisite: TMI 810A-E or 860C.

The philosophy of research applicable to clothing, textile and interiors studies; methodology and interpretation of research literature.

900D. Doctoral Research. 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of department.

Research while enrolled for a doctoral degree under the direction of faculty members.

901. Special Problems in Textiles, Merchandising and Interiors. 1-20 hours. (Max. 20 hours.)

Prerequisite: Permission of department.

Independent study and/or research under supervision of an instructor. (No more than 10 hours may be counted toward master's degree requirements.)

930D. Doctoral Dissertation. 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of department.

Food Science and Technology (FS)

Michael P. Doyle, *Head*

Philip E. Koehler, *Graduate Coordinator,*

542-1099

(*Food Science Building*)

Programs of study leading to both the Master of Science and Doctor of Philosophy degrees in food science are offered in the various fields of interest in the Division of Food Science and Technology.

Since the application of science and engineering is important in properly selecting, preparing, processing, packaging, distributing and utilizing foods, students selecting this field must be able to delve into problems involving chemistry, microbiology, engineering, and other sciences as well as in the more applied problems concerned with food

production, stability, or toxicology. Individuals whose baccalaureate degree is in other fields of science often enter this graduate program because of the important challenges of supplying food to mankind and the opportunities that this field provides to those with advanced degrees. Programs of study are designed for each individual to best utilize his/her prior training and his/her career objectives. The food science and technology division occupies the food science and dairy science buildings in the University of Georgia Science Complex on South Campus in Athens and the food science building at the Georgia Agricultural Experiment Station in Griffin. All three buildings are well-equipped with modern instrumentation, pilot plants, and other facilities necessary for graduate research in food processing, food chemistry, food microbiology, food engineering, sensory evaluation, food biotechnology, food toxicology, product development, and nutrient analyses. Faculty in the division are scientists and engineers with expertise in several fundamental and applied disciplines offering a diverse selection of courses and research programs.

Research skills in either statistics, computer science, or a foreign language are required for the PhD program. Graduate seminar is required for both MS and PhD programs.

601. Proseminar in Food Science. 1 hour.

Prerequisite: Required of all new Food Science graduate students.

Seminar on research methods with an emphasis on presentation and instructional techniques.

603-603L. Dairy Processing. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: CHM 112-112L and BIO 101-101L.

Fundamental principles of dairy processing technology including heat treatment, manufactured milk products, frozen dairy products, and quality control.

607-607L. (MIB) Food and Dairy Microbiology.

5 hours. Three 1-hour lectures and two 2-hour lab periods.

Prerequisite: MIB 350.

A study of microorganisms in natural and processed food and dairy products, including their origin, nature, effect on food, and relationship to human health.

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609-609L. Principles of Food Processing. 5 hours. Four lectures and one 3-hour lab period. Prerequisite: MIB 350-350L or permission of department.

An overview of food preservation by thermal processing, drying, cooling, freezing, and fermentation is conducted. Topics include the principles of preservation by control of microbial and enzymatic activity, minimization of chemical, physical and sensory deterioration, and bio-processing applications.

611-611L. Food Engineering Fundamentals. 5 hours. Three lectures and two 3-hour lab periods. Prerequisite: MAT 254 or permission of department.

Mass and energy balance, fluid flow, heat transfer, and refrigeration in food plant operations. The course will cover the theory, calculations and design practices, and equipment used on these operations, as well as the physical, chemical, and microbial changes that can occur in foods in processes employing these operations.

612-612L. Food Engineering Fundamentals. 5 hours. Three lectures and two 3-hour lab periods. Prerequisites: FS 411/611 or permission of department.

Continuation of FS 411/611. Covers phase equilibria in foods, evaporation deaeration, drying, filtration, size reduction, mechanical separation processes, agglomeration, and process control.

614-614L. Food Chemistry. 5 hours. Three lectures and two 3-hour lab periods. Prerequisite: CHM 240 or 340, FS 301, 367, or 409/609.

A study of the chemical and physical properties of foods.

615-615L. New Food Product Development. 5 hours. Three lectures and two 2-hour lab periods. Prerequisite: FS 409/609-409L/609L and FS 414/614-414L/614L.

Basic stages of new food product development, food constituents and functionality, ingredient functions and selection, sensory principles and evaluation, dietary guidelines for product development, food formulations, new product management and marketing, trademarks, patents and labels.

617-617L. (ADS) Experimental Techniques in Meat Science and Muscle Biology. 4 hours. See ADS 617-617L.

619. Nutritional Quality of Food and the Effect of Technology. 5 hours.

Prerequisite: FS 414/614, BCH/BIO 301, or permission of department.

A study of the nutritional properties of food and the effects of modern technology on nutritional quality.

621-621L. (EHS/MIB) Environmental Microbiology. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: MIB 350.

Types of microorganisms in the environment; effect of different environmental conditions on microbial existence, public health aspects of environmental microbiology, and applications of microorganisms to solve environmental problems.

622-622L. Instrumental Methods of Food Analysis. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: CHM 240.

Spectrophotometric, colorimetric, chromatographic, and potentiometric methods of analysis as applied to food will be studied. Emphasis will be placed upon correlation and interpretation of results.

625. Governmental Regulation of Food Safety and Quality. 3 hours.

Prerequisite: Permission of department.

Role of mandatory and optional food regulations exercised by state, federal and international agencies on food quality, safety, wholesomeness and nutrition.

652-652L. (EHS) Microbiology of Food Sanitation. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: MIB 350 or FS/ADS/MIB 407/607-407L/607L.

Study of microorganisms and practices important in food sanitation. Control of microorganisms in the food industry environment to ensure food safety.

657-657L. (MIB) Food Fermentations. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: MIB 350-350L.

Microbial and technical aspects of food fermentations. Fermentations to be studied include dairy, beer, wine, vegetable, bread, soy, and various food additives and nutrients.

658-658L. Food Quality Control. 3 hours. Two lectures and one 3-hour lab period.

Prerequisite: MAT 116 and FS 301 or 367 and STA 200.

Objectives of food quality control, food quality measurements; HACCP; food attribute and variable control charts; food sampling plans; and evaluation of food production/process control.

659-659L. Food Packaging. 3 hours. Two lectures and one 3-hour lab period.

Prerequisite: FS 367 or 301 or permission of department.

Raw materials, processes and machinery used in the transportation, storage and marketing of packaged food products. The relationship between

packaging materials, food processing operations and product quality. Evaluation of chemical and physical properties of food package materials.

662. Food Biotechnology. 5 hours.

Prerequisite: BCH 401/601 or BCH/BIO 310. Recombinant DNA in food and enzyme biotechnology, tissue culture, and microbial transformations. Applications and regulations of biotechnology in the fats and oil industry.

668-668L. Advanced Meat Processing. 5 hours. Four lectures and one 3-hour lab period.

Prerequisite: FS 414/614-414L/614L and 407/607-407L/607L.

The advanced theories and practices of meat processing and technology; scientific basis for meat as a food, USDA and FDA regulations governing meat processing and the latest innovations in commercial meat processing.

689-689L. (ADS) Advanced Meat Science I. 5 hours.

See ADS 689-689L.

700M. Master's Research. 1-15 hours. (Max. 60 hours.)

Prerequisite: Permission of department. Research while enrolled for a master's degree under the direction of faculty members.

710. Food Products Formulation and Preservation. 5 hours.

Prerequisite: [FS 367 or 301] or permission of department.

Food preservation by canning, freezing and dehydration. Food ingredients and their functional properties. Formulation of shelf stable food products. Practices to ensure the safety and storage stability of processed foods.

730M. Master's Thesis. 1-15 hours. (Max. 20 hours.)

Prerequisite: Permission of department.

802-802L. Food Lipids. 5 hours. Four lectures and one 3-hour lab period.

Prerequisite: FS 414/614, BCH 401/601 or 801. Structure, composition, preservation, deterioration, analysis, nutritional qualities, functional properties and biotechnological modification of lipids and fat substitutes in foods.

803. Food Carbohydrates. 5 hours.

Prerequisite: FS 414/614-414L/614L or BCH/BIO 310 or BCH 401/601 or permission of department. The classes, structure, composition, properties, reactions, uses in food, biotechnological modification and analysis of carbohydrates.

805-805L. Flavor Chemistry and Evaluation. 5

hours. Three lectures and two 2-hour lab periods. Prerequisite: STA 421/621, CHM 341 or permission of department.

Sensory methods of evaluating flavor and physical or chemical methods of measuring flavor components; the flavor characteristics of various chemicals, especially as influenced by concentration and interaction with other compounds; flavor formulation; and the stability of flavor substances during processing and storage will be studied.

806. Advanced Technology of Seafoods and Food Products of Aquatic Origin. 5 hours.

Prerequisite: FS 409/609-409L/609L or 424/624-424L/624L.

Aquacultural practices, harvesting, commercial handling and processing of marine and fresh water organisms used as food will be discussed. New product development and marketing practices will also be covered.

807-807L. Food Colorants. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: CHM 240.

The chemical, biochemical and nutritive properties of natural and artificial food colorants are studied. Methods used for their isolation and study are demonstrated.

808. Food Toxicology. 4 hours.

Prerequisite: FS 407/607, CHM 240.

Principles and problems in evaluating the wholesomeness, and safety of foods, food components, and intentional or incidental additives. Consideration of selective toxicity, detoxication mechanisms, structure and biological activity; basic concepts and techniques of safety evaluation, interpretation of biological data.

813-813L. Advanced Food Processing Concepts. 5 hours.

Prerequisite: FS 412/612 and BCH 401/601 and FS 407/607 or permission of department.

The principles and basis for recently developed food processes and application of emerging technologies in scientific journal articles to process improvement or new product development.

815. Food Science Seminar. 1 hour. (Max. 6 hours.)

Prerequisite: Any two senior division courses in food science.

Discussion of selected topics in food science.

819, 820. Methods in Food Science. 5 hours each.

Selected problems associated with food science will be studied to develop greater facility in the application of scientific methods to the solution of problems.

825-825L. Membrane Separations. 3 hours. Two lectures and one 3-hour lab period.

Prerequisite: FS 411/611-411L/611L or permission of department.

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Membrane separation technology, including microfiltration, ultrafiltration and reverse osmosis; membrane chemistry, structure, formation and properties, membrane fouling and cleaning, process design, economics, modelling techniques and industrial applications.

827. Advanced Food Fermentations and Bioprocessing. 4 hours.

Prerequisite: BCH 401/601 and FS 411/611-411L/611L and FS(MIB) 457/657-457L/657L or permission of department.

The microbiology, biochemistry and biotechnology of food fermentations, including microbial process, kinetics, bioprocessing reactor design, and product separation technologies utilized in large scale fermentation processes.

852-852L. Food Proteins and Enzymes. 5 hours.

Prerequisite: FS 414/614-414L/614L or BCH 401/601 or 610.

Topics include the biochemistry of structure and function of proteins and enzymes important in food science applications. Emphasis is placed on techniques for isolation and characterization of proteins and enzymes.

853-853L. Food Texture. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: FS 411/611-411L/611L or 412/612-412L/612L and 414/614-414L/614L.

Food texture and influencing factors; methods for analysis using instrumental and sensory techniques with emphasis on emulsion systems.

900D. Doctoral Research. 1-15 hours. (Max. 80 hours.)

Prerequisite: Permission of department. Research while enrolled for a doctoral degree under the direction of faculty members.

930D. Doctoral Dissertation. 1-15 hours.

(Max. 30 hours.)
Prerequisite: Permission of department.

Environmental Health Science (EHS)

601. Proseminar in Environmental Health. 1 hour.

Prerequisite: Graduate student status. Research methods with an emphasis on presentation and instructional techniques.

608. Environmental Air Quality. 3 hours.

Prerequisite: CHM 240 and 240L. Pollution in the atmosphere, workplace, and indoor settings; health effects, regulatory and public policy issues and control of air pollutants.

610-610L. Industrial Hygiene. 5 hours.

Four lectures and one 2-hour lab period.

Prerequisite: CHM 240 and 240L and PCS 127-127L.

The anticipation, recognition, evaluation and control of those environmental factors, arising in or from the workplace, which can cause sickness, impaired health and well-being, or significant discomfort and inefficiency among workers or among community citizens.

615. Solid and Hazardous Waste Management. 5 hours.

Prerequisite: CHM 240-240L, and EHS 306. The chemical and biological properties, treatment methods, toxicity, proper methods of disposal, and long-term health effects of solid hazardous waste including radioactive waste will be examined. Attention is focused on regulatory and industrial management of waste.

621-621L. (FS/MIB) Environmental Microbiology. 5 hours.

See FS 621-621L.

635-635L. Environmental Chemistry. 5 hours.

Four lectures and one 3-hour lab period. Prerequisite: AGY 305-305L and CHM 240-240L or permission of department. Chemical principles of environmental processes which result from natural or human-generated phenomena; air, water and soil chemical reactions involving pollutants and wastes; measurement of pollutants in the environment.

649. Environmental Toxicology. 5 hours.

Prerequisite: CHM 240, 240L, and [BIO 104-104L or 108-108L].

A study of the extent and significance of toxic agents in man's environment, and the physical, chemical, and biological processes which determine their behavior, fate, and ultimate effect on human health.

652-652L. (FS) Microbiology of Food Sanitation. 5 hours.

See FS 652-652L.

659-659L. Microbiology of Water and Wastewater. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: CHM 261, MIB 350. In-depth study of microbial life of water and wastewater, domestic and industrial, with scrutiny of current treatment processes. Sampling methods will be demonstrated along with proper storage of samples. Study will be made on effects of different types of waste on microbial population of rivers and streams.

700M. Master's Research. 1-15 hours. (Max. 60 hours.)

Prerequisite: Permission of department. Research while enrolled for a master's degree under the direction of faculty members.

730M. Master's Thesis. 1-15 hours. (Max. 20 hours.)

Prerequisite: Permission of department.

812. (AAE) Roles and Responsibilities of Environmental Policy Makers. 3 hours.

Prerequisite: Graduate standing.

Roles of science, engineering, law, journalism, economics, grass roots activism, and the legislative and regulatory process in the development of environmental policy.

815. Environmental Health Seminar. 1 hour.

Prerequisite: Two junior or senior level courses in environmental health.

Selected topics in environmental health.

851-851L. Environmental Risk Assessment and Communication. 5 hours.

Four lectures and one 2-hour lab period.

Prerequisite: [EHS 449 or PHR/VPH 491/691 or PHR/VPH 892] and [basic computer skills or permission of department].

Assessment of risks related to environmental exposures; government agency definition and conduct of risk assessments; public communication of environmental exposure risks.

Forest Resources (FRS)

Arnett C. Mace, Jr., *Dean*

James C. Fortson, *Graduate Coordinator,*
542-1186

(*Forest Resources Building*)

Doctoral research skill requirement: satisfy Graduate School research skill requirement for Doctor of Philosophy.

Graduate study opportunities in the School of Forest Resources encompass numerous disciplines needed to understand and effectively manage renewable natural resources. Graduate training and research are conducted in the general areas of forest biology and silviculture, forest business management, forest biometrics and management, forest soils and water resources, forest resource economics and policy, wildlife and fisheries biology, and wood technology.

Excellent facilities are available for graduate study and research. The School of Forest Resources is housed in a complex of four buildings, two of which are devoted primarily to

graduate education and research. In addition, two modern U.S. Forest Service research laboratories, located adjacent to the School, provide excellent opportunities for cooperative research in silviculture and wood utilization. The Department of the Interior, U. S. Fish and Wildlife Service, also maintains a Cooperative Fishery and Wildlife Unit in cooperation with the School of Forest Resources, as well as a Migratory Bird Unit and an Environmental Contaminant Evaluation Field Station.

Students with baccalaureate degrees in related fields may be accepted for graduate study in the School of Forest Resources if qualified.

600-600L. Forest Soil Management. 5 hours.

Four lectures and one 3-hour lab period.

Prerequisite: CSS 305-305L or CSS/FRS 306-306L.

Corequisite: FRS 303-303L.

Morphological, physical and chemical soil properties affecting tree growth and forest productivity; evaluation of soils and site quality; preparation of forest sites for planting, diagnosis and correction of nutrient limitations; use of forest soil systems for waste treatment.

602. Genetics and Breeding of Forest Trees. 4 hours.

Prerequisite: BIO 104-104L or 108-108L.

Genetic variation in forest trees; harnessing natural variation and creating new variation to meet breeding objectives; economic and biological consequences of tree domestication; conservation of genetic resources.

603. Regional Silviculture. 5 hours.

Prerequisite: FRS 303 or equivalent; or permission of school.

Identification of the major forest regions of the United States and discussion of their silvicultural management. Advanced hardwood and pine silviculture of the Southeastern region will be emphasized.

611. Forest Hydrology. 5 hours.

Prerequisite: CSS/FRS 306-306L or permission of school.

Terrestrial components of the hydrologic cycle focusing on the qualitative analysis of precipitation, snowmelt, runoff generation, routing, infiltration and subsurface flow and transport. Emphasis is on the definition of hydrologic processes, identification of hydrologic resources, development of environmental monitoring techniques, and application to hydrologic resource management.

612. Quantitative Methods in Forest Hydrology. 5 hours.

Prerequisite: FRS 411/611 or permission of school.

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Theory of forest hydrologic processes: precipitation, evapotranspiration, streamflow, groundwater occurrence and movement, and soil zone flow and transport. Emphasis is on using quantitative methods in conjunction with field and laboratory data to identify flow and transport dynamics

613. Field Methods in Hydrology. 3 hours.

Two 3-hour lab periods.

Prerequisite: FRS 411/611 or equivalent.

Field data acquisition methods related to forest hydrology precipitation quantity and quality, evapotranspiration, streamflow, groundwater occurrence and movement, and soil zone transport processes. Methods for determining flow paths, mass balances and environmental fate of solutes.

614. (ECL/ANT) Principles of Conservation and Sustainable Development II. 5 hours.

See ECL 614.

616-616L. Environmental Monitoring. 5 hours.

Four lectures and one 3-hour lab period.

Prerequisite: [CSS/FRS 306-306L and FRS 361-361L] or equivalent.

Design, implementation, and interpretation of sampling programs for environmental systems (especially aquatic systems) for monitoring, regulatory activities, quality control, scientific study and impact assessment.

630. Range and Wildlife Habitat Evaluation and Management. 5 hours.

Prerequisite: FRS 302.

Vegetation and habitat evaluation procedures; environmental impact assessment; analysis of food habits and forage quality; ecology and management of forest range habitats for domestic livestock and wildlife; integration of timber, grazing, and wildlife management.

631-631L. (ECL) Limnology. 5 hours. Three lec-

tures, two 2-hour lab periods and field trips.

See ECL 631-631L.

632. Wildlife Physiology and Nutrition. 5 hours.

Prerequisite: CHM 261 and FRS 330 and FRS/ECL 358-358L or permission of school.

An advanced course relating animal physiology and nutrition to wildlife ecology and management.

637. Fish Physiology. 5 hours. Three 1-hour lectures and two 3-hour lab periods.

Prerequisite: CB 300-300L or permission of school.

An overall review of basic fish physiology with an emphasis on the effects of various environmental stresses on physiological functions of fish.

640. Forest Landscape Management. 3 hours.

Prerequisite: FRS 303 and 340, or permission of school.

History and development of forest landscape appreciation. Effects of conventional forest practices on landscape quality. Methods of

manipulating forest stands and understory vegetation for maintaining or enhancing forest landscape quality.

654. Advanced Physical and Mechanical Properties of Wood. 5 hours.

Prerequisite: FRS 352-352L or equivalent.

Advanced study of the physical and mechanical properties of wood, including how they relate to the chemical and anatomical composition of wood and wood products.

655. Advanced Wood Processing. 5 hours.

Prerequisite: FRS 352-352L and 654 or their equivalents.

Advanced study of wood processing unit operations (machining, drying, fastening, finishing, treating) emphasizing the relationship between wood characteristics and successful processing.

656. Theory and Practice of Adhesive Bonding of Wood. 5 hours.

Prerequisite: FRS 654 or equivalent.

A survey of basic mechanisms of adhesion and how each relates to wood gluing, followed by in-depth study of principles and practices relating to successful wood gluing.

657-657L. Identification of Domestic and Tropical Woods. 3 hours. (Max. 6 hours.) One lecture and two 2-hour lab periods.

Identification of common domestic and tropical woods.

661-661L. Forest Mensuration. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: FRS 300-300L and 361-361L.

Methods for direct measurement and indirect estimation of primary and secondary forest products. Emphasis on sample survey applications in timber management and on forest growth and yield relationships.

662. Timber Management. 4 hours.

Prerequisite: FRS 461/661.

Organization and management of forest properties for the production of commercial forest products.

664. Forest Inventory. 5 hours.

Prerequisite: FRS 461/661-461L/661L.

Corequisite: FRS 461/661.

Planning forest inventories and the comparison of various equal and unequal probability sampling concepts are emphasized. Permanent and temporary forest sampling procedures are compared. Current stand and future growth estimation principles are included.

671-671L. Forest Resources Management. 4 hours.

Three lectures and one 2-hour lab period.

Prerequisite: [FRS 361-361L and second professional year standing in Forest Resources] or permission of school.

Principles of management for renewable natural resources systems and the use of systems analysis in problem definition and solution. Alternative management approaches, including sustainable production in commodity, economic, net social benefit, and ecosystem terms. Implementation, administration, and monitoring of planned management actions.

672. Forest Resources Management and Economics. 5 hours.

Prerequisite: FRS 471/671.

Managerial decisions and resource use planning, including economic analysis of alternatives, choices of optimal and preferred strategies, and implementation in conflicting use situations. Resource history and policy sufficient for appropriate consideration in formulation of management objectives and strategies in both the private and public sectors.

674. Data Structures and Algorithms in Forest Resources. 5 hours.

Prerequisite: CS 201 or 500/700 and FRS 362 or equivalent.

An introduction to structured programming and the design of data structures and algorithms for specific forest resource applications, including forest land management information systems, inventory processors, and decision-making tools.

675. Experimental Methods in Forest Resources Research. 5 hours.

Prerequisite: STA 422/622 and CS 500/700.

The use of statistical procedures and computing equipment to collect, analyze, and interpret forest resources research data.

680. Forest Resources Policy. 4 hours.

Prerequisite: POL 101.

Forest policy as a process, establishing forestry agendas, political decision models, political institutions and interest groups, policy in organizations, current issues.

700M. Master's Research. 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of school.

Research while enrolled for a master's degree under the direction of faculty members.

701. Urban Tree Management. 5 hours.

Prerequisite: One course in botany or biological science or permission of school.

Establishment and maintenance of trees in urban environments. Nature and benefits of trees, planting and soil management; pruning, repair and protection; stress management; values of urban trees.

702. Introduction to Plant Tissue Culture. 3 hours.

Prerequisite: Permission of school and advanced course work in plant sciences.

Introduction to the types of plant tissue culture and their uses, with examples of the more important culture systems currently employed. (Taught every other year, alternating with FRS 802.)

730-730L. Techniques in Wildlife Population Analysis and Management. 5 hours. Three lectures, two 3-hour lab periods, and field trips.

Prerequisite: Permission of school.

Field and laboratory methods commonly used by professional wildlife ecologists to analyze and manipulate animal populations.

730M. Master's Thesis. 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of school.

735. Wildlife Habitat Management. 5 hours.

Extended field trips will be required.

Prerequisite: Permission of school.

A field course dealing with ecology of wildlife habitats and their manipulation in relation to other land uses.

736. Fisheries Management. 5 hours. Two lectures and one 3-hour lab.

Prerequisite: ECL 405/605-405L/605L or permission of school.

Principles, analytical methods, and techniques used in the management of fishery resources are presented. The lab will include field trips. This course emphasizes an ecological approach to resource management.

737. Fish Nutrition. 4 hours.

Prerequisite: BCH/BIO 310 or BCH 610 or permission of school.

Nutritional requirements and metabolism of dietary components; nutritional diseases, diet formulation and feeding, and dietary toxicants are discussed for commonly cultured fish species.

738. Fish Culture. 5 hours. Three lectures, one 2-hour lab period, and field trips.

Prerequisite: CB 300-300L and permission of school.

Study of extensive and intensive culture of fishes with emphasis on methods and species utilized in the eastern United States.

740-740L. Forest Recreation Area Development. 5 hours.

Prerequisite: FRS 340.

Principles of recreation area planning, site selection, and development.

741. Wilderness Management. 5 hours.

Prerequisite: FRS 340 or permission of school.

Readings and discussion of the origins, philosophy, and values of the wilderness concept, and its associated issues and arguments. Wilderness management—scope, objectives, and options avail-

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able within legal, practical, and philosophical limits. Field study and development of a management plan.

771. Advanced Forest Economics. 4 hours.

Prerequisite: ECN 106.

Corequisite: FRS 471/671.

Microeconomic and production economics theory with forest resources applications, financial analysis of investments, social benefit-cost analysis.

772-772L. Forest Harvesting and Roads. 4 hours.

Three lectures and one 3-hour lab period.

Prerequisite: FRS 300-300L.

Corequisite: FRS 303-303L.

Techniques and systems for harvesting and roading forests. Production, costs, safety, and environmental protection measures are evaluated and discussed. Field exercises stress planning of harvesting and road construction operations.

773. Economics and Principles of Management of Southern Forests. 5 hours.

Prerequisite: Permission of school.

Study of economic importance and opportunities of forest lands and associated resources; renewable vs. non-renewable resources; principles of management of timber, water, wildlife, recreational and related resources; and introduction to public, private and industrial forest land management practices. A bibliography and additional readings will be required of graduate students. (Not open to forestry majors.)

775. Procurement and Management of Wood Fiber Supply. 4 hours.

Management of the wood fiber supply, program management functions, legal aspects and analysis of current issues in raw material management.

776. Forest Products Marketing. 5 hours.

Prerequisite: Permission of school.

An overview of planning, organizing, and managing forest products marketing programs, both domestically and internationally. Focus on developing marketing strategies and implementation of marketing plans in the context of forest industry structures and distribution channels.

778. Timberland Accounting, Finance and Taxation. 4 hours.

Prerequisite: ACC 799.

Corequisite: FIN 800 or permission of school.

An analysis of the accounting, finance and tax aspects of acquiring, owning and disposing of timberland.

779. Forest Industry Financial Structure. 5 hours.

Prerequisite: FRS 778.

Study of the financial structure of the companies in the forest products industry. This will be primarily a project course. The students will prepare written and oral financial analysis reports on companies in the forest products industry.

782. Natural Resources Law for Managers and Administrators. 5 hours.

Introduces future natural resource managers to statutory and case law and to important regulations concerning resource conservation, allocation, and development, and acquaints them with modern systems-sensitive regulatory programs affecting natural resource administration. Inquires into the division and nature of the functions of the judicial and executive branches of government. Not open to Law School students.

785. Forest Policy Issues. 3 hours.

Prerequisite: POL 101 or FRS 480/680.

The course will familiarize students with forestry issues and political processes. A general framework for analyzing current issues will be developed and specific issues will be analyzed each year.

786. (AAE) Resource Economics and Management. 5 hours.

Prerequisite: AAE 658 or equivalent.

Analysis of economic and physical concepts of scarcity, the impact of market and social factors on resource use and the optimal management of renewable and nonrenewable resources.

798A. Fishery Management Problems. 1-15 hours. (Max. 30 hours.)

Intensive study of an aspect of forest resources management.

798B. Timber Management and Utilization Problems. 1-15 hours. (Max. 30 hours.)

Intensive study of an aspect of forest resources management.

798C. Water Resources Problems. 1-15 hours. (Max. 30 hours.)

Intensive study of an aspect of forest resources management.

798D. Planning and Administration Problems. 1-15 hours. (Max. 30 hours.)

Intensive study of an aspect of forest resources management.

798E. Wildlife Management Problems. 1-15 hours. (Max. 30 hours.)

Intensive study of an aspect of forest resources management.

799. Supervised Professional Practicum in Forest Resources. 1 hour. (Max. 3 hours.)

Prerequisite: Graduate standing

University-level teaching, including the presentation of university-level lectures and/or laboratory

sessions under faculty supervision. Required of all Forest Resources PhD students.

800. Forest Resources Seminar. 1-6 hours. (Max. 6 hours.)

Topics, both fundamental and applied, relating to multiple-use management of forests and wild land, including literature review and current advances.

803. Advanced Tree Physiology. 5 hours.

Prerequisite: FRS 304 or BOT 483 or permission of school.

A course that emphasizes the recent research into processes that directly or indirectly affect carbon gain and allocation, including photosynthesis, respiration, nutrient uptake, water relations and growth.

804. Current Topics in Forest Biotechnology. 3 hours.

Prerequisite: Permission of school.

Applications of genetic, biochemical, and physiological principles to forest trees and other woody plants, including tissue culture, protoplast culture and fusion, gene transfer, and molecular genetic techniques.

805. Forest Stand Dynamics. 3 hours.

Prerequisite: FRS 303-303L or permission of school.

Dynamics of mortality, growth, and biomass allocation in forest stands during the four stages of development (stand initiation, stem exclusion, transition, and old growth), with emphasis on silviculture of southeastern U.S. forests.

810. Advanced Forest Ecology. 4 hours.

Prerequisite: [FRS 302-302L or ECL/BIO 350] or permission of school.

Factors regulating the structure and function of forest ecosystems including forest energetics, community dynamics, disturbance, and research methods.

811. Hydrologic Modeling. 5 hours.

Prerequisite: FRS 411/611 or permission of school.

The application of advanced computer and hydrologic techniques to the solution of hydrologic synthesis and simulation problems.

812. Hillslope Hydrology. 3 hours.

Prerequisite: FRS 411/611 or FRS 811 or equivalent.

Survey of the current concepts used to describe water and chemical movement on a forested hillslope. Topics include saturated/unsaturated flow processes, techniques for measuring soil moisture, soil suction, lateral flow, and physical and mathematical models to describe flow and/or transport.

820. Scientific Research for Multiple Resource Decisions. 3 hours.

Prerequisite: Permission of school.

The evolution of science and research related to forest and wildland resource management. An analysis of recent trends in public attitudes toward forest resource research support; the contribution of research to forest land management; the importance of the problem analysis. Required of all Forest Resources M.S. and Ph.D. candidates.

823. (ECL) Lake Ecology. 2 hours.

See ECL 823.

830. Fisheries and Wildlife Seminar. 1-6 hours. (Max. 6 hours.)

Weekly meetings reviewing recent advances in fishery and wildlife research and management.

831. (ECL/BOT) Population Ecology. 5 hours.

Three 2-hour meetings per week including lecture, discussion, and readings from the current literature.

See ECL 831.

835. Ecology and Management of Waterfowl Populations and Habitats. 5 hours.

Prerequisite: Permission of school.

Ecology of North American waterfowl and their habitats. Techniques for managing waterfowl populations by harvest regulations and habitat manipulation. Identification and requirements of important wetland plants. Field trips of up to one week required.

839-839L. Estimation of Fish and Wildlife Population Parameters. 5 hours.

Prerequisite: Permission of school.

Statistical methods for estimating parameters and testing hypotheses about fish and wildlife populations. Population dynamics and sampling. Population estimation, including line-transect, mark-recapture, band-recovery, catch-effort and survival estimation.

848. Quantitative Methods in Forest Management. 5 hours.

Prerequisite: MAT 254, STA 422/622, CS 500/700.

The application of statistical procedures and computer technology to problems in forest mensuration and forest management planning. Emphasis on growth and yield prediction, management information systems and quantitative decision-making procedures.

849. Sampling Techniques for Biological Populations. 5 hours.

Prerequisites: STA 424/624.

Application of statistical sampling procedures to problems of estimation in populations of interest to the forest resource manager.

850. (PAR) Diseases of Wildlife. 5 hours.

See PAR 850.

851. (PAR) Diseases of Wildlife. 5 hours.

See PAR 851.

855. The Chemistry and Synthesis of Wood Adhesives. 5 hours.

Prerequisite: FRS 656, CHM 241-241L or their equivalents.

Detailed study of synthetic resins including their chemistry, synthesis procedures, and their chemical and physical properties as related to wood adhesive mix formulations.

856. Advanced Concepts in Plywood Production. 5 hours.

Prerequisite: FRS 656 or equivalent.

History of veneer and plywood (including advantages of plywood) followed by a study of the types and grades of plywood made with emphasis on process technology and material variables affecting successful plywood production.

878. Timberland Financing Alternatives. 5 hours.

Prerequisite: FRS 779.

A study of the alternatives to ownership for controlling the access to wood fibers. Leases, long-term timber cutting contracts, and other legal instruments will be evaluated as to their financial and operational advantages and disadvantages compared to timberland ownership.

898A. Fishery Management Problems. 1-15 hours. (Max. 30 hours.)

Intensive study of an aspect of forest resources management at the doctoral level.

898B. Timber Management and Utilization Problems. 1-15 hours. (Max. 30 hours.)

Intensive study of an aspect of forest resources management at the doctoral level.

898C. Water Resources Problems. 1-15 hours. (Max. 30 hours.)

Intensive study of an aspect of forest resources management at the doctoral level.

898D. Planning and Administration Problems. 1-15 hours. (Max. 30 hours.)

Intensive study of an aspect of forest resources management at the doctoral level.

898E. Wildlife Management Problems. 1-15 hours. (Max. 30 hours.)

Intensive study of an aspect of forest resources management at the doctoral level.

900D. Doctoral Research. 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of school.

Research while enrolled for a doctoral degree under the direction of faculty members.

921. Applied Research in Forest Resources. 1-15 hours. (Max. 15 hours.)

Designed to provide individual guidance in the development of a significant project related to the student's major field of study. A written report

presented in a format meeting professional standards must be submitted and subjected to review by an appropriate faculty committee.

930D. Doctoral Dissertation. 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of school.

Genetics (GN)

Richard B. Meagher, *Head*
Sidney R. Kushner, *Graduate Coordinator,*
542-8000
(Life Sciences Building)

The Department of Genetics offers graduate programs leading to the MS and PhD degrees. The department is particularly strong in the areas of recombinant DNA technology, regulation, genetic recombination, plant molecular biology, and population genetics. After a student is admitted, a faculty advisory committee is appointed to recommend a program of study based on the individual student's academic background and research interests. A master's degree is not required for entrance into the doctoral program, and students without master's degrees are encouraged to enter the doctoral program directly.

Faculty members associated with three interdepartmental programs in the Division of Biological Sciences—in ecology, in molecular and developmental biology and plant molecular biology—have close ties with the genetics department, especially in the areas of population genetics and developmental genetics. Graduate course offerings in these interdepartmental programs are available to students in the genetics department and serve to complement the graduate course offerings in genetics.

Physical facilities available for research include all modern equipment and facilities, including a minicomputer; and a variety of microcomputers, necessary for research in the various areas of genetics. Special on-campus facilities include a complete electron microscopy laboratory, controlled-environment equipment, equipment for radioisotope studies, a special fermentation facility, and extensive computer fa-

cilities. Cooperative arrangements for joint research exist with such off-campus facilities as the Russell Agricultural Research Center, the Yerkes Primate Center, the Sapelo Island Marine Institute, the Savannah River Ecology Laboratory, and the Oak Ridge National Laboratory.

Prospective students should address inquiries to the Graduate Coordinator, Department of Genetics. Graduate students in the department are eligible for a number of University fellowships and research and teaching assistantships. All applicants for the doctoral program will also be considered for traineeships provided by a Public Health Service Institutional National Research Service Award. The deadline for application for most fellowships and assistantships is February 15, and students are normally only admitted at the beginning of the fall quarter.

620. Advanced Genetics. 5 hours.

Prerequisite: BIO 320.

This course will discuss a limited number of prokaryotic, fungal, and mammalian genetic systems which form the basis of our understanding of molecular genetics. Techniques used in the analysis of the structure and function of viral and eucaryotic genomes will be emphasized.

660. (BIO) Evolutionary Biology. 5 hours.

See BIO 660.

700M. Master's Research. 1-15 hours. (Max. 75 hours.)

Prerequisite: Permission of department.

Research while enrolled for a master's degree under the direction of faculty members.

730M. Master's Thesis. 1-15 hours. (Max. 30 hours.)

Prerequisite: Permission of department.

809. (STA) Statistical Analysis of Genetic Data. 5 hours.

Prerequisite: STA 422/622 and 451/651.

Common statistical and genetic models appropriate for analyzing genetic data, especially DNA sequence data. Emphasis on fitting models, estimating parameters, and making inferences based upon genetic data.

812. Modeling Techniques in Population Genetics. 5 hours.

Prerequisite: BIO/GN 460/660 and MAT 254.

Quantitative techniques used in modeling evolutionary processes such as natural selection, gene flow, mutation, and random genetic drift.

813. Evolutionary Genetics. 5 hours.

Prerequisite: GN 812 and STA 421/621 or permission of department.

An introduction to genetic processes in evolution, which integrates elementary conceptual models with the literature on experimental and field studies. Major topics include basic population genetics, an introduction to quantitative genetics, and a consideration of speciation and macroevolution.

814. Advanced Population Genetics. 5 hours.

Prerequisite: GN 813 and STA 422/622 or permission of department.

An advanced course in population genetics with a rigorous treatment of population structure, gene flow, natural selection, and two-locus population genetics. Each topic will be considered from an integrated approach combining conceptual models and experimental studies.

850. Research Methods in Population Biology. 5 hours.

An introduction to models of field and laboratory studies in population biology.

860. Genetics Seminar. 1 hour. (Max. 5 hours.)

Prerequisite: Permission of department.

This course will examine the latest advances in genetics through oral presentations and invited speakers. The major emphasis will be in the areas of molecular genetics and molecular biology.

865. Scientific Ethics. 1 hour.

Prerequisite: Permission of department.

Ethical issues in genetics, scientific practices, social mechanisms in science, misconduct in science, conflicts of interest, and other issues related to ensuring the integrity of the research process.

870. Seminar in Population Genetics. 1 hour. (Max. 5 hours.)

Prerequisite: Permission of department.

Weekly meetings will be held to discuss and evaluate the current research literature in population genetics.

883. Advanced Topics in Molecular Genetics. 1-5 hours. (Max. 15 hours.)

Prerequisite: BCH 802 and GN 893 or permission of department.

A reading and/or discussion course for advanced students with previous preparation in graduate-level genetics. Topics will vary depending on instructor(s) but will involve in-depth analysis of such areas as genetic regulatory mechanisms, extrachromosomal genetics, molecular aspects of recombination mechanisms, ribosome synthesis and control, plasmid genetics, and cytogenetics.

884. Advanced Topics in Population Genetics. 1-5 hours. (Max. 15 hours.)

Prerequisite: GN 813 or permission of department.

A course for advanced students with previous preparation in graduate-level population genetics courses. Topics will vary (depending on instructors) but will involve in-depth analysis of advanced aspects of ecological and population genetics.

890A. Research Techniques in Genetics. 5 hours. (Max. 10 hours.)

Prerequisite or corequisite: One graduate-level course in genetics and permission of department. A course designed to teach techniques employed in genetics research by student participation in the research projects of members of participating faculty. A student will spend five weeks in the laboratories of each of two faculty members. A maximum of two terms may be taken for credit.

892. Nucleic Acids. 5 hours.

Prerequisite: BCH 802 or permission of department.

An advanced biochemistry course concerned with the physical chemistry, structure and function of nucleic acids. Specific topics include the isolation, structure, chemical analysis, hybridization, enzymology, and replication of DNA and RNA. Nucleic acid enzymes, protein-nucleic acid interactions and recombinant DNA technology will also be examined.

893. Advanced Molecular Genetics I. 3 hours.

Prerequisite: BCH 801 or GN 892.

The first half of an advanced course on the molecular mechanisms of gene action in prokaryotes and eucaryotes including discussions of chromosome structure and replication, mutagenesis and DNA repair, recombination mechanisms, transposition, transcription, and translation controls.

894. Advanced Molecular Genetics II. 3 hours.

Prerequisite: GN 892 and GN 893.

The second half of the advanced course on the molecular mechanisms of gene action in prokaryotes and eucaryotes. Topics discussed include: the molecular basis of gene regulation, genetics and development of organelles, cell and tissue interaction in development, hormonal mechanisms, and somatic cell genetics.

895. Molecular Evolution. 5 hours.

Prerequisite: GN 420/620 or permission of department.

In-depth analysis of the facts and theories of molecular evolution. Topics include: protein evolution, evolution of development, evolution of genome structure, and critical evaluation of contemporary evolutionary theories.

896. (BCH) Fungal Genetics. 3 hours.

Prerequisite: [GN 420/620 or equivalent] or permission of department.

A detailed genetic analysis of fungi for teaching classical and modern molecular approaches.

897. Metazoan Genetics. 3 hours.

Prerequisite: GN 893 or 894 or permission of department.

Genetics analysis of multicellular animals. Topics include classical and modern genome mapping strategies, regulation of development of complex organ systems, viral genetics, and immunogenetics.

900D. Doctoral Research. 1-15 hours. (Max. 150 hours.)

Prerequisite: Permission of department.

Research while enrolled for a doctoral degree under the direction of faculty members.

930D. Doctoral Dissertation. 1-15 hours.

(Max. 30 hours.)

Prerequisite: Permission of department.

Geography (GGY)

George A. Brook, *Head*

Thomas W. Hodler, *Graduate Coordinator*

542-2327

(GGS Building)

The Department of Geography offers masters and doctoral degrees with specialization in physical and human geography and in geographic information science (GIS). The department's strengths are in biogeography, geomorphology, quaternary studies, geoaerchaeology and climatology; urban, economic, transportation, social and development geography; and cartography, photogrammetry, remote sensing and GIS. The department has strong ties with the Institute of Ecology; the Center for Archaeological Sciences; the Marine Sciences, Asian Studies, Women's Studies and African Studies programs; the Humanities Center; the Institute of Government; the Terry College of Business; and the Institute for Behavioral Research. As a member of the Inter-University Consortium for Political and Social Research, the University supports a host of resources and services for social science research. Housed in the Department of Geography is the Center for Remote Sensing

and Mapping Science (CRMS). CRMS undertakes interdisciplinary research projects requiring the development of image and map data and processing technologies for applications in the physical, biological, and mapping sciences. The faculty hail from six different countries and so have diverse backgrounds and interests which enrich the graduate programs. There are more than fifty graduate students from the USA and overseas in residence. The MA degree requires 11 core hours and 30 elective hours. For the PhD, the department requires a minimum of 45 credit hours (including 6 core hours if not already taken in the MA program) and a reading knowledge of one foreign language or two technique courses.

Geography has excellent teaching and research facilities in a building shared with the Department of Geology. The two departments jointly operate a Geosciences Learning Center with 25 computers used for graduate computer-aided instruction. The Geomorphology Laboratory, primarily designed for standard wet-chemical and mechanical analyses of soil, sediment, and plant materials, includes a separate work area with PCs, balances and microscopes. The Plant Microfossil Laboratory is designed principally for the extraction of pollen grains from sediments and includes a separate microscope facility. The Tree-ring Laboratory has a fully automated stage and computer-controlled microscope imaging system for measuring and analyzing tree cores. The Climatology Research Laboratory includes four workstations, one receiving a feed of real-time weather data, and software packages for climatological analysis. A variety of microclimatological instrumentation is also available for student use. In addition to a word processing facility, the department maintains separate laboratories for introductory GIS and cartography; advanced GIS, remote sensing and photogrammetry; and spatial analysis and economic geography. Each laboratory is equipped with state-of-the-art computers, both PCs and workstations, on a local area network with digitizers, scanners, printers, and plotters with current software in all areas. CRMS also maintains a complex computer network and extensive software for remote sensing, GIS and photogrammetric applications. All stu-

dents have internet access and electronic mail.

The University's library holdings, particularly in geography, are extensive. Approximately 290,000 sheet maps and over 180,000 aerial photos are maintained in the nearby Science Library. The Computer Center operates one of the largest facilities in the U.S. There are numerous remote sites on campus with interactive terminals, remote printers, and various mini and microcomputer facilities.

700M. Master's Research. 1-15 hours. (Max. 45 hours.)

Prerequisite: Permission of department.

Research while enrolled for master's degree under the direction of faculty members.

730M. Master's Thesis. 1-15 hours. (Max. 45 hours.)

Prerequisite: Permission of department.

900D. Doctoral Research. 1-15 hours. (Max. 45 hours.)

Prerequisite: Permission of department.

Research while enrolled for a doctoral degree under the direction of faculty members.

930D. Doctoral Dissertation. 1-15 hours. (Max. 45 hours.)

Prerequisite: Permission of department.

Human and Regional Geography

612. Geography of Development. 5 hours.

Prerequisite: Ten hours in geography or equivalent background in related disciplines.

Geographical aspects of Third World development, including topics such as population growth, migration, industrialization, trade, and foreign aid. The spatial characteristics of economic development are viewed at the conceptual level, and implications for policy discussed.

634. Geography of Sub-Saharan Africa. 5 hours.

Prerequisite: Ten hours in geography or permission of department.

Geographic and socio-economic issues that face sub-Saharan economies as they enter the twenty-first century. Emphasis will be placed on the physical landscape, environmental conditions, social and cultural distributions, and on strategies and theories of economic development.

642. South America. 5 hours.

Prerequisite: Ten hours in geography or an equivalent background in either Spanish or history.

Geography

A regional analysis of the geography of equatorial and southern South America including physical, cultural, and economic characteristics of the several regions. Stress upon prospects for expansion of settlement, developments of resources and growth of industries.

647. Geography of China. 5 hours.

Prerequisite: Ten hours of geography or related social sciences or area studies.

A systematic and regional analysis of the physical and human geography of contemporary China. Emphasis is on modernization and development of agriculture, industry, and transportation within the context of China's resource base and large population.

648. Geography of East and Southeast Asia. 5 hours.

Prerequisite: Ten hours of geography or ten hours in the culture or language of the region.

A systematic and regional analysis of the physical and human geography of East and Southeast Asia (excluding China, see GGY 647). Major focus on resources, land utilization, population characteristics and distributions as they relate to economic and political problems. Emphasis is on Japan, Korea, Indonesia, Philippines, and Indo-China.

653. Urbanization in Developing Countries. 5 hours.

Prerequisite: ANT 400/600 or SOC 332 or POL 431/631 or GGY 358 or permission of department.

This course offers a detailed understanding of the processes of urbanization and development in the areas of the world undergoing modernization and cultural change. The city and its role are traced from pre-industrial manifestations to the modern urban centers of the eastern and western worlds.

659. Urban Geography. 5 hours.

Prerequisite: Two courses from GGY 350, 358, or ECN 133.

Analysis of urban land occupancy and its morphological-functional aspects. Introductory location theory in urban areas. Procedures in geographical analysis of agglomerated settlements.

660. Industrial Geography. 5 hours.

Theories in industrial location. Detailed locational analysis of selected manufacturing industries. Regional treatment of the spatial structure of North American manufacturing.

662. Location Decision-Making for Retail and Service Firms. 5 hours.

Prerequisite: GGY 358 or MKT 360 or 10 hours of Economics or permission of department.

Principles and theories of the location of retail and service firms. Analysis of locational decision-making and practical approaches to developing location strategies for retailing and public services. Analysis of urban retailing systems.

663. Geography of Transportation. 5 hours

Prerequisite: GGY 358 or MKT 559.

Survey of historical, engineering and economic aspects of North American transport. Influence of modal characteristics on economic phenomena. Survey of regional commodity movements at various scales. Principles and theories explaining role of transportation in regional planning, and in location of economic and political phenomena.

668. Urban Transportation and Land Use. 5 hours.

Prerequisite: GGY 459/659 or MKT 559.

Reciprocal relations between urban transportation, both freight and passenger, and urban land use organization in terms of site requirements, traffic generation characteristics and circulation problems.

672. Population Geography. 5 hours.

Prerequisite: GGY 101 and any five hours of geography, or permission of department.

Processes associated with the distribution of world population and an introduction to population data and to basic demographic techniques. Topics include theories of population change, fertility, mortality, migration population policy, and population-environment relationships with a focus on regional variations.

800. Proseminar in Geography. 1 hour.

Prerequisite: Required of all new geography graduate students.

The geography proseminar serves as an introduction to the graduate program and the departmental faculty. Students are acquainted with major foci of research activities and directions within the department.

801. Seminar in Geographic Thought and Methods. 5 hours.

Development of geographical philosophy and methods; contemporary methodological concepts and problems. Required for all graduate majors.

830. Directed Problems in Human Geography. 3-5 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Problems in advanced topics in human geography. Topics may vary.

839. Seminar in the Geography of China and East Asia. 5 hours.

Prerequisite: GGY 447/647 or 448/648 or permission of department.

Advanced research topics on the geography of East Asian countries (China, Japan, the Koreas); data sources and methodologies for research.

850. Seminar in Economic Development and Human-Environment Relationships. 5 hours.
Prerequisite: GGY 410/610 or 412/612 or 600-level regional geography course or permission of department.

Advanced problems, methods and techniques in human-environment relationships and economic development, including decision-making strategies in resource use, the role of governments and other agencies in resource exploitation, and geographic case studies from the Third World.

851. Advanced Topics in the Geography of Development. 5 hours.
Prerequisite: GGY 412/612 or 600 level regional geography or permission of department.

Advanced research topics related to the geographical aspects of Third World development. Topics may vary from year to year.

853. Seminar in Urbanization in Developing Areas. 5 hours.
Prerequisite: GGY 412/612 or 453/653 or 459/659.

Topics and research studies in urbanization; internal structure of cities and related spatial processes in developing areas.

854. Seminar in Social Theory in Geography. 5 hours. (Max. 10 hours.)
Contemporary debates concerning space and society. Epistemological debates within geography relating to the spatial constitution of society and the social production of geographical knowledge.

859. Seminar in Urban Geography. 5 hours.
Prerequisite: GGY 459/659.
Topics and research problems in urban geography. Topics will vary from year to year.

861. Advanced Retail and Service Location Analysis. 5 hours.
Prerequisite: GGY 462/662 or permission of department.
Advanced retail and service location topics inclusive of modern central place theory, spatial interaction modeling, planning of retail and service systems, shopping destination choice analysis and spatial competition analysis.

862. Seminar in Economic Geography. 5 hours.
Prerequisite: 400/600-level human geography course, or equivalent, or permission of department.
Topics related to empirical and theoretical issues in contemporary economic geography.

863. Advanced Topics in the Geography of Transportation. 5 hours.
Prerequisite: GGY 463/663.

Topics and research problems in geography of transportation. Topics will vary from year to year.

872. Seminar in Advanced Demographic Analysis. 5 hours.
Prerequisite: GGY 403/603 and 472/672 or permission of department.

Problems, methods, and techniques in demographic analysis; construction and interpretation of life tables; population estimation and projection; cohort analysis, migration, and household demography. Emphasis is on application of these techniques to geographical analysis of population dynamics.

Physical Geography and Techniques

600. Advanced Geomorphology. 5 hours.
Prerequisite: GGY 121 or GLY 125 or permission of department.

Weathering and hydrological processes that create inselberg, karst, periglacial, and arid landforms, on Earth. Relationships to significant climate/environmental changes that occurred during the Quaternary. Aeolian, fluvial and periglacial landforms on Mars. Course includes a field trip to a karst area.

603. Introductory Spatial Analysis. 5 hours.
Prerequisite: GGY 350 and STA 200 or permission of department.

Introduction to techniques used to study the patterns of points, lines, areas, and surfaces depicted on maps. Use of parametric and non-parametric statistical techniques to describe and make inferences from information contained on maps.

606. Regional Synoptic Meteorology. 5 hours.
Prerequisite: GGY 120 or permission of department.

Investigation of the dynamics and general circulation of the atmosphere including analyses of surface-upper atmosphere links. Tropospheric waves, vorticity influences, jet streams, cyclogenesis, tropical depressions, hurricanes. Implications for long-range forecasting; geographic expressions of mean tropospheric wave patterns. As a synthesis, examination of regional climatic patterns and anomalies throughout the world. Term project required.

607. Fluvial Geomorphology. 5 hours.
Prerequisite: GGY 121-121L or GLY 125-125L or permission of department.

Geography

Landforming effects of surface-water movement with emphasis on surface water hydrology, streamflow mechanics, floods, sediment transport and storage, and landform evolution. Field trips included.

608. Global Environmental Change During the Quaternary. 5 hours.

Prerequisite: GGY 121 or GLY 125, and GGY 400/600 or equivalent or permission of department.

The geomorphic, isotopic and palynological evidence of Quaternary paleoclimates is examined and chronology problems discussed. The effects of past climatic changes upon present landscapes are evaluated. Attention is given to short-term fluctuations in temperature and precipitation that have occurred in historic times and to possible explanations for climatic change.

609. Bioclimatology. 5 hours.

Prerequisite: GGY 120 or 122 or permission of department.

In this course the interaction of climate with organisms, communities and ecosystems is discussed and then demonstrated in the field. The mechanisms of heat flow, radiation exchanges and water vapor flux; environmental variables in time and space are investigated, as well as the basic statistics needed to deal with climatic data. Case studies are examined which demonstrate climate's specific role in the functioning of ecosystems. Attention is directed to the use of bioclimatic methods to improve environmental impact assessment.

610. Conservation Ecology and Resource Management. 5 hours.

Prerequisite: GGY 120 and BIO 350 or GGY 122 or permission of department.

Ecological and economic analysis of human use of global and regional resources, emphasizing ecological requirements, sustainable use, and holistic decision-making. Particular topics include ecosystem dynamics, functional biodiversity, landscape management, socioeconomic traps, global change, and ecological restoration. Term project required.

613. (BOT) Plant Ecology and Biogeography. 5 hours.

Prerequisite: [(GGY 120-120L or 122-122L) and BIO 104-104L] or equivalent.

Patterns of plant distribution in the contemporary landscape are stressed, including treatment of species ranges, historical and environmental factors influencing the geography of plant assemblages, and soil-plant interactions. Consideration of disturbance, succession, and human influence on vegetation promotes awareness of landscape dynamics. Field trip and term paper required.

616. Cartographic Design and Reproduction. 5 hours. Three lectures and two lab periods.

Prerequisite: GGY 350 or permission of department.

Principles of design, readings from the literature, map reproduction methods and their effects on design. Practice in the production of thematic maps from the collection of data to their final form, use of advanced instruments.

617. Animal Geography. 5 hours.

Prerequisite: [GGY 120-120L or 122-122L] and [BIO 104-104L or equivalent].

Factors affecting animal distributions at scales from organisms to biomes. Influence of ecological factors on animal distribution, historical biogeography, animal assemblages of the earth's biomes, and human influences on animal populations.

618-618L. Introduction to Geographic Information Systems. 5 hours.

Prerequisite: Permission of department.

Principles and applications of Geographic Information Systems (GIS). Examines the nature and accuracy of spatially referenced data, as well as methods of data capture, storage, retrieval, visualization, modeling, and output using one or more GIS software packages.

619. Computer-Assisted Cartography and Graphics. 5 hours.

Prerequisite: GGY 350.

Introduction to the theory and application of computer technology in the preparation of thematic maps and other graphics. Emphasis is placed on the creation, analysis, and display of statistical surfaces. Students experiment with existing computer mapping programs and develop their own cartographic software in certain instances.

620-620L. The Use and Interpretation of Aerial Photographs. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: Four or more quarters of geography, geology, environmental design, forestry, agriculture or permission of department.

Principles and techniques of extracting descriptive and metric information of the environment from aerial photographs acquired in analog and digital forms. Applications emphasize planimetric mapping and interpretation of physical and cultural landscapes. Students are required to complete a term project making use of the techniques.

622. Advanced Photogrammetry. 5 hours.

Prerequisite: GGY 420/620.

Theories of analytical and digital (soft copy) photogrammetry as applied to topographic mapping. Topics include refinement of photographic measurements, coordinate transformations, stereoscopic parallax, collinearity equations, aerial triangulation, orthophotography, and digital image correlation.

623. Remote Sensing of Environment. 5 hours.

Prerequisite: PCS 128, GGY 420/620 or permission of department.

A consideration of the principles of remote sensing with emphasis on aerospace applications in the natural sciences. A review of fundamental properties of the electromagnetic spectrum followed by studies of remote sensing devices such as multispectral cameras, thermal infrared line scanners, and television and radar imaging systems. The course is oriented toward the particular interests of participating students.

624-624L. Geographic Analysis and Geographic Information Systems. 5 hours.

Four lectures and one 2-hour lab period.

Prerequisite: GGY 418/618-418L/618L and [GGY 305 or 403/603] and [CS 201-201L or equivalents].

Geographic analytical methods and implementation. Theory and concepts of spatial analysis. Description, reduction, and comparison of point, line, area, and volumetric geographic data sets are examined. Implementation and limitation of geographic information systems.

625. Field Methods in Physical Geography. 5 hours.

Prerequisite: 15 hours in geography, including GGY 350 or equivalent.

Methods in measurement, observation, recording and synthesis of field data in physical geography. Students conduct field research and present oral and written reports (with maps) of findings.

629. Special Problems in Area Analysis. 1-5 hours. (Max. 15 hours.)

Prerequisite: 15 hours in courses numbered above 300 in geography and permission of department.

676. (BOT) Plant Geography. 5 hours.

See BOT 676.

802. Advanced Spatial Analysis. 5 hours.

Prerequisite: GGY 403/603 or permission of department.

Application of multivariate statistical procedures to research problems in geography with emphasis on peculiarities of such applications. Topics in spatial autocorrelation, areal aggregation, modifiable areal unit problem, spatial interpolation, trend surfaces investigated using statistical and GIS software packages.

808. Seminar in Quaternary Paleoenvironments. 5 hours.

Prerequisite: GGY 408/608 or permission of department.

Methods used in reconstructing the hydrological and vegetation characteristics of former environments. Emphasis is on the analysis of cave, fluvial, and marine sediments. The changing Quaternary environments of North America, Europe, and Africa are discussed in detail. Specific topics covered will vary with the interests of the student group.

809. Topics in Applied Climatology. 5 hours.

Prerequisite: GGY 409/609 or permission of department.

Analysis at an advanced level of the interactions of the physical environment with plants, animals, ecologic processes and human systems. Research design and model building are emphasized, as well as methods of geographic modeling.

810. Seminar in Geocology. 5 hours.

Prerequisite: Permission of department.

Advanced problems and methods in geographical ecology, with specific topics ranging from landscape to global scale (e.g., landscape ecology, comparative or other, regional ecology, conservation problems, biosphere-atmosphere interactions, global ecology and global change).

812. Seminar in Climatology. 5 hours.

Prerequisite: GGY 401/601 or 406/606 or permission of department.

Advanced topics in physical climatology such as climatic change, microclimatology, urban climatology or synoptic climatology. Specific topics may vary.

813. Current Trends in Biogeography. 5 hours.

Prerequisite: GGY/BOT 413/613 or GGY/ZOO 417/617 or BOT/GGY 476/676.

Advanced topics and research trends in plant and animal biogeography. Specific topics may vary.

816. Seminar in Geomorphology. 5 hours.

Prerequisite: GGY 400/600 or 404/604.

Advanced problems in geomorphology and physiography. Topics and areas under investigation may vary.

818. Directed Problems in Physical Geography. 3-5 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Advanced problems in physical geography. Topics may vary.

820. Advanced Topics in the Use and Interpretation of Aerial Photographs. 5 hours.

Prerequisite: GGY 420/620.

Special problems encountered in the extraction of quantitative and qualitative information from aerial photographs are examined in depth with emphasis on the appropriateness of the various approaches and the ways and means of improving accuracy of interpretation. Applications involving physical, human and regional geography will be discussed.

821. Seminar in Cartography. 5 hours.

Prerequisite: GGY 416/616 or 419/619.

Special problems in the application of cartography. Emphasis on problems involving map design and production, computer graphics, and map perception.

823. Seminar in Geographic Information Systems. 5 hours. (Max. 15 hours.)

Prerequisite: GGY 418/618-418L/618L and one other advanced Geographic Techniques course. Problems in geographic information systems including methods and techniques and the application to specific topical areas.

824. Remote Sensing with GIS Applications. 5 hours. Field trips.

Prerequisite: [GGY 418/618-418L/618L and 423/623] or permission of department.

Mapping datums, coordinate systems, and accuracy requirements for geographic information systems (GIS). Global positioning system (GPS), softcopy photogrammetry, and digital image processing techniques for GIS database construction. GIS modeling for environmental studies. Includes the use of various software packages.

825. Problems in Remote Sensing of Environment I. 3 hours.

Prerequisite: GGY 420/620, 422/622, or 423/623. Advanced problems in photointerpretation, photogrammetry and remote sensing. Topics and areas of investigation may vary. Emphasis on research and applications.

826. Problems in Remote Sensing of Environment II. 3 hours.

Prerequisite: GGY 825. Advanced problems in photointerpretation, photogrammetry and remote sensing. Topics and areas of investigation may vary. Emphasis on research and applications.

828. Directed Problems in Geographic Techniques. 3-5 hours. (Max. 15 hours.)

Prerequisite: Permission of department. Topics in mapping sciences, such as cartography, air-photo interpretation, remote sensing, photogrammetry, and geographic information systems.

829. Directed Problems in Quantitative Geographic Methods. 3-5 hours.

Prerequisite: Permission of department. Topics in statistical analysis of geographic data and geographic modeling.

The department offers instruction and opportunities for research in archaeological geology, economic geology, geochemistry, clay mineralogy, geophysics, hydrogeology, marine geology, mineralogy, paleontology, micropaleontology, petrology, stratigraphy-sedimentology, and other fields. Graduate programs leading to the MS and PhD are individually arranged to fit each student and his/her background.

Facilities for graduate training and research include analytical and experimental laboratories containing X-ray diffraction equipment, mass spectrometers, FTIR and an electron microprobe. Special facilities include a stable isotope laboratory, a potassium-argon laboratory, an experimental petrology laboratory, equipment for seismological studies, a cathodeluminescope, a carbon-14 and tritium dating laboratory, a neutron activation analysis laboratory, paleontological and sedimentological laboratories, and laboratories for sample preparation, optical determination, 12 station computer lab and photomicroscopy. The university's Marine Institute on Sapelo Island and the Skidaway Institute of Oceanography at Savannah provide facilities for research in marine geology. Companion facilities include the university computer center, electron microscopy laboratory, field vehicles, instrument shops, and rock, mineral, and fossil collections.

602. Geohydrology Seminar. 1 hour. (Max. 6 hours.)

Prerequisite: GLY 422/622 or equivalent. Current and classical studies in geohydrology.

603. Invertebrate Paleontology. 5 hours.

Three lectures and two lab periods. Prerequisite: GLY 126 or BIO 102. Principles of invertebrate paleontology. Study of fossil specimens, emphasizing relationships between living and extinct marine organisms. Classification and history of major invertebrate phyla.

604. Geology Seminar. 1 hour. (Max. 6 hours.)

Reviews and discussions of classical studies; lectures on current research, new developments in the field. Special lectures by visiting scientists.

605. Sedimentation and Stratigraphy. 5 hours.

Three lectures and two lab periods. Prerequisite: GLY 126, GLY 323 recommended.

Geology (GLY)

Samuel E. Swanson, *Head*
David B. Wenner, *Graduate Coordinator*,
542-2416
(GGS Building)

The origin and distribution of sedimentary rocks. Environmental conditions involved in the transportation and deposition of sediments. Vertical sequences and lateral correlations in layered rocks. Typical stratigraphic associations.

609. Marine Geology. 5 hours.

Prerequisite: GLY 125 and 126.

Study of the geologic aspects of ocean basins, including morphology, sedimentation processes, and mode of origin.

611. Principles of Geochemistry. 5 hours.

Prerequisite: CHM 122, GLY 323.

Composition of the earth. Distribution of elements in minerals and rocks. Principles governing the migration and concentration of elements. Introduction to nuclear geology and geochemical prospecting.

614. X-Ray Crystallography. 5 hours. Three lectures and two lab periods.

Prerequisite: MAT 253.

Symmetry elements, crystal projections, point groups, space groups, crystal systems, crystal notation, optical goniometry. Determination of cell dimensions and space group; X-ray powder methods, single crystal X-ray methods.

622. Hydrogeology. 5 hours.

Prerequisite: GLY 125 and 126, or equivalent.

The hydrologic cycle and review of the quantitative treatment of its elements. Quantitative methods for ground-water flow, open-channel flow, sediment transport, channel characteristics, and drainage networks. Introduction to water chemistry and quality. Water as a resource. (Surface hydrography is covered in detail in FRS 411/611.)

625. Field Methods in Geology. 1 hour.

Prerequisite: GLY 323.

Theory and practice of field measurement, large scale planimetric and topographic mapping, and grid surveying. Graphic presentation of field data.

627. Geology Field School. 12 hours. Five field weeks in June and early July.

Prerequisite: GLY 321, 323, 332; GLY 405/605 recommended.

Introduction to geologic mapping techniques; training in the use of aerial photographs, topographic maps, and stereographic projections; basic methods of description and measurement of stratigraphic section. Regional geologic settings stressed through reports which accompany field maps.

628. Environmental Geology Field School. 6 hours.

Prerequisite: GLY 422/622.

Corequisite: GLY 427/627 (6 credit hours) or equivalent.

Field environmental geological problems with emphasis on hydrologic testing methods, aquifer characteristics of rock units, subsurface contamination and remediation, and mining methods and reclamation.

630. Clay Mineralogy. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: GLY 405/605, CHM 121; GLY 321. Structure and properties of clay minerals. Effects of environmental factors on their origin and uses. Identification of clay minerals by optical and X-ray methods.

631. Metallic Ore Deposits. 5 hours. Five lectures plus field trips.

Prerequisite: GLY 321 and 332.

Classification and origin of metallic ore deposits; relationships between mineral deposits and host rocks; ore controls. Discussion of the major deposits of base metals, precious metals and ferrous metals.

634A. (ANT) Archaeometry. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: GLY/ANT 470/670 or permission of department.

Methods of archaeometric analysis including chronometric and instrumental techniques. Absolute age dating and characterization of archaeological materials by physico-chemical analysis.

637. Geostatistics. 5 hours. Four lectures and one lab period.

Prerequisite: STA 200 or 421/621.

Statistics applied to geology. Distributions, sampling, inference, analysis of variance, distributions and transformations, geological sampling, variability in geological data.

641ABCDEFJK. Introduction to Research. 2-5 hours each. (Max. 15 hours.)

An introduction to the literature of geology, research procedures and instrumental techniques.

- a. Mineralogy
- b. Geochemistry
- c. Geophysics
- d. Hydrogeology
- e. Tectonics
- f. Petrology
- j. Sedimentation/Stratigraphy
- k. Paleontology

644. Principles of Chemical Mineralogy. 5 hours.

Prerequisite: CHM 122; MAT 254; PCS 128.

The study and application of thermochemical principles and methods to problems in mineralogy, petrology, and geochemistry.

645. Topics in Geochemistry. 1 hour. (Max. 5 hours.)

Current issues in high temperature, low temperature, inorganic and organic geochemistry.

Geology

651. Micropaleontology. 5 hours.

Prerequisite: GLY 126 or BIO 102.

Morphology and systematics of principal groups of animal microfossils. Stratigraphic, paleoecologic and phylogenetic relationships; with particular emphasis on Foraminifera.

652. Introduction to Paleocology. 5 hours.

Four lectures and one lab period.

Prerequisite: GLY 403/603 or equivalent.

Study of factors governing the abundance and distribution of ancient organisms, with emphasis on marine invertebrates. Comparison with ecology of extant organisms. Survey of ecologic principles, adaptations of organisms, and environmental parameters. Preservability and taphonomy of organisms. Paleocology as a tool in sedimentary geology.

655. Introduction to Trace Fossils. 5 hours.

Prerequisite: GLY 403/603, 405/605.

Origin, classification, and environmental significance of trace fossils. Organism-substrate relationships; physical and biogenic sedimentary structures. Organisms as geologic agents. Emphasis on marine invertebrate traces and tracemakers.

660. Solid Earth Geophysics. 5 hours.

Prerequisite: GLY 323, 332, PCS 128.

The student will use the principles of geophysics in evaluating the dynamics and bulk properties of the earth. Topics will include earthquake seismology, geodesy, geomagnetism, the thermal history of the earth, earth resistivity methods, the composition and state of the earth's interior, and the new Global Tectonics hypothesis.

662. Exploration Geophysics. 5 hours. Three lectures and two lab periods.

Prerequisite: GLY 323, 332, PCS 128.

Geophysical techniques used to determine the presence and extent of deposits of minerals and the subsurface structure of a selected locality from field measurements.

666. Field School in Shallow Geophysics. 6 hours.

Six lectures and six 7-hour lab periods.

Prerequisite: [GLY 115-115L] or [125-125L] or [course in archaeology].

Theory and use of techniques for the geophysical prospection of near surface geology, geohydrology and geomorphology. Techniques include: Electro-magnetic; radar; sonar; and magnetism.

667. Instrumental Analysis in the Geosciences.

3-5 hours. Two lectures and one two-hour lab period.

Prerequisite: GLY 321 or equivalent.

Operating principles of commonly used instruments in the geosciences, with an emphasis on the practical operation and use of instruments for chemical analysis of rocks, minerals, and water samples.

669. Applied Environmental Geology. 5 hours.

Three lectures; field trips will substitute for labs.

Prerequisite: [GLY 125-125L or equivalent] and [CHM 121 or PCS 127-127L].

Field-based studies on environmental geological problems including sanitary landfills, barrier island development, underground storage tank pollution and remediation, mine land pollution and reclamation, and wetland development. Field trip participation is required.

670. (ANT) Archaeological Geology. 5 hours.

Three hours lecture and two 2-hour lab periods.

Prerequisite: GLY 115-115L or equivalent.

Archaeological problems amenable to solution by geological methodology. Paleogeography and paleoenvironment of archaeological sites. Analytical studies of artifacts and remains.

700M. Master's Research. 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of department.

Research while enrolled for a master's degree under the direction of faculty members.

730M. Master's Thesis. 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of department.

801ABCDEFJK. Advanced Topics. 1-5 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Intensive study under the direction of staff members on approved topics.

- a. Mineralogy
- b. Geochemistry
- c. Geophysics
- d. Hydrogeology
- e. Tectonics
- f. Petrology
- j. Sedimentation/Stratigraphy
- k. Paleontology

805. Advanced Stratigraphy. 3 hours.

Prerequisite: GLY 403/603 and 405/605.

Major concepts in lithostratigraphy and biostratigraphy. Paleozoic, Mesozoic and Cenozoic stratigraphic sequences in North America.

809. Paleoceanography. 3 hours.

Prerequisite: GLY 409/609, 405/605.

History of temporal and environmental changes in physical, chemical, and biological components of the ocean as recorded in deep-sea sediments and oceanic crust. Emphasis is placed on the role of paleoclimates in the evolution of the ocean.

815. Sedimentary Geochemistry. 5 hours.

Prerequisite: GLY 411/611.

Application of elemental and isotopic geochemistry to sedimentary geology, from microscopic to global scales. Major to trace elemental and isotopic geochemistry of sedimentary rocks, seawater, and sediment pore waters; chemical approaches to sediment diagenesis; and global models of sedimentary fluxes and changing marine chemistry as suggested by the sedimentary record.

816. Advanced Igneous Petrology. 5 hours.

Three lectures and two lab periods.

Prerequisite: GLY 444/644 and 800.

Mineralogy and geochemical characteristics of igneous rocks; phase relationships, thermodynamic parameters; element distribution and fractionation; geothermometry, geobarometry, physical properties of silicate melts. Use of mineralogical and geochemical data in analyzing the origins of a volcanic and plutonic rock suite.

818. Sandstone Petrology. 5 hours. Four lectures and one 3-hour lab period.

Prerequisite: [GLY 405/605 and 408/608] or GLY 323.

Petrology of sandstones: classification, mineralogy, geochemistry, provenance, diagenesis, porosity, and hydrogeology of sandstones, and laboratory examination of sandstone mineralogies and diagenetic fabrics.

820. Advanced Sedimentary Petrology. 5 hours.

Three lectures and two 2-hour lab periods.

Prerequisite: GLY 800 and 405/605.

Petrology of sedimentary rocks and interpretation of provenance, deposition, and diagenesis. Classification, mineralogy, geochemistry, depositional textures, diagenetic fabrics, and porosity of sedimentary rocks. Petrographic (hand specimen, thin section, and SEM) examination of sandstones, shales, evaporites, carbonate rocks, and other sedimentary rocks; interpretation of suites of various ages and tectonic settings.

822. Advanced Metamorphic Petrology. 5 hours.

Three lectures and two lab periods.

Prerequisite: GLY 444/644 and 800.

Mineral interactions in metamorphic rocks as functions of pressure, temperature and chemical environment; geometrical and thermodynamic restrictions on the conditions of metamorphic reactions; development of a petrogenetic grid for regional metamorphism; laboratory exercises in description of metamorphic mineralogy, textures, and interpretation of same; preparation of integrated petrologic reports.

825. Plate Tectonics. 3-5 hours.

Prerequisite: GLY 323, 332, 405/605, and at least three other senior division or graduate geology courses.

Orogenic belts and world rift system; physical properties, chemical composition, and mineralogy of the earth's mantle; structure and petrology of the earth's crust; geosynclines and the orogenic cycle; continental drift; paleomagnetism; polar wandering; sea floor spreading.

845. Stable Isotope Geochemistry. 5 hours.

Prerequisite: GLY 411/611.

Theory of isotope fractionation processes and laboratory procedures for extraction and mass spectrometry of elements H, O, C, N. S. Applications in geology, hydrology, ecology, and archaeology.

846. Radiogenic Isotope Geochemistry. 5 hours.

Prerequisite: GLY 411/611.

The mathematical description of radioactive decay and the analytical techniques used to measure isotope ratios. Application of radiogenic isotopes in age-dating and as geochemical tracers in natural processes.

860. Advanced Geophysics. 3 hours.

Prerequisite: GLY 460/660, 462/662.

Advanced aspects of solid earth geophysics to include topics in seismology, gravity, and magnetism. The course will include a trip to the ATLW-WSSN seismic station in Atlanta.

900D. Doctoral Research. 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of department.

Research while enrolled for a doctoral degree under the direction of faculty members.

930D. Doctoral Dissertation. 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of department.

Germanic and Slavic Languages

Ralf R. Nicolai, *Head*

Marjanne E. Goozé, *Graduate Coordinator,*
542-2450
(Meigs Hall)

The department offers work in all the major fields of Germanistic studies. Required for the master's degree is a reading knowledge of one modern foreign language besides German. Information regarding other requirements for the MA and MEd degrees in German may be obtained from the coordinator of graduate studies in German. A written

Germanic and Slavic Languages

comprehensive examination is also required. Required of candidates for all the education degrees, and recommended for all candidates, is experience in constructing language laboratory exercises, recording them, and evaluating their effect on beginning students.

German (GER)

622. Advanced Grammar and Composition. 5 hours.

Vocabulary building and review of grammar. Emphasis on common errors of English speakers and on distinctions in meaning.

625. Survey of German Literature. 5 hours.

German literature from the Old High German Period to the present. Texts from the older period will be read in New High German translation.

626. Early Modern German Literature. 5 hours. Prerequisite: Graduate standing.

Masterpieces of German literature between 1500 and 1700 in the context of Humanism, Reformation, Counter-Reformation and the vernacular literary reform, including Neo-Latin literature by German writers; the effect of social, political, religious, and intellectual currents on the German Republic of Letters is considered.

630. German Drama. 5 hours.

Reading and interpretation of texts in their historical and literary-historical context.

631. German Drama II. 5 hours.

Interpretation of dramas representative of the significant literary movements from Naturalism until today.

632. The Age of Goethe (Sturm und Drang to Schiller's Death). 5 hours.

Literature of the Sturm und Drang Group, including Goethe, Schiller, and Hölderlin.

633. Age of Goethe (1805-1832). 5 hours.

The older Goethe, from Schiller's death in 1805 to 1832. Emphasis on Goethe's mature works, *Wahlverwandschaften*, *Westöstlicher Divan*, and *Wilhelm Meisters Wanderjahre*.

635. German Novelle of the 19th and 20th Centuries. 5 hours.

Prescriptive and descriptive analyses of this German literary genre. Interpretation of short, lively, readable texts by representative authors.

637. Modern German Literature. 5 hours.

Drama, poetry, and shorter prose of major German authors from early 20th century (Arthur Schnitzler) to the late postwar period (Peter Weiss).

638. Contrastive Grammar: German-English. 5 hours.

Identification and examination of the salient structural similarities and differences between German and English.

639. German Poetry. 5 hours.

German poetry from the Middle Ages to the present.

641. German Prose. 5 hours.

Reading and interpretation of selected important novels and *Novellen*.

646. (LIN) Linguistic Structure of German. 5 hours.

Structure of German with explanation of relevant linguistic terms. Emphasis on phonetics, phonology, and intonation.

648. German Realism and Naturalism. 5 hours.

Representative works of the major realists and naturalists of the 19th-century including authors such as Hebbel, Keller, Storm, Meyer, Fontane and Hauptmann.

660. (LIN) History of the German Language. 5 hours.

Study of the origins of modern standard German from the Indo-European parent language, through proto-Germanic, Old and Middle High German, and the early modern period.

700M. Master's Research. 1-15 hours. (Max. 30 hours.)

Prerequisite: Permission of department.

Research while enrolled for a master's degree under the direction of faculty members.

730M. Master's Thesis. 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of department.

750. Problems and Methods of Teaching College German. 5 hours.

Methods for teaching foreign language and development of language skills in German. For teaching assistants in German and graduate students in German and Language Education.

832. Gothic. 5 hours.

Morphology, phonology, and history of the Gothic language based on its extant texts. Emphasis on the development of earlier stages of the language and on its later language forms.

840. Middle High German. 5 hours.

Phonology and grammar of selected texts from the Middle High German period, including major authors (Wolfram von Eschenbach, Gottfried von Strasburg, Hartmann von Aue, Walther von der Vogelweide) and works (Das Nibelungenlied).

841. Proseminar. 5 hours.

Introduction to bibliography and methodology of research in German literature and linguistics.

850G. Seminar. 5 hours.

Intensive investigation of a subject or the work of a particular author.

851, 852. Seminar. 5 hours each.

Intensive investigation of a subject or the work of a particular author.

Russian (RUS)

600. Business Russian. 5 hours.

Introduction to the nomenclature and protocol of east-west trade relations. Acquisition of Russian business terminology.

601. Introduction to 19th Century Russian Literature. 5 hours.

A study of representative works in the original language. The course is conducted in Russian.

Gerontology (GNT)

Leonard W. Poon, *Director & Graduate Coordinator, 542-3954 (Candler Hall)*

Please see Index for information on the certification program in gerontology. The courses having a gerontology prefix are listed below:

600. Seminar in Aging. 5 hours

Prerequisite: Graduate standing and admission to the gerontology program.

An introduction to basic concepts of gerontology in an interdisciplinary setting to provide the student with a theoretical framework upon which to base further study and research in the field of aging. Required of all candidates for the Certificate in Gerontology.

639. Service-Learning with the Elderly. 2-5 hours. (Max. 5 hours.)

Prerequisite: GNT 400/600; students who have not completed GNT 400/600 will be required to complete a non-credit seminar in gerontology offered by the Gerontology Center.

Supervised field experience designed to assist in reinforcing knowledge, theories and principles gained through courses in or related to the field of gerontology.

800. Advanced Topics in Gerontological Research and Theory. 5 hours. (Max. 10 hours.)

Prerequisite: Permission of department.

Examination of interdisciplinary topics and new developments in gerontological research and theory, focused on a specific theme.

801. Advanced Topics in Gerontology Practice. 5 hours. (Max. 10 hours.)

Prerequisite: Permission of department.

Examination of interdisciplinary topics on new developments in the practice of gerontology.

Global Policy Studies (GPS)

William O. Chittick, *Graduate Coordinator, 542-6633 (Baldwin Hall)*

Please see Index for information on the certificate program in global policy studies. The courses having a global policy studies prefix are listed below:

600. Global Policy Analysis. 5 hours.

Prerequisite: Ten hours of graduate course work. This course offers interdisciplinary approaches to global policy. It covers the planning, implementation, and evaluation of policies designed to deal with global problems, especially development. The course is required for all candidates for the graduate Certificate in Global Policy Studies.

750. Global Policy Internship. 5-10 hours. (Max. 10 hours.)

Prerequisite: Ten hours of POL 620, 630A and 651 or equivalent.

This course is designed as the academic portion of an internship providing field experience in global policy studies. It does not apply toward a program of study but meets the requirement for an internship for the Certificate in Global Policy Studies. A paper is required as part of this internship.

Graduate School (GSC)

Gordhan L. Patel, *Dean, 542-4797 (Boyd Graduate Studies Research Center)*

Courses having a Graduate School prefix are listed below:

777. Graduate Internship. 1-5 hours. (Max. 60 hours.)

Prerequisite: Permission of school.

This course is designed to provide graduate teaching assistants with knowledge of pedagogical approaches and available support systems. Special sections are reserved for international students, with focus on use of language, pedagogy, and cultural aspects of teaching in this country.

927. Graduate Study Completion. 5 hours. (Max. 15 hours.)

Prerequisite: Permission of school.

This course is designed for graduate students completing degree requirements who will be using staff time or University facilities and for whom no regular course is appropriate.

History (HIS)

David D. Roberts, *Head*
William W. Stueck, *Graduate Coordinator*,
542-2053
(Joe Brown Hall)

The history department offers work leading to the MA and PhD degrees. The MA program in history requires 40 quarter hours of course work, including HIS 693G and two other 800-level courses. Additional requirements are: two colloquia in the major field (American or European) and one colloquium in the minor field (American or European), reading competence in a foreign language, a thesis, and an oral examination. The PhD student in history must demonstrate through both written and oral comprehensive examinations a thorough knowledge of four fields of history or three fields of history and a field in another discipline. In addition, PhD students must complete HIS 793, two colloquia in the major field (American or European), one colloquium in the minor field (American or European), and a minimum of 10 hours of 800-level seminar courses. However, if HIS 693G has not been completed, it may be taken with the permission of the major professor and the endorsement of the graduate coordinator and be counted in fulfillment of part of the additional seminar requirement. A reading competence in two foreign languages is required of all doctoral candidates, but with the permission of the major professor

and the endorsement of the graduate coordinator, two courses in quantitative methodology may be substituted for one foreign language. A dissertation may be presented in United States, European, or other selected fields of history.

The graduate program stresses research and writing under faculty guidance. In addition, students possessing the MA degree may receive practical experience in teaching by holding teaching assistantships. The department awards a number of teaching assistantships and departmental non-teaching assistantships each year. Application for these should be made directly to the department's graduate coordinator. February 15 is the deadline for applications for the MA and PhD programs.

604. History of Science in America. 5 hours.

Prerequisite: HIS 320P or two courses in science. Scientific thought and research in the United States from the colonial period to the present, with particular attention to the impact of American society on developing a distinctively American scientific tradition.

610. (ESS) Teaching United States History. 5 hours.

See ESS 610.

612T. The Ante-Bellum South. 5 hours.

Begins with the late colonial period, when settlers were pushing across the southern Appalachians, and continues to the secession of the South. Southern life and civilization will be studied.

613F. The Civil War Period of American History. 5 hours.

Civilian activities of the people; problems of the Northern and Southern governments. Emphasis on the Confederacy. Only major military campaigns will be considered.

613P. The Era of Reconstruction, 1865-1877. 5 hours.

The reconstruction of the South along all lines, as well as the remaking of the North. Beginnings will be found during the Civil War; the process will be continued to 1877.

614C. The South Since Reconstruction. 5 hours.

The South since the Reconstruction period with emphasis upon social, economic, and political developments of the region.

614F. The Origins of Modern America, 1877-1917. 5 hours.

An examination of the expansion, industrialization, and urbanization of the United States, of the emerging political, economic and social problems, and of the political responses to the development of the era.

614P. Recent America, 1917 to 1945. 5 hours.

The history of political, economic, social and cultural development during the present century.

614T. Modern America, 1945-Present. 5 hours.

An examination of social, economic, diplomatic and political trends in the United States during the post-World War II era.

615E. Constitutional History of the United States. 5 hours.

A study of how actual political and social conditions in American history have produced fundamental constitutional principles and practices.

615F. Modern American Legal History. 5 hours.

A survey of American legal history from the early 19th Century to the present, which emphasizes the evolution of legal thought and institutions, changes in the nature of the legal profession and legal education and the role of law and the courts in American political, economic, and social development.

615W. Women in American History and Culture. 5 hours.

An introduction to the social science background of the American feminist movement. Emphasis will be placed on women in nineteenth century social movements, in the drive for suffrage and liberation and in contemporary feminism.

616M. Problems in American Foreign Policy, 1776-Present. 5 hours.

A study of selected problems with emphasis on readings.

617M. History of Georgia. 5 hours.

Georgia from its first occupation by the Spaniards to the present. A comprehensive discussion of all aspects of Georgia's development. (No duplicate credit for HIS 417N/617N and 417P/617P.)

618P. Modern Black America. 5 hours.

The 20th Century struggle for civil rights, black identity and self-determination. The response to industrialism and urbanization. The role of black institutions and political organizations. The philosophy and tactics of accommodation, integration, and separatism.

631F. The Caribbean Area. 5 hours.

Conquest and settlement of the islands and Caribbean periphery by the Spanish, the intrusions by the French, Dutch, and English, and the more recent developments of the 19th and 20th Centuries.

633F. The United States and Latin America. 5 hours.

A history of the political, economic, and cultural relations between the United States and Latin America from 1776 to the present. Topics include Spanish-American revolutions, Monroe doctrine, United States expansionism, Pan American system, United States intervention, Good Neighbor policy, Latin America in the Cold War, and United States and Latin American revolutions.

633P. Latin America: A Socioeconomic History Since 1930. 5 hours.

Latin American social and economic development from the onset of the Depression until the 1990s. The role of the state in economic development; the impact of modernization on traditional social systems; persistence of social inequity amidst development; and the liberal and revolutionary responses to social needs.

637M. Ancient Near East. 5 hours.

A survey of the ancient peoples and cultures of the Near East from earliest historical times through the Persian empire.

638M. Greek History. 5 hours.

A study of Greek history to the time of Alexander the Great.

639F. Roman Republic. 5 hours.

A study of Roman history to the end of the republic.

639P. Roman Empire. 5 hours.

History of the Roman Empire from 27 B.C. to A.D. 337 with special emphasis on the government of Augustus, reasons for its decline, and the final attempt at unification of the empire under Constantine.

645F. Norman and Early Angevin England, 1066-1307. 5 hours.

A detailed study of English political, constitutional, legal, and feudal history from the Norman conquest to the death of Edward I.

645G. England in the Age of Chaucer, 1307-1485. 5 hours.

An investigation of political, social, and intellectual developments from the beginning of the reign of Edward II through that of Richard III, the epoch of Shakespeare's great historical dramas and of Chaucer.

645M. Medieval Intellectual Survey. 5 hours.

Survey of medieval intellectual history. An examination of European intellectual development from Constantine to Dante.

History

645P. Medieval France, 987-1498. 5 hours.

An intensive study of France under the Capetian and early Valois kings. Emphasis will be placed upon political, feudal, and social history, unified by the story of the growth of the national state focussed upon the king.

650M. Intellectual History of the Renaissance. 5 hours.

Survey of Renaissance intellectual history. An examination of European intellectual history from Dante to Erasmus.

650P. Intellectual History of Early Modern Europe. 5 hours.

Intellectual history of early modern Europe. An examination of intellectual developments in 16th and 17th Century Europe.

651M. The Age of Absolutism. 5 hours.

Europe from 1648 to 1789, with particular emphasis upon France. The political history of the age will be supplemented by examination of economic and social institutions and the Enlightenment.

651W. European Intellectual History, 1914 to present.

European thought from 1914 to the present, with emphasis on the relationship between political developments and dominant ideas and beliefs.

653E. 19th Century Europe. 5 hours.

A history of Europe from 1814 to 1914. The main political, international, social, economic, cultural, and intellectual movements will be stressed.

653F. 20th Century Europe. 5 hours.

The history of Europe from 1914 to the present. The main political, social, economic, cultural, and intellectual movements will be stressed.

657A. Military History to 1815. 5 hours.

A history of warfare in ancient, medieval and early modern times. Its techniques, theory and role in the evolution of western society.

657B. Recent Military History. 5 hours.

The history of warfare and the development of weapons, techniques, and military thought in the 19th and 20th Centuries.

657E. The Age of World War I. 5 hours.

The origins of modern world politics, culminating the World War I and the peace settlement of 1918-24. The interaction between world politics and the 20th Century ideologies—welfare-state, democracy, fascism, and communism—and the intellectual and technological roots of these ideologies.

657F. The Age of World War II. 5 hours.

A continuation of History 657E. The interwar period, the war, and its consequences with emphasis on Europe.

657M. Germany under the Weimar Republic to the Present. 5 hours.

A survey of political and social developments since 1918. Emphasis will be given to the breakdown of the Weimar Republic and the rise and structure of Nazism.

657N. Nazism and Fascism in Europe, 1919-1945. 5 hours.

A survey of the two totalitarian movements, Italian Fascism and German National Socialism (Nazism), emphasizing the intellectual origins of antidemocratic impulses both before and after 1919, the unique social and political factors present in each nation, the personalities of Hitler and Mussolini, and the growth of the totalitarian one-party state.

657T. The Age of the Cold War. 5 hours.

A continuation of History 657F. The political, ideological, and military conflicts and the search for new world order in the aftermath of World War II.

664M. The Stuart Period of English History, 1603-1714. 5 hours.

England during the evolution of parliamentary supremacy; problems leading to the civil war, interregnum, restoration, and revolution settlement.

665F. Britain in the Age of Revolution, 1714-1868. 5 hours.

This course will discuss British foreign and domestic policies under the stress of the American War of Independence, the French Revolution, and the Industrial Revolution. Special attention will be given to the establishment of political stability and the growth of industrial society.

665G. Modern British History, 1868-Present. 5 hours.

A survey of the political, economic, social and diplomatic developments in Great Britain during the period 1868-present.

671F. The Russian Revolution and the Rise of Stalin, 1881-1927. 5 hours.

The final phase of the Russian revolutionary movement and the collapse of the empire under the impact of the wars of 1904-05 and 1914-17. The 1917 Revolutions, Bolshevik victory, and the period of the New Economic Policy.

671P. Soviet Union Since 1927. 5 hours.

Soviet Union from Stalin Revolution to present. Stresses domestic developments and rise of USSR to world power. Post-Stalin internal changes and polycentrism in Communist world.

672E. Eastern Europe in the Modern Age, 1800-present. 5 hours.

Efforts of East European nations to gain and maintain independence. Emphasis on Eastern Europe during the Cold War, the 1989 national

liberation, subsequent political-economic-social problems, and importance of the area in international relations.

678A. History of China I: The Traditional Order from Prehistory to the Sung Dynasty. 5 hours. An examination of the political, economic, social, and cultural life of ancient China from its earliest beginnings to the Sung Dynasty. Emphasis is on traditional Confucianism, Taoism, and Buddhism, the primary molders of Chinese culture.

678B. History of China II: The Transitional State from the Sung Dynasty to the 1911 Revolution. 5 hours.

An examination of significant changes in Chinese culture, as well as an analysis of those forces within and without China that contributed to or inhibited modernization.

678C. History of China III: The Modern Transformation from the 1911 Revolution to the Present. 5 hours.

A study of China in the Twentieth Century with the focus on the Republic of China, its disintegration, the rise of Communism, and the changes in the nature of the People's Republic of China.

679A. Japan and the Samurai. 5 hours.

Evolution of Japan's warrior class from earliest times to its abolition in the late 1800's, the changing political and social roles of the samurai, and the development of warfare and martial art.

679B. Women in Japanese History. 5 hours.

Prerequisite: HIS 378 or 379 or 479A/679A or permission of department. Changing political, social and economic positions of women in Japan from ancient times to the present.

681. The History of Eastern Africa: Earliest Times to 1800. 5 hours.

Economic, political, and cultural history of eastern Africa to 1800. Such topics as the origins of agropastoralism, and rise and growth of city-states and kingdoms, the Indian Ocean trading network, and slavery will be covered.

682. History of East Africa: 1800-1990s. 5 hours.

Economic and cultural history of east Africa from 1800-1990s. Regional systems of food production, trade, and ethnicity, missionary and merchant activity, colonial penetration, African nationalism and independence.

690A. Colloquium in United States History: 17th and 18th Centuries. 5 hours.

A colloquium in which graduate students will read widely in United States history of the 17th and 18th Centuries.

690B. Colloquium in United States History: 19th Century. 5 hours.

A colloquium in which graduate students will read widely in United States history of the 19th Century.

690C. Colloquium in United States History: 20th Century. 5 hours.

A colloquium in which graduate students will read widely in United States history of the 20th Century.

691A. Colloquium in European History: 1350-1750. 5 hours.

A colloquium in which graduate students will read widely in European history from 1350 to 1750.

691B. Colloquium in European History: 1750-1870. 5 hours.

A colloquium in which graduate students will read widely in European history from 1750 to 1870.

691C. Colloquium in European History: 1870 to present. 5 hours.

A colloquium in which graduate students will read widely in European history from 1870 to the present.

692. Colloquium in Comparative History. 5 hours. (Max. 10 hours.)

Prerequisite: Permission of department.

Colloquium in which graduate students will read widely in major topics in comparative history.

693G. Theory and Practice of History. 5 hours.

Required of graduate students majoring in history. This course will include methods of research and various aids, as well as the generally accepted usages in historical composition.

693M. Philosophy of History. 5 hours.

Introduction to Western historical thought and discourse from Herodotus to the present. Using the works of historians and philosophers of history, the course will examine the discipline of history as well as the relationship of history to other disciplines.

700M. Master's Research. 1-15 hours. (Max. 20 hours.)

Prerequisite: Permission of department.

Research while enrolled for a master's degree under the direction of faculty members.

730M. Master's Thesis. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

793. Teaching History in Colleges and Universities. 5 hours.

A study of the variety of methods appropriate to instruction in college level survey history courses and practices and utilization of audio visual aids and development of classroom tests.

History • Horticulture

800A. Seminar in History. 5 hours. (Max. 30 hours.)

Prerequisite: HIS 693G or permission of department.

A two-quarter course for second-year MA students and doctoral students in which they will strengthen their skills in historical research and writing.

812T. Seminar in Middle Period U.S. History. 5-15 hours. (Max. 15 hours.)

A research seminar in United States history of the period 1800-1877.

814A. Seminar in Recent U.S. History. 5-15 hours. (Max. 15 hours.)

Topics on social, intellectual, cultural, and political developments in U.S. history since 1900.

815M. Seminar in U.S. Social and Intellectual History. 5-15 hours. (Max. 15 hours.)

A research seminar devoted to an examination of representative social and intellectual developments of the American colonies and the United States.

815W. Historiography. 5-15 hours. (Max. 15 hours.)

A seminar on historical writings, both American and European (depending upon the instructor), with varying topics including the philosophy of history, books, source materials, and historical aids.

852P. Seminar in Early Modern Europe, 1648-1815. 5-15 hours. (Max. 15 hours.)

Selected topics in early modern European history, 1648-1815.

853E. Seminar in 19th Century Europe. 5 hours. (Max. 15 hours.)

Prerequisite: Three graduate history courses or permission of department.

Selected research topics in 19th Century European diplomatic, political, social, economic, and intellectual history. Topics vary as offered.

858E. Seminar in 20th Century Europe. 5-15 hours. (Max. 15 hours.)

Readings and research in 20th Century European history. Topics will vary according to the interests of the student and instructor. Past topics have included European diplomacy, the Age of World War I, the Age of World War II, and the Cold War.

900D. Doctoral Research. 1-15 hours. (Max. 20 hours.)

Prerequisite: Permission of department.

Research while enrolled for a doctoral degree under the direction of faculty members.

901. Directed Study in History. 1-17 hours. (Max. 20 hours.)

Prerequisite: HIS 815W, 693G and completion of all required course work for PhD in history and permission of department.

Independent study for PhD students who have completed all required courses and are preparing for written and oral preliminary examinations.

930D. Doctoral Dissertation. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Horticulture (HOR)

Gary A. Couvillon, *Head*
William M. Randle, *Graduate
Coordinator, 542-2471
(Plant Sciences Building)*

The department offers graduate work leading to the Master of Science and the Doctor of Philosophy degrees in horticulture with majors in fruit crops, vegetable crops, ornamentals, and floriculture. Within a major, the main areas of specialization are plant breeding, biotechnology, anatomy, physiology, postharvest physiology, nutrition, biochemistry, weed control, water relations, and product utilization. The facilities available for graduate training include three research centers, three state experiment stations, and cooperative work is available with three federal research laboratories. These facilities are well equipped and represent the climatic areas of the state.

Graduate work in this department is designed to develop a high order of independent thought, broad knowledge, and technical skills. The emphasis in graduate work is placed on research, supplemented by courses and seminars.

The program for either graduate degree is planned on an individual basis by the student and their major professor. Admission status, credit requirements, transfer credits accepted, academic standards, residence requirements, and time limit conform to regulations as given by the Graduate School and the College of Agricultural and Environmental Sciences.

602. Pomology. 5 hours.

Prerequisite: HOR 302 or permission of department. The physiological principles underlying the production of fruit and nut crops and small fruits with review of experimental evidence. Emphasis placed on varietal selections, site selection, and current cultural practices. (Spring quarter of odd numbered years.)

604. Olericulture. 5 hours.

Prerequisite: HOR 301 or permission of department. Principles and perspectives of vegetable crop production with emphasis placed on current cultural practices and environmental influences. (Winter quarter of even numbered years.)

605. Greenhouse Management I. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: HOR 200 and 304. A study of the principles and practices involved in the production of greenhouse pot plants, bedding plants and a few selected cut flowers. Special emphasis is given to nutrient practices, the effects of growth regulators and postharvest handling and storage practices of floricultural crops. (Fall quarter.)

606. Greenhouse Management II. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: HOR 405/605. A study of commercial greenhouse crop production practices with special emphasis on pot plant production techniques, plant nutrition, fertilizers, and the use of growth regulators. Students will be personally responsible for the culture of a floriculture crop in the greenhouse. (Winter quarter.)

607, 608. Special Problems in Horticulture. 2-5 hours each. (Max. 5 hours each.)

Prerequisite: 10 hours senior courses in horticulture.

This course is designed for the student who wishes to carry out a research or technical problem of special interest under direction of a staff member.

611. Plant Nutrition. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: CHM 112-112L or 122-122L or permission of department.

Principles and perspectives of plant nutrition. Emphasis is placed on the "initial" or "acquisitive" aspects of plant nutrition. This course deals in the main with the mineral nutrition of higher green plants. The course is designed to allow a student to deal with problems encountered by plants as they mine the environment through a sound knowledge of the science of plant nutrition.

621. Postharvest Physiology of Horticultural and Agronomic Crops. 5 hours.

Prerequisite: HOR 304 or permission of department.

A study of functional processes in fruits, vegetables, nuts, seeds, cut flowers and intact plants after they have been harvested. These processes include catabolic and anabolic metabolism, anatomical changes and pathological responses. Transportation, refrigeration, controlled atmospheres, drying and packaging principles are also covered. (Winter quarter.)

666L. (CSS) Methods for Soil Testing and Plant Analysis. 2 hours.

Prerequisite: CHM 112 or 122.

Corequisite: CSS 466/666.

Laboratory exercises in the collection, preparation and elementary assay of soils and plant tissue for nutrient element evaluation. (Fall quarter.)

700M. Master's Research. 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of department. Research while enrolled for a master's degree under the direction of faculty members.

730M. Master's Thesis. 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of department.

800. Horticultural Seminar. 1 hour. One hour lecture per week.

Required of all graduate students in horticulture. Open to all students in related fields. Attendance without registering for credit is permitted. Papers on selected topics to be presented by advanced students, faculty members and guest speakers. (Fall, Winter, Spring, and Summer quarters.)

808. Horticulture Research. 5 hours.

This course is designed for graduate students who wish to carry out advanced research not covered in their thesis topic under the supervision of a staff member.

813. Advanced Plant Nutrition. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: HOR 411/611 or equivalent and BOT 380-380L or equivalent.

A study of the principles of plant nutrition with emphasis on the theories of ion absorption, function of nutrient ions and nutrient effects on plant composition.

815. Growth and Development of Horticultural Crops. 5 hours. Five 1-hour lectures per week.

Prerequisite: BOT 380 or permission of department.

A discussion of growth and development of economic plants with emphasis on the physiological processes of growth, translocation, growth regulators, juvenility, maturity, senescence, floral initiation and development, fruiting, tuber and bulb formation, vernalization, dormancy, rest, and seed germination. (Winter quarter of even numbered years.)

820. Instrumental Methods for Soil and Plant Analysis. 2 hours. Two 1-hour lectures per week. Presentations on the principles for methods and techniques on the elemental assay of soils, soilless mixes and plant tissues used for diagnostic evaluation of nutritional status. Topics covered are principles of sampling, sample preparation and laboratory analysis using procedures in common use in soil testing and plant analysis laboratories.

820L. Instrumental Methods for Soil and Plant Analysis Lab. 3 hours. One 4-hour lab per week. Prerequisite: Permission of department. Conduct field and laboratory exercises in the sampling, sample preparation and elemental assay of soils, soilless mixes and plant tissues using procedures in common use in soil testing and plant analysis laboratories. (Spring quarter.)

900D. Doctoral Research. 1-15 hours. (Max. 60 hours.) Prerequisite: Permission of department. Research while enrolled for a doctoral degree under the direction of faculty members.

930D. Doctoral Dissertation. 1-15 hours. (Max. 60 hours.) Prerequisite: Permission of department.

Journalism and Mass Communication (JRL)

J. Thomas Russell, *Dean*
Joseph R. Dominick, Jr., *Graduate
Coordinator, 542-4974*
(*Journalism Building*)

The graduate studies program of the Henry W. Grady College of Journalism and Mass Communication offers three graduate degrees for students preparing for professional and academic careers: the Master of Arts degree in journalism, the Master of Mass Communication degree, and the Doctor of Philosophy degree in mass communication.

The Master of Arts program provides advanced work and specialization for careers in advertising, broadcasting, newspapers, magazines, and public relations, including teaching and research. The Master of Mass

Communication degree serves those students whose career goals indicate that additional course work will be more advantageous to them than completion of the traditional thesis.

The PhD program is designed to produce critical scholars capable of independent and original research. The program offers advanced study and specialization in preparing for careers in teaching and research or for positions of responsibility in the mass media, business, industry, and government.

Applicants accepted for the master's program may begin their studies at the start of any quarter. All PhD students begin their program in the Fall quarter.

Admission is based on undergraduate grade point average, the results of the Graduate Record Examinations (GRE), and letters of recommendation, as well as previous professional experience and scholarly work.

Anyone holding a bachelor's degree from an accredited college or university is eligible to apply for admission to the master's programs. A master's degree is required for acceptance into the PhD program.

The program is open both to students with undergraduate majors in journalism and mass communication and to those who have majored in other areas. Master's students without backgrounds in journalism normally take at least 30 credit hours (two quarters) of undergraduate-level journalism foundation courses before registering for more than 10 hours of graduate courses. If not previously completed, a course in statistics is also required.

Financial assistance for journalism and mass communication graduate students is available through a variety of sources, including college assistantships, university assistantships, fellowships, scholarships, loans, and student employment.

Applications and additional information may be obtained from the Graduate Studies Office, College of Journalism and Mass Communication.

700M. Master's Research. 1-15 hours. (Max. 50 hours.) Prerequisite: Permission of department. Research while enrolled for a master's degree under the direction of faculty members.

704. Law of Communication. 5 hours.

Prerequisite: JRL 101 and one of the following: JRL 260, 301, 310, or 385.

A broad application of principles of law to the mass communication media, media practice, advertising, and freedom of information, including libel, contempt of court, right of privacy, copyright, and postal laws.

730. Public Affairs Reporting. 5 hours.

Prerequisite: JRL 260 and 351.

An advanced course in analyzing, interpreting and reporting governmental affairs at local, state, and national levels. Students cover assignments for student and professional media.

730M. Master's Thesis. 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of department.

732. Public Opinion Reporting. 5 hours.

Prerequisite: JRL 260 and 351 or permission of department.

An examination of public opinion, its nature and study techniques, propaganda; and media interaction with society, with emphasis upon the measurement of public opinion and interpretation of data. Students will prepare reports of findings for publication in print and broadcast media.

735. Advanced Editing and Makeup. 5 hours.

Prerequisite: JRL 101, 260, 351.

A course in the planning and processing of special pages and sections of newspapers and magazines. Consideration is also given to legal and ethical problems and to the effects of technological developments on staff organization, production, and graphic design.

738. Contemporary American Magazines. 5 hours.

A survey of contemporary American magazines and their role in society. Special attention is given to content, policy, influence, responsibility, ethical questions, economics, typography, and technology.

741. Journalism Ethics. 5 hours.

Prerequisite: JRL 260.

Issues of journalistic ethics and social responsibility confronting contemporary American print media and students planning journalism careers.

749. History of the Mass Media in the United States. 5 hours.

A survey of the mass media in the United States from the colonial period to the present. Special attention is given to newspapers, magazines, radio, and television and their relationship to the history and development of the nation.

753. Editorial Writing and Issues. 5 hours.

Prerequisite: JRL 260 and 351.

A study of editorial policies, ethics, influence, and techniques. Students analyze, discuss, and write editorials about local, state, and national issues.

758. Magazine Article Writing. 5 hours.

Prerequisite: JRL 260 and 351 or permission of department.

A practical course in writing various types of articles and features for magazines, magazine sections of newspapers, and other periodicals.

759. Critical Writing and Reviewing. 5 hours.

Prerequisite: JRL 260 and 351.

A course in criticizing and reviewing books, plays, television, films, and other arts for newspapers, magazines, and related media.

760. Investigative Reporting. 5 hours.

Prerequisite: JRL 530/730 or equivalent.

Practice in and study of investigative, interpretative, and in-depth reporting for the mass media. Students will develop reporting projects in the field of public affairs in keeping with their interests and background.

764. Newspaper Management. 5 hours.

Prerequisite: JRL 101.

A study of business and editorial management of daily and weekly newspapers, including circulation, advertising, and promotion.

766. Journalism in the Secondary School. 5 hours.

Prerequisite: JRL 101 or permission of department.

A survey of news gathering, news writing, copy reading, typography, and business management, with specific relation to the high school newspaper, also school public relations.

767. Contemporary American Newspapers. 5 hours.

A study of the newspaper and its role in America today. Special attention is given to content, policy, influence, responsibility, ethical questions, economics, typography, and technology. Leading papers in various sections are examined closely.

770. Advanced Projects in Magazines. 5 hours.

Prerequisite: JRL 558/758.

An independent projects course in magazines. Most projects are concerned with the writing of magazine articles, particularly series of articles. Students may select projects related to other phases of magazine production.

772. (MKT) Advertising Management. 4 hours.

See MKT 772.

773. (MKT) Media Planning. 4 hours.

See MKT 773.

774. Advertising Campaigns. 5 hours.

Prerequisite: JRL 571.

Corequisite: JRL 571.

Journalism and Mass Communication

Application of the decision-making process in advertising to project assignments. Emphasis on planning, implementing, and controlling advertising campaigns. Class groups function as advertising agencies.

779. Advanced Advertising Copy. 5 hours.

Prerequisite: Grade of B or better in JRL 311 and permission of department.

A continuation of JRL 311 with greater emphasis on creative writing and designing of advertising for national media. Strong emphasis is on individual projects in the form of a professional portfolio of creative efforts.

789. Broadcast News Ethics. 5 hours.

Language, concepts, and issues of moral philosophy and their application in professional settings, with emphasis on current case studies.

791. Public Relations Administration. 5 hours.

Prerequisite: JRL 260 and 385 and required second writing course or permission of department.

A study of the operation and objectives of corporate public relations programs using the case study approach. Emphasis is given to relating the management function of decision-making and policy formulation to the communication process.

800. Proseminar in Mass Communication. 5 hours.

Survey of research and methodology in major areas of mass communication.

808. Seminar: Public Opinion. 5 hours.

Study of patterns of opinion formation including their cultural, social, and economic impact. Analysis of communication content and techniques involving public opinion and persuasion. Student research projects will be developed, discussed and critiqued.

809. Seminar: Mass Communication in Contemporary Society. 5 hours.

A social, cultural, and economic analysis of the processes and effects of mass communications in contemporary society.

810. Seminar in Communication Research. 5 hours.

Historical and quantitative methods for research in communication with an introduction to experimental and survey design, and statistical analysis.

811. Comparative International Communications Systems. 5 hours.

Study of patterns of mass communications throughout the world; philosophies behind them; social, political and economic reasons why a given kind of pattern develops where it does; comparative analysis of operating procedures of various media, with emphasis on newspaper and broadcast media.

812. Seminar: Mass Communication History. 5 hours.

Prerequisite: Course in media history or permission of department.

Historical research method as applied to mass media. Examination of resources, emphasizing state and local holdings. Critical study of selected writing in media history. Development of student research projects.

813. Seminar: Mass Communication Law. 5 hours.

Prerequisite: Course in communication law or permission of department.

Communication law problems, issues, and research methods. Selected publications in the field will be examined and criticized. Student research projects will be discussed, developed and criticized.

814ABCD. Seminar: Problems in Mass Communication. 5 hours. (Max. 10 hours.)

Prerequisite: Ten hours of graduate credit.

Problems, issues and research in selected topic areas.

- A. Radio-Television-Film
- B. News-Editorial
- C. Advertising
- D. Public Relations

815. Seminar in Strategies in Mass Communication Research. 5 hours.

Prerequisite: JRL 810 and STA 422/622.

Procedures and design considerations for the study of media control, content, audiences and effects. Emphasis upon selecting variables, generating study objectives, designing data collection and analysis.

817. Mass Communication Theory. 5 hours.

Theory construction; cognitive processing of mass-mediated messages; social context of the media; institutional functions such as gate-keeping and agenda-setting.

818. Telecommunications Management. 5 hours.

Prerequisite: JRL 800 and 513 or 813 or equivalent.

Analysis of the establishment, operations and planning of modern telecommunications media systems. Theory and practice of management in innovative, technologically-based industries, including radio, television, cable, satellite-to-home delivery and recordings.

820. Seminar in Advertising Research. 5 hours.

Prerequisite: JRL 810 or permission of department.

Nature, scope and application of the measurement of advertising audiences, media and messages; review of methods of advertising research, with applications of research techniques to specific advertising problems.

821. Seminar in Audience Analysis. 5 hours.
Prerequisite: PSY 664 and permission of department.

Examination of the information processing of advertising; emphasizes inquiry into theories of information acquisition, processing and utilization.

822. Qualitative Research in Mass Communications. 5 hours.

Prerequisite: JRL 800.

Introduction to qualitative laboratory methods for research in mass communications. Topics to include field observation techniques, critical and comparative methods, process and cultural studies, individual approaches, and media sociology.

823. Telecommunications Policy. 5 hours.

Prerequisite: JRL 800.

Analysis of telecommunications policy and policy making; regulation of broadcasting, cable, satellites, computer networks and telephone; impact of technological change on the regulation of telecommunications.

830. Research and Readings in Mass Communication. 1-12 hours. (Max. 12 hours.)

Prerequisite: Ten hours or more graduate credit and permission of department.

Directed reading and research in selected areas of mass communication.

900D. Doctoral Research. 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of department.

Research while enrolled for a doctoral degree under the direction of faculty members.

920. Seminar in Mass Communication. 5 hours.

Prerequisite: Open only to doctoral students.

Topics in mass communication theory, research, history, law, ethics, and criticism.

930D. Doctoral Dissertation. 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of department.

Park Hall, Athens, Georgia 30602-6205. FAX: (706) 542-2181. E-mail: MCCREARY@UGA.CC.UGA.EDU

The Program in Linguistics at The University of Georgia provides instruction in general and applied linguistics. Members of the linguistics faculty have strengths in sociolinguistics, as well as in English, Germanic, and Indo-European linguistics. Linguistics at Georgia is an interdisciplinary program in the English Department, consisting of a faculty of 14 drawn from the Departments of Anthropology, Classics, Comparative Literature, English, Germanic and Slavic Languages, and Romance Languages, as well as from the Artificial Intelligence Center. Faculty members specialize in lexicography, phonological theory, syntax, sociolinguistics, applied linguistics, African languages, historical linguistics, artificial intelligence, and natural language processing.

The MA degree provides a broad background in linguistics and requires forty hours of coursework with three core courses, reading knowledge in one foreign language, and an MA thesis. The PhD degree, which allows specialization within rationally defined areas of linguistics, requires eighty hours of coursework with four core courses, reading knowledge of two foreign languages, comprehensive exams, and a doctoral dissertation.

There will be some new courses that are not listed below. Up-to-date course listings, information on exams, admissions procedures, and financial support are available from the director.

600T. (ENG) History of the English Language. 5 hours.

See ENG 600T.

601T. (ENG) American English. 5 hours.

See ENG 601T.

602T. (ENG) Language Variation. 5 hours.

Theory and assessment of regional and social language variation within one language; historical and present-day illustrations come primarily from English, with consideration of the significance of language variation in our modern social context.

606T. (ENG) Old English. 5 hours.

See ENG 606T.

Linguistics (LIN)

Don R. McCreary, *Director*
542-2238
(Park Hall)

The interdisciplinary program in Linguistics at The University of Georgia offers MA and PhD degrees. For further information, please contact the Director, Linguistics Program,

Linguistics

607T. (ENG) Middle English. 5 hours.

See ENG 607T.

609. (ANT) Cognitive Anthropology. 5 hours.

See ANT 609.

611T. (ENG) English Grammar. 5 hours.

See ENG 611T.

614. (PHY) Introduction to the Philosophy of Language. 5 hours.

See PHY 614.

615T. (ENG) Transformational Syntax. 5 hours.

Study of techniques and formalisms for analyzing syntactic phenomena of human languages within the framework of transformational grammar. Examples will be drawn primarily from English.

616T. (ENG) Advanced Generative Syntax. 5 hours.

Prerequisite: LIN/ENG 415T/615T or permission of department.

Formal analysis of syntactic phenomena such as the passive construction, question formation, and relative clauses, with examples drawn primarily from English.

617T. (ENG) Second Language Acquisition. 5 hours.

See ENG 617T.

618T. (ENG) ESL Error Analysis. 5 hours.

See ENG 618T.

621. Introduction to Indo-European Studies. 5 hours.

The history and development of the Indo-European language family: the various early Indo-European dialects, their grammatical structures, and the evolution of those structures from the proto-language.

630. Generative Phonology. 5 hours.

Prerequisite: LIN 481/681.

Study of techniques and formalisms for analyzing sound systems of languages by means of distinctive features.

631. Advanced Generative Phonology. 5 hours.

Prerequisite: LIN 430/630 or permission of department.

Investigation of the formal nature of phonological rules and representations and how they interact to delimit possible real language phonologies, with attention given to such phenomena as syllabification, tone, and vowel harmony.

643. (PHY) Symbolic Logic I. 5 hours.

See PHY 643.

646. (GER) Linguistic Structure of German. 5 hours.

See GER 646.

650. (CSD) Language Development. 5 hours.

See CSD 650.

660. (GER) History of the German Language. 5 hours.

See GER 660.

661. Structure of Sanskrit I. 5 hours.

An introduction to the phonology, morphology, and syntax of the classical Sanskrit language, emphasizing the position of Sanskrit within the Indo-European language family and its importance for Indo-European linguistics.

662. (SKT) Structure of Sanskrit II. 5 hours.

Prerequisite: LIN 461/661.

Continued studies in both the synchronic and diachronic grammar of classical Sanskrit.

669. Historical Linguistics. 5 hours.

Traditional methods of historical linguistics are reviewed with examples from several different language families. Various kinds of possible phonological and syntactic change are investigated in relation to modern linguistic theory.

671. Languages in Contact. 5 hours.

Prerequisite: LIN 680 or LIN 210 or 320H or permission of department.

The study of the influence of languages on other languages spoken in the same or neighboring areas, with consideration of interference in phonology, morphology, syntax, semantics and vocabulary.

674. (CML/EEN) Discourse Analysis. 5 hours.

Prerequisite: LIN 210 or equivalent.

An inter-disciplinary study of language use, text analysis and evaluation. The course will provide students with the ability to investigate and evaluate structural features of language and to identify the strategies used by different writers based on style and cultural backgrounds.

680. Introduction to Linguistics. 5 hours.

Prerequisite: ANT 102 or permission of department.

Modern linguistic topics including syntax, phonology, semantics, pragmatics, language variation, sociolinguistics, historical linguistics, psycholinguistics, and computational linguistics.

681. Phonetics and Phonology. 5 hours.

Prerequisite: LIN 210 or permission of department.

Phonetic transcription of various languages dictated by native and non-native speakers; understanding of the phonemic principle by the solution of selected problems which consist of phonetically transcribed data.

682. Morphology. 5 hours.

Prerequisite: LIN 210 or permission of department.

Grammatical analysis of phonemically transcribed data from numerous languages of the world.

686. (ANT) (EFL) Language in Culture and Society. 5 hours.

Prerequisite: LIN 210 or permission of department.

An introduction to the study of language as a cultural and social phenomenon. Topics include language and meaning, language and world view, language and social behavior, and language and social issues.

687. (CML) Language, Gender, and Culture. 5 hours.

Prerequisite: Lin 210 or equivalent.

An inter-disciplinary study of the role of language and culture in the formation of the philosophical assumptions about gender differentiation in society.

690. Topics in Indo-European Linguistics. 5 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

A study of the synchronic and diachronic grammar of an older Indo-European language not otherwise taught at the University. Possible offerings include Avestan, Hittite, Lithuanian, Old Church Slavic, and Old Irish. Occasionally other languages or topics, such as Indo-European Phonology, Morphology, or Syntax, may be covered.

700M. Master's Research. 1-15 hours. (Max. 60 hours.)

Prerequisite: Permission of department.

Research while enrolled for a master's degree under the direction of faculty members.

707F. (FR) Applied French Linguistics. 5 hours.

See FR 707F.

707S. (SP) Applied Spanish Linguistics. 5 hours.

See SP 707S.

730M. Master's Thesis. 1-15 hours. (Max 60 hours.)

Prerequisite: Permission of department.

757F. French Phonetics. 5 hours.

See FR 757F.

757S. Spanish Phonetics. 5 hours.

See SP 757S.

770F. (FR) History of the French Language. 5 hours.

See FR 770F.

770S. (SP) History of the Spanish Language. 5 hours.

See SP 770S.

805. Topics in Syntax and Semantics. 5 hours.

Prerequisite: LIN/ENG 415T/615T.

Study of a number of issues arising from the Standard Theory of transformational grammar and of the various solutions which have been proposed to these issues.

810T. (ENG) Seminar in English Linguistics. 5 hours. (Max. 15 hours.)

See ENG 810T.

811. Seminar in Syntactic Theory. 5 hours. (Max. 15 hours.)

Prerequisite: LIN/ENG 415T/615T.

Current issues and research topics in transformational grammar. Each seminar will focus on a particular topic in grammar, usually a grammatical theory. Topics include government and binding, functionalism, and relational grammar.

819. (PHY) Seminar in the Philosophy of Language. 5 hours. (Max. 15 hours.)

See PHY 819.

848. Seminar in Semantics and Lexicography. 5 hours. (Max. 15 hours.)

Prerequisite: LIN/ENG 415T/615T.

This course will focus on some specialized aspects of semantics and lexicology/lexicography. Among the topics included from time to time will be speech acts, metaphor, semantic field theory, lexicology and lexicography, and contrastive studies in the lexicon.

857. (CS) Natural Language Processing. 5 hours.

Three lectures and two 2-hour lab periods.

See CS 857.

881. Language and Reality. 5 hours.

Prerequisite: Interview with instructor.

This course focuses on the discussion of three questions:

How does language communicate?

What is communicated?

What is the relation between "meaning" and "reality"?

The history of epistemology is examined from a psycholinguistic point of view, the child's cognitive development and acquisition of language are discussed, and recent cybernetical approaches to the problems of communication and the concept of "reality" are presented.

882. (PSY/EPY) Psycholinguistics. 5 hours.

See PSY 882.

887. Seminar in Language, Culture, and Society. 5 hours. (Max. 15 hours.)

Prerequisite: LIN/ANT 486/686 or permission of department.

A study of topics and issues in language and its relationship with culture and society. Specific topics to be covered in individual courses are language acquisition, bilingualism, sociolinguistics, pidgins and creoles, and variation theory.

900. Directed Readings in Linguistics. 5 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

An advanced course designed to allow the student to investigate various linguistics topics. A term paper will be required each time the course is elected.

900D. Doctoral Research. 1-15 hours. (Max. 30 hours.)

Prerequisite: Permission of department. Research while enrolled for a doctoral degree under the direction of faculty members.

930D. Doctoral Dissertation. 1-15 hours. (Max. 90 hours.)

Prerequisite: Permission of department.

Sanskrit (SKT)

662. (LIN) Structure of Sanskrit II. 5 hours. See LIN 662.

Marine Sciences (MAR)

Robert E. Hodson, *Acting Head*
Charles A. Uzes, *Graduate Coordinator,*
542-2867
(Ecology Building)

The Department of Marine Sciences supports MS and PhD programs. Courses of study are currently offered in the biological, chemical, and physical areas of marine science. Graduate students have access to the extensive field and laboratory facilities of the School of Marine Programs in Athens and at Sapelo Island, Skidaway Island, and Brunswick on the Georgia coast.

610. General Oceanography 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: CHM 122-122L and PCS 128-128L and either GLY 126-126L or BIO 108-108L or equivalent.

Structure, composition, dynamics and life of the oceans. Study of the physical, chemical, biological and geological processes in the oceans, emphasizing the interaction among these scientific disciplines to understand how the marine system functions.

662-662L. (MIB) Microbial Ecology. 5 hours. Three lectures of recitations and two 3-hour lab periods.

Prerequisite: MIB 350 or permission of department. Emphasizes the roles of microorganisms in ecosystems. Attention is given to the examination of nutrient cycles, methods of microbial analysis and the functional roles of microorganisms.

681. Microbial Biogeochemistry. 5 hours.

Prerequisite: MIB 350, BCH/BIO 310 or equivalent; or permission of department. Recommended: MIB 462/662, 409/609.

An intensive examination of the microbial processes which are or have been important in modifying the earth's lithosphere, hydrosphere, and atmosphere. Emphasis is placed on microbially mediated precipitation and solubilization of minerals, cycling of dissolved and particulate organic matter in natural waters, and the physiological ecology of microorganisms adapted to environments of extreme pH, temperature, and pressure, etc.

801. Biological Oceanographic Processes. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: Permission of department.

Major biological processes in the water column and sediments of estuarine, coastal, and open sea environments, with emphasis on interactions of biota with marine chemical and physical processes.

802-802L. Chemical Oceanography. 5 hours.

Prerequisite: CHM 122, PCS 128, MAT 254, CHM 123.

The chemical forms, distributions, and reactivities of major and minor elements in seawater. Discussion of the use of chemical tracers to investigate biological and physical processes in the ocean.

803. General Physical Oceanography. 5 hours.

Prerequisite: [MAT 255 and PCS 128-128L] or permission of department.

Oceanic circulation and elementary dynamical principles. Major topics include observed physical properties of the world's oceans, geostrophy, Ekman layers, and vorticity.

810. Estuarine and Coastal Physical Oceanography. 5 hours. Three lectures and one 3-hour lab period.

Prerequisite: MAR 803 or permission of department.

Physical principles governing the distribution of suspended and dissolved material in estuarine and coastal waters. Role of tidal currents, winds, and freshwater discharge. Physical processes leading to mixing in estuarine and shallow coastal water. Field and laboratory collection and analysis of estuarine data.

811. Marine Sediment Diagenesis. 5 hours.
Prerequisite: [MAR 802-802L and MAT 255] or permission of department.
Nature and properties of marine sediment pore waters and surface sediments. Chemical, physical and biological processes controlling sediment pore water chemistry and the alteration and recycling of recently deposited sediment materials.

812. Geophysical Fluid Dynamics. 5 hours.
Prerequisite: [MAR 803 and MAT 358 and 459/659 and PCS 138-138L] or permission of department.

Fundamental geophysical fluid dynamics of small-, medium-, and large-scale rotating stratified fields. Derivation of the Navier-Stokes equation, dimensional analyses, quasi-geostrophic approximation, potential vorticity principles, buoyancy-driven flows.

813. Seminar in Hydrobiology. 1 hour. (Max. 6 hours.)
Prerequisite: Permission of department.
Weekly meetings for discussion of current research in marine and freshwater biology and related areas.

814. Organic Geochemistry. 5 hours. Four lectures and one 2-hour lab period.
Prerequisite: CHM 240-240L and 340-340L and GLY 126-126L or equivalent courses.
An examination of the use of specific organic marker compounds as probes for biological and geochemical processes. Early diagenesis of lipids and other biochemicals. Molecular markers for paleoceanographic conditions. Preservation of organic matter and petroleum formation.

815. Ocean Waves. 5 hours.
Prerequisite: [MAR 803 and MAT 358 and 459/659 and PCS 138-138L] or permission of department.
Physics and mathematics of wave motions in the ocean. Kinetics of waves, phase and group velocities, frequency and wave number dispersion, instabilities, barotropic and baroclinic wave forcing, gravity waves, vorticity waves, internal waves, tides, Kelvin waves, planetary Rossby waves. Time series and spectral analysis as oceanographic experimental tools.

816-816L. Marine Ecology. 5 hours. Three lectures and two 2-hour labs.
Prerequisite: BIO 350 or equivalent, or permission of department.
The ecology of organisms, populations and communities occurring in marine environments.

Marriage and Family Therapy (MFT)

Jerry E. Gale, *Graduate Coordinator,*
542-2650
(Dawson Hall)

Please see Index for information on the certificate program in marriage and family therapy. The course having a marriage and family therapy prefix is listed below:

601. Issues in Marriage and Family Therapy. 5 hours.
Prerequisite: Two MFT courses (10 hours) and clinical experience.
Disciplines and professional groups related to marriage and family therapy including historical, ethical and legal issues, and other topics relevant to the current practice of marriage and family therapy.

Mathematics (MAT)

Kevin F. Clancey, *Head*
William H. Kazez, *Graduate Coordinator,* 542-2211
(Boyd Graduate Studies Research Center)

The Department of Mathematics offers the MA degree, the MAMS degree, and the PhD degree. Students who are working on the MA degree may choose to major in mathematics with either a thesis option or non-thesis option. The department, along with the Departments of Statistics, Computer Science, and Management Sciences and Information Technology, offers a professional master's degree, Master of Applied Mathematical Science (MAMS). The MAMS degree requires a technical report. The department also cooperates with the College of Education in the MEd degree and the EdD degree with a major in mathematics education.

Mathematics

Language requirements: one foreign language for MA and two foreign languages for PhD (from French, German, and Russian). A computer science or statistics research skills requirement may be substituted for one foreign language.

603. Numerical Analysis I. 3 hours.

Prerequisite: MAT 255, CS 500/700 or STA 431.
Recommended corequisite: MAT 256.

Iterative techniques for the numerical solution of nonlinear equations; polynomial interpolation; numerical integration; error analysis; digital computer problems and applications.

604. Numerical Analysis II. 3 hours.

Prerequisite: MAT 403/603.
Recommended corequisite: MAT 358.

Numerical solution of systems of linear equations, matrix inversion, eigenvalues, numerical solution of ordinary differential equations, and digital computer applications.

605. Numerical Analysis III. 3 hours.

Prerequisite: MAT 404/604.
Iterative methods for the solution of systems of nonlinear equations; splines; linear and convex programming; digital computer applications.

610, 611, 612. Advanced Calculus. 3 hours each.

Prerequisite: MAT 255 and 256.
The concepts, methods and applications of advanced multivariable calculus. Partial differentiation, implicit functions, multiple integrals, line and surface integrals, differential forms and the classical integral theorems of vector analysis, infinite series, Fourier series, improper integrals, and special functions. The calculus of variations. This course emphasizes the conceptual understanding of multivariable calculus that is required for the solution of concrete problems and applications to other areas.

614, 615, 616. Introductory Topology. 3 hours each.

Prerequisite: MAT 255.
An introductory course in point set topology.

620, 621, 622. Introduction to Methods of Applied Mathematics. 3 hours each.

Prerequisite: MAT 255 and 358.
The construction of mathematical models for applied problems in terms of ordinary and partial differential equations. The standard methods for the solution of the boundary value problems and partial differential equations of applied mathematics. Solution by series, Fourier series, Bessel functions, Legendre polynomials. Laplace and Fourier transforms. Variational methods. Complex variable techniques. This course empha-

sizes the use of advanced mathematical methods for the solution of "real world" problems from a variety of scientific areas.

623. Mathematical Models in Biology I. 3 hours. Prerequisite: MAT 253, 254.

Construction, use and evaluation of mathematical models for the biological sciences. Compartmental flow models, dynamic system models, discrete and continuous models, deterministic and stochastic models. Emphasis on construction and use of models by students in their own research. (Not for graduate credit for mathematics majors.)

624. Mathematical Models in Biology II. 3 hours. Prerequisite: MAT 423/623.

A continuation of MAT 623, studying specific models and related mathematics more thoroughly, as determined by the interest of those enrolled. More emphasis on model use and evaluation. (Not for graduate credit for mathematics majors.)

627. (CS) Graph Theory. 3 hours.

Prerequisite: MAT 256.
The elementary theory of directed and nondirected graphs. Topics include connectedness, bases, trees, Euler's problem, the traveling salesman problem and networks. A number of algorithms and applications are included.

629. Game Theory. 3 hours.

Prerequisite: MAT 256.
An introduction to the ideas and techniques of Game Theory. Topics include cooperative and non-cooperative games, zero-sum games, differential games, equilibria, solution theory and the core. A number of applications are discussed.

631. Theory of Numbers. 3 hours.

Prerequisite: MAT 254.
An elementary course in number theory.

632. Theory of Numbers II. 3 hours.

Prerequisite: MAT 431/631.
A continuation of MAT 631.

633. Theory of Numbers III. 3 hours.

Prerequisite: MAT 432/632.
A continuation of MAT 632 with an introduction to algebraic and analytic number theory.

635, 636. Elementary Differential Topology. 3 hours each.

Prerequisite for 635: MAT 255 and 256 and 414/614; For 636: MAT 435/635.
Differential calculus in \mathbb{R}^n , manifolds in Euclidean space. Fundamental ideas of transversality, homotopy, and intersection theory. Differential forms, integration in manifolds. Stokes' theorem, deRham cohomology. Topics from differential geometry.

637. Modern Algebra and Geometry I. 3 hours. Prerequisite: MAT 256 and 390.

An integrated course in modern algebra, linear algebra, and geometry. Integers, modular arithmetic, Euclidean algorithm and applications. Rational, real and complex number systems; isometries of the plane. Polynomials.

638. Modern Algebra and Geometry II. 3 hours.
Prerequisite: MAT 437/637.

Continuation of MAT 437/637. Rings and fields. Splitting fields of polynomials. Groups and symmetry groups.

639. Modern Algebra and Geometry III. 3 hours.
Prerequisite: MAT 438/638 or 440/640.

Continuation of MAT 438/638. Group actions and counting principles: symmetry groups of regular polyhedra, Burnside's Theorem. Isometries of three-space, affine and projective geometry. Additional topics may include: Galois theory, non-Euclidean geometry, or further topics in number theory.

640. Introduction to Higher Algebra. 3 hours.
Prerequisite: MAT 256.

An introductory course in group theory. Examples of groups, subgroups, quotient groups, homomorphism theorems, permutation groups.

641. Introduction to Higher Algebra. 3 hours.
Prerequisite: MAT 440/640.

An introductory course in ring and field theory. Examples of rings, ideals, quotient rings, homomorphism theorems, polynomial rings, field extensions, constructible numbers, some Galois theory.

642. Introduction to Higher Algebra. 3 hours.
Prerequisite: MAT 441/641.

A course in the theory of vector spaces and linear transformations. A more rigorous and deeper treatment than MAT 256. Basis and dimensions of vector spaces, characteristic roots, vectors and equation of a linear transformation, canonical forms, and determinants.

647. (CS) The Design and Analysis of Computer Algorithms I. 3 hours.

Prerequisite: CS 202 or the equivalent, MAT 255, and either CS 303 or MAT 256.

Computer models, design of algorithms, sort/order problems.

648. (CS) The Design and Analysis of Computer Algorithms II. 3 hours.

Prerequisite: MAT/CS 447/647.

Integer and polynomial arithmetic, pattern recognition, algorithms on graphs.

653, 654, 655. Introduction to Analysis. 3 hours.
Prerequisite: MAT 255.

An introductory course in functions of a real variable; elementary topology of metric spaces; continuous functions; differentiation and Riemann integration; measure theory and the Lebesgue integral.

660. Elementary Differential Equations I. 3 hours.

Prerequisite: MAT 256 and 358.

Higher order linear differential equations. Laplace transform method, introduction to numerical methods, applications.

661. Elementary Differential Equations II. 3 hours.

Prerequisite: MAT 256 and 358.

Systems of first order linear differential equations, nonlinear differential equations and stability, applications to biological systems.

663. Elementary Differential Geometry. 5 hours.
Prerequisite: MAT 255 and 256.

An introduction to the geometry of curves and surfaces in Euclidean space. Frenet formulas for curves and Gaussian curvature of surfaces. Physical applications. Non-Euclidean geometries.

665. Introduction to Complex Variables. 5 hours.
Prerequisite: MAT 255.

Introductory course in complex variable theory with applications. (Winter, Spring quarters.)

667. (CS) Introduction to Combinatorics. 3 hours.

Prerequisite: MAT 256.

An elementary introduction to combinatorial thinking, including basic counting principles, binomial coefficients, and recurrence relations. This course is recommended for students in mathematics, computer science, and mathematics education.

668. (CS) Introduction to Combinatorics II. 3 hours.

Prerequisites: MAT/CS 467/667.

Topics in combinatorics, including design theory, enumeration theory, combinatorial algorithms and coding theory.

671, 672, 673. (STA) Introduction to Probability Theory. 3 hours each.

Prerequisite: MAT 255.

Probability axioms, combinatorial analysis, random variables, univariate and multivariate distributions, expectation, conditional distributions, independence, law of large numbers and central limit theorems, random walks, Markov chains and processes, Brownian motion, branching and renewal processes, diffusion processes. Applications.

677. Mathematical Methods of Operations Research. 3 hours.

Prerequisite: MAT 256.

Mathematics

An introduction to both the theory and application of linear and nonlinear programming. Topics covered include linear programming, duality, the simplex method, Kuhn-Tucker conditions and quadratic programming.

700M. Master's Research. 1-15 hours. (Max. 24 hours.)

Prerequisite: Permission of department.

Research while enrolled for a master's degree under the direction of faculty members.

702. Basic Ideas of Arithmetic. 5 hours.

Prerequisite: MAT 116 or two years teaching experience.

Operations of arithmetic for middle school teachers; number systems, set theory to study mappings, functions, and equivalence relations.

703. Basic Ideas of Geometry and Measurement. 5 hours.

Prerequisite: MAT 116 or two years teaching experience.

Principles of geometry and measurement for middle school teachers.

704, 705, 706. Basic Ideas of Calculus. 5 hours each.

Prerequisite: MAT 254 or permission of department.

A brief survey of the principal ideas and techniques of calculus from a modern point of view. Intended as a refresher course for high school teachers who feel the need for an understanding of calculus in order to prepare their students for college work. For credit toward the Master of Education degree only.

710T. Technical Report. 5 hours. (Max. 15 hours.)

For use with the master's degree in Applied Mathematical Science—Mathematics option.

716. Linear Algebra for Teachers. 5 hours.

Prerequisite: MAT 100-109 or either two mathematics courses numbered 200 or above or two years teaching high school algebra.

An introduction to matrices, vectors and linear programming. For credit toward Master of Education degree only.

720. Foundations of Geometry. 3 hours.

Prerequisite: MAT 100-109 or 116 or two years of teaching high school geometry.

A course in more advanced elementary geometry especially designed for prospective teachers of secondary school mathematics.

721. Advanced Topics in Geometry. 3 hours.

Prerequisite: MAT 520/720.

A continuation of MAT 520/720.

722. Transformation Geometry. 3 hours.

Prerequisite: MAT 520/720.

Transformation geometry.

730M. Master's Thesis. 1-15 hours. (Max. 30 hours.)

Prerequisite: Permission of department.

(With the approval of his/her major professor, a candidate for the MA degree may take fifteen hours at the 800 level in lieu of writing a thesis.)

756. Fundamentals of Probability and Statistics. 5 hours.

Prerequisite: Two mathematics courses numbered 200 or above or two years experience teaching high school mathematics.

Fundamental ideas of probability with particular emphasis on their application in statistics.

Unless otherwise stated the prerequisite to any 800 numbered course is three courses having MAT 254 as a prerequisite.

800, 801, 802. Real Analysis. 5 hours each.

Prerequisite: MAT 455/655.

Integration and measure, especially Lebesgue and Lebesgue-Stieltjes measure, Riesz Representation Theorem, differentiation of measures, product measures, L^p spaces, elementary theory of Hilbert and Banach spaces, Fourier transforms.

804, 805, 806. Methods of Applied Mathematics. 5 hours each.

Prerequisite: Undergraduate applied mathematics or permission of department.

Green's function methods, system theory, state space equations, generalized functions and equations of physics, generalized Fourier series and special functions, transform methods, differential and partial differential equations, wave equations, integral equations, asymptotic expansions and steepest descent methods, Pontrjagin's variational methods and control theory, generalized coordinate transformations, tensor calculus.

810, 811, 812. Topology. 5 hours each.

Prerequisite: MAT 416/616 or 436/636.

Review of general topology; topological spaces, continuous functions, product and quotient topology, connectedness and compactness, countability and separation axioms, function spaces. Fundamental group, van Kampen's theorem, covering spaces. Homology: degree of maps, Euler characteristic, Lefschetz fixed point theorem. Homological algebra. Cohomology, Poincaré duality. Homotopy groups, fiber bundles.

814, 815, 816. Analytic Functions of a Complex Variable. 5 hours each.

Cauchy-Riemann equations, Cauchy's Theorem and its consequences, residue theory, analytic continuation, harmonic functions, conformal mapping, Riemann Mapping Theorem, elliptic functions, Mittag-Leffler and Weierstrass Theorems, elementary theory of Riemann surfaces.

817, 818, 819. Probability Theory. 5 hours each.
Prerequisite: MAT 454/654 or 412/612 and permission of department.

Measure-theoretic foundation for probability theory (Kolmogorov's axioms); distributions and characteristic functions. Independence and conditioning; several modes of convergence of sequences and series of random variables. Weak and strong laws of large numbers, central limit theorems and laws of iterated logarithm. Theory and applications of martingales and Brownian motion.

825. Differential Geometry I. 5 hours.

Prerequisite: MAT 436/636 or 416/616.

Basic theory of differentiable manifolds and vector bundles; tensors; flows and Frobenius theorem; Stokes' theorem. Riemannian geometry: connections, curvature, first and second variation; geometry of submanifolds. Gauss-Bonnet theorem and characteristic classes. Additional topics.

826. Differential Geometry II. 5 hours.

Prerequisite: MAT 825.

Continuation of MAT 825.

827. Differential Geometry III. 5 hours.

Prerequisite: MAT 826.

Continuation of MAT 826.

833. Advanced Numerical Analysis I. 5 hours.

Prerequisite: MAT 605 or permission of department.
Recommended corequisite: MAT 453/653 or 410/610.

Existence, uniqueness and convergence theorems for linear and nonlinear systems of equations; algorithms for calculating eigenvalues and eigenvectors; digital computer applications.

834. Advanced Numerical Analysis II. 5 hours.

Prerequisite: MAT 833.

Numerical integration in one or more dimensions; numerical solution of ordinary and partial differential equations; numerical solutions of integral equations; digital computer applications.

835. Advanced Numerical Analysis III. 5 hours.

Prerequisite: MAT 834.

Recommended corequisite: MAT 465/665.

General interpolation and approximation theory; remainder theory; approximation of linear functionals; Hilbert space theory and applications to numerical analysis; digital computer applications.

840, 841, 842. Functional Analysis. 5 hours each.

Prerequisite: MAT 802 or permission of department.

Banach spaces, the three basic principles of functional analysis; linear topological spaces, local convexity, and the Krein-Milman theorem; spectral theory for operators in Banach space, Riesz theory for compact operators; Hilbert spaces,

spectral theorem for normal operators, and introduction to operator theory, application to operator equation.

843, 844, 845. Modern Algebra. 5 hours each.

Prerequisite: MAT 442/642.

Group theory, including the Sylow Theorems, Jordan Holder Theorem and fundamental Theorem of Finitely Generated Abelian Groups; ring theory, including ideal theory and Wedderburn's Theorem; field theory including Galois theory; advanced linear algebra.

846. Algebraic Geometry I. 5 hours.

Prerequisite: MAT 442/642.

Corequisite: MAT 843.

An introduction to the study of algebraic loci including the theory of algebraic curves. Affine and projective varieties, regular and rational mappings, dimension, tangent space and tangent cone, linear systems, blowing up. Algebraic curves: Bezout's theorem, differentials and genus, resolution of singularities, Riemann-Roch theorem, moduli.

847. Algebraic Geometry II. 5 hours.

Prerequisite: MAT 846.

Corequisite: MAT 844.

Continuation of MAT 846.

848. Algebraic Geometry III. 5 hours.

Prerequisite: MAT 847.

Corequisite: MAT 845.

Continuation of MAT 847.

860. Ordinary Differential Equations I. 5 hours.

Prerequisite: MAT 256, 455/655, or permission of department.

The basic theory of ordinary differential equations: existence and uniqueness of solutions, Gronwall's inequality, continuation of solutions, dependence on initial conditions and parameters, linear systems, Floquet Theory.

861. Ordinary Differential Equations II. 5 hours.

Prerequisite: MAT 860.

The basic qualitative theory of ordinary differential equations: autonomous systems, limit sets and limit cycles, Poincare-Bendixson Theorem, stability of periodic solutions, stationary points in the plane, perturbed linear systems, Wazewski's Theorem.

862. Ordinary Differential Equations III. 5 hours.

Prerequisite: MAT 861.

The classical second order theory: Sturm-Liouville boundary value problems, singular boundary value problems, use of Implicit Function Theorem and fixed point theorems.

865, 866, 867. Lie Groups. 5 hours each.

Prerequisite for 866: MAT 865; for 867: MAT 866.

Corequisite for 865: MAT 800 and 440/640; for 866: MAT 801 and 441/641; and for 867: MAT 802 and 442/642.

General theory of compact groups, Peter-Weyl theorem, classical compact groups, structure theorems of Lie groups, Lie algebras, classification theorems, covering groups, transformation groups, symmetric spaces, representation theory.

890. Seminar in Number Theory. 1-5 hours. (Max. 90 hours.)

Prerequisite: Permission of department.
A study of advanced topics in number theory including some phase of current research.

891. Seminar in Topology. 1-5 hours. (Max. 90 hours.)

Prerequisite: MAT 812 or permission of department.
A study by the seminar method of some phase of current research in topology.

892. Seminar in Algebra. 1-5 hours. (Max. 90 hours.)

Prerequisite: MAT 845 or permission of department.
A study by the seminar method of some phase of current research in algebra.

893. Seminar in Analysis. 1-5 hours. (Max. 90 hours.)

Prerequisite: MAT 802 or permission of department.
A study by the seminar method of some phase of current research in analysis.

894. Seminar in Numerical Analysis. 1-5 hours. (Max. 90 hours.)

Prerequisite: MAT 835 or permission of department.
A study of special topics in numerical analysis by the seminar method.

895. Stochastic Systems Seminar. 1-5 hours. (Max. 90 hours.)

Frontier methods, study of journal papers and recent books, dissertation research in stochastic differential equations, stochastic operator theory, etc. Visiting speakers and staff covering various topics of interest.

896. Applied Mathematics and Computer Seminar. 1-5 hours. (Max. 90 hours.)

Prerequisite: MAT 806 or permission of department.
Recent work. Dissertation research. Large complex systems and other special topics. Applications in aerospace engineering, physics, ecology, meteorology.

897. Seminar in Geometry. 1-5 hours. (Max. 90 hours.)

Prerequisite: Permission of department.
A study by the seminar method of some phase of current research in geometry.

900D. Doctoral Research. 1-15 hours. (Max. 60 hours.)

Prerequisite: Permission of department.

Research while enrolled for a doctoral degree under the direction of faculty members.

930D. Doctoral Dissertation. 1-15 hours. (Max. 60 hours.)

Prerequisite: Permission of department.

Medical Microbiology (MMB)

Richard E. Wooley, *Head and Graduate Coordinator, 542-5825*
(*Veterinary Medicine Building*)

Graduate work is offered in medical microbiology leading to the MS and PhD degrees. Thesis specialization may be in any of the five areas: biology of pathogenic microorganisms, immunology-immunochemistry, animal virology, infectious diseases of mammals, avian species, or fish. An MS degree is also offered in an epidemiology specialization. Two types of students are accepted for graduate training: those with a bachelor's degree or a master's degree and an interest in medical microbiology and those with a DVM degree or other medical degree who desire advanced training in this area.

Instruction in medical microbiology is coordinated with the course offerings in the microbiology department of the College of Arts and Sciences and with the agronomy, food science, and animal and dairy science departments of the College of Agricultural and Environmental Sciences. The statistics and computer science departments are involved in the epidemiology program of study. Suitable courses in these departments are included in students' programs as advisable. Instruction in infectious diseases is coordinated with work in the pathology and medicine and surgery departments of the College of Veterinary Medicine, the Poultry Diagnostic and Research Center, and regional federal research facilities.

Excellent facilities and equipment, including computers and software, are available for research needs. Laboratory space is available for cell culture and virological studies,

bacterial pathogenesis, immunology and immunochemistry, diagnostic microbiology, and fish disease research.

600. Principles of Epidemiology. 5 hours.

Prerequisite: Two courses in microbiology and permission of department.

Studies in principles of epidemiology, utilizing the holistic approach to population-disease relationships.

610-610L. Immunology. 5 hours. Three lectures and two double lab periods.

Prerequisite: MIB 350 and BCH/BIO 310, or permission of department.

Introduction to the mechanism of the immune response, host resistance to infection and serologic testing methods.

622-622L. Pathogenic Bacteriology. 5 hours. Three lectures and two double lab periods.

Prerequisite: MIB 350 and one additional course in microbiology.

Studies on the morphological, cultural and physiological properties of the important pathogenic bacterial and mycotic agents; their relation to health and disease is emphasized.

639-639L. Diagnostic Microbiology. 5 hours. Four lectures and four 1-hour lab periods.

Prerequisite: MMB 410/610 or MIB 410/610 and MMB 422/622 or MIB 422/622 and permission of department.

A course presenting an application of basic microbiologic techniques to the problems associated with the recovery of disease organisms from clinical materials. Emphasis is placed on methodology and problems involved in laboratory isolation and identification.

650-650L. Virology. 5 hours. Three lectures and two double lab periods.

Prerequisite: MMB 350, BCH/BIO 310.

An introduction to the viruses: classification, replication, methodology, pathogenesis and epidemiology of viral diseases, and viral neoplasia.

680. Environmental Epidemiology. 5 hours.

Prerequisite: Two courses in microbiology.

Application of the basic principles and concepts of epidemiology to the environmental considerations of infectious diseases and chronic illnesses of current public health significance with special emphasis on occupational health.

700M. Master's Research. 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of department.

Research while enrolled for a master's degree under the direction of faculty members.

730M. Master's Thesis. 1-15 hours. (Max. 20 hours.)

Prerequisite: Permission of department.

816. Seminar in Medical Microbiology. 1 hour. (Max. 3 hours per degree.)

Prerequisite: Available to majors in microbiology or allied sciences with two courses in microbiology.

Semi-formal meetings for discussion of research and new developments in the field. Attendance required of all microbiology graduate students.

820. (MIB) Advanced Pathogenic Microbiology. 5 hours.

Prerequisite: MMB 422/622 or MIB 422/622, BCH 801 and 802 or 401/601 and 402/602 or permission of department.

A detailed description of the pathogenic bacteria and their relationship to disease at the biochemical level.

821. Advanced Experimental Procedures in Pathogenic Bacteriology. 5 hours. Two lectures or discussion periods and three double lab periods.

Prerequisite: MMB/MIB 820 and MIB 480/680 and BCH 402/602 or 802.

A course in the experimental procedures used to study the various mechanisms by which pathogenic bacteria cause disease. Emphasis is placed on laboratory techniques involved in the identification, isolation, and characterization of factors responsible for microbial survival and virulence within a host.

823. (MIB) Special Topics in Microbial Pathogenesis. 1 hour. (Max. 5 hours.)

Prerequisite: Available to majors in medical microbiology and general microbiology or allied sciences with two courses in microbiology. Presentation and discussion of published research and new developments in microbial pathogenesis.

824. Experimental Design in Molecular Microbiology. 3 hours.

Prerequisite: MMB 450/650-450L/650L and 422/622-422L/622L and 821 or equivalent courses.

Molecular techniques to study veterinary pathogens and host interactions as well as alternative experimental strategies.

830-830L. Immunobiology. 5 hours. Three lectures and two double lab periods.

Prerequisite: MMB 410/610 or MIB 410/610 and BCH 802 or permission of department.

Reactions of the host such as antibody production, delayed hypersensitivity, graft rejection and anaphylaxis will be emphasized. Recent findings in immunology will be considered in light of their theoretical implications to biology and medicine. In addition, the chemistry of antigens and their effect on the immune response will be considered.

835. Principles and Applications of Flow Cytometry. 5 hours. Three lectures and two 3-hour lab periods.

Prerequisite: Permission of department.

Basic and theoretical principles of flow cytometry (FCM), operation of FCM, data analysis, and applications of FCM techniques.

850-850L. Animal Virology. 5 hours. Three lectures and two double lab periods.
Prerequisite: MMB 450/650 or MIB 450/650 and BCH 802.

A detailed study of the biological and physico-chemical characteristics of animal viruses stressing the cytological and biochemical alterations in infected cells. Reactions involving the entire host are minimized in this course except in cases where distinct host reactions are a phenomenon common to many viruses.

890. Problems in Medical Microbiology. 1-10 hours. (Max. 10 hours per degree.)

Prerequisite: Adequate preparation in microbiology. This course allows students to pursue intensive study, under the direction of staff members, on approved problems in medical microbiology.

900D. Doctoral Research. 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of department. Research while enrolled for a doctoral degree under the direction of faculty members.

930D. Doctoral Dissertation. 1-15 hours. (Max. 20 hours.)

Prerequisite: Permission of department.

Microbiology (MIB)

Harry A. Dailey, *Head*
Lawrence J. Shimkets, *Graduate
Coordinator, 542-2681*
(*Biological Sciences Building*)

Programs of study leading to both MS and PhD degrees are offered in different fields of microbiology including microbial genetics, microbial ecology, microbial pathogenesis, cell biology, microbial physiology, anaerobic microbiology, and biotechnology. The department occupies over 34,000 square feet of recently renovated space, with laboratories equipped for electrophoretic analyses, gas-liquid chromatography, high-performance liquid chromatography, tissue culture, radioisotopic studies, light spectroscopy, fluorimetry, cell fractionation, ultracentrifugation, fermentation and computerized molecular sequence/structure analyses. In

addition, on-campus facilities available to faculty and students include an electron microscopy center, a large-scale fermentation laboratory, a cell analysis facility for flow cytometry, and a molecular genetics instrumentation laboratory offering automated protein sequencing, amino acid analysis, oligonucleotide synthesis and peptide synthesis services. The Georgia Marine Institute on Sapelo Island, and the Savannah River Ecology Laboratory are available for environmental studies.

Prospective students should have credit for courses in either calculus or statistics, general genetics, and a year each of inorganic and organic chemistry, with labs. Applicants with otherwise acceptable qualifications may enroll in those courses they lack after admission to our program. No foreign language is required for the master's or doctoral degrees. The Test of Spoken English (TSE) is required of all foreign applicants whose native language is not English.

Prospective students should address inquiries to the Graduate Coordinator, Department of Microbiology. Graduate students are normally admitted at the beginning of fall quarter, but in special circumstances a student may be admitted at the beginning of any quarter. Students whose applications are complete by February 1 will automatically be considered for financial assistance, which usually begins in the fall quarter. In addition to several attractive fellowships, assistantships are available for teaching and research. A typical twelve-month stipend ranges from \$10,692 to \$11,400 depending on the degree objective and level of experience. Support for PhD students on the Microbial Diversity research training grant is available at \$15,000 per year. All students supported by assistantships receive a tuition reduction to \$25 per quarter.

Faculty members are associated with six interdepartmental programs including cell and developmental biology, ecology, genetics, metalloenzymes, microbial diversity, and parasitology. Graduate course offerings in these interdepartmental programs are available to microbiology students and serve to complement the graduate course offerings in microbiology. The listings in biochemistry and molecular biology, biology, botany, chemistry, cellular biology, ecology, genet-

ics, marine sciences, and medical microbiology should be consulted to determine the range of courses available to microbiology majors.

604. Microbiology of Anaerobes. 5 hours.

Prerequisite: MIB 409/609 or BCH 402/602 or permission of department.

The course will cover bacterial adaptations to life without oxygen; the differences between facultative and strict anaerobes; distribution, taxonomy, and physiology of anaerobes; fermentations and pathways; anaerobic methodology; industrial applications of anaerobes.

607-607L. (FS) Food and Dairy Microbiology. 5 hours.

Three 1-hour lectures and two 2-hour lab periods.

See FS 607.

609. Fundamentals of Microbiology. 5 hours.

Prerequisite: MIB 350.

Fundamental principles and techniques of general microbiology. Attention will be given to growth, nutrition, inheritance, ultrastructure and physiology of representative types of microorganisms.

610. (CB) Immunology. 5 hours.

Prerequisite: BCH/BIO 310 and BIO/GN 320.

Cellular and humoral immune defense mechanisms are described, including the experimental approaches which led to current concepts of immunobiology and immunochemistry.

614. Advanced Laboratory Methods in Microbiology. 5 hours. Five double lab periods.

Prerequisite: MIB 350; recommended: MIB 409/609.

Instruction in the design and execution of experiments will be provided to acquaint the student with experimental techniques necessary for basic studies on bacteria. Attention will be given to elective culture techniques, growth and enumeration of bacteria, bioassay techniques, effects of irradiation and of chemical mutagens, selection of mutants, isolation of DNA, and enzymatic assay techniques.

621-621L. (EHS/FS) Environmental Microbiology. 5 hours.

See FS 621-621L.

622. Pathogenic Bacteriology. 5 hours.

Prerequisite: MIB 409/609 or 414/614.

Molecular basis of bacterial virulence: identification of virulence factors, genetic regulation of virulence, and the complex interaction between the bacterial pathogen and the human host.

623. Experimental Pathogenic Bacteriology and Immunology. 5 hours. Three lectures and three 2-hour lab periods.

Prerequisite: [MIB 422/622 or MIB/CB 410/610] and MIB 409/609.

Virulence of bacteria pathogenic in humans; dynamic interaction between bacteria and host.

657-657L. (FS) Food Fermentations. 5 hours.

See FS 657.

661-661L. (CSS) Soil Microbiology. 5 hours.

Two lectures and three 2-hour lab periods.

See CSS 661.

662-662L. (MAR) Microbial Ecology. 5 hours.

See MAR 662-662L.

667-667L. (ENT) Insect Pathogens. 5 hours.

See ENT 667-667L.

670-670L. Medical Mycology. 5 hours. Five lectures or recitations and five lab periods.

Prerequisite: MIB 350 or equivalent.

A survey of the yeasts, molds and actinomycetes most likely to be encountered by a medical mycologist in a diagnostic laboratory with special emphasis on the organisms which are pathogenic for man and other animals.

680L. Bacterial Genetics Laboratory. 5 hours.

Four 3-hour lab periods.

Prerequisite: [MIB 350-350L or equivalent] and [BIO/GN 320 or equivalent] and permission of department.

Genetic analysis of bacteria with emphasis on isolating mutants, and mapping, characterizing, and cloning genes.

700M. Master's Research. 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of department.

Research while enrolled for a master's degree under the direction of faculty members.

701-701L. Microbiology for Teachers. 5 hours.

Three lectures and two double lab periods.

Prerequisite: 20 hours of biological science or 10 hours of biological science and 10 hours of chemistry.

Specifically for students who plan to teach in some area of microbiology. Emphasis will be placed on techniques and solutions to problems encountered in the teaching of the classification of microorganisms, their activities, industrial and agricultural applications, and public health aspects. The laboratory will stress innovative techniques for the high school and college microbiology teaching laboratory.

730M. Master's Thesis. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

810. Advanced Computer Research Methods in Microbiology. 5 hours.

Prerequisite: [MIB 480/680 and 409/609 and CHM 395 and BCH/BIO 310] or equivalents.

Scientific reasoning/computer methodological skills in genetics, biochemical, physiological, and ecological research.

815. Molecular Mechanisms of Microbial Pathogenesis. 5 hours.

Prerequisite: MIB 409/609 and 410/610 and 422/622-422L/622L or permission of department.

The molecular events are examined in the interaction between the human host and bacterial and protozoan parasites, including the genetic regulation of microbial virulence factors. The application of gene cloning techniques to the study of microbial pathogenesis will be considered.

816. Seminar in Microbiology. 5 hours.

Prerequisite: MIB 860 and 861 or permission of department.

Techniques involved in effective seminar presentation including preparation of visual aids, logical development of topic, and delivery. Student presents a practice session to the class on an advanced microbiology topic which is videotaped and critiqued, as well as a formal seminar to the department. Required of all microbiology graduate students.

817. Seminar in Prokaryotic Diversity. 2 hours. (Max. 4 hours.)

Research literature on the diversity of bacteria and archaea, including the physiology, genetics, ecology, and taxonomy of these prokaryotic organisms.

820. (MMB) Advanced Pathogenic Microbiology. 5 hours.

See MMB 820.

823. (MMB) Special Topics in Microbial Pathogenesis. 1 hour. (Max. 5 hours.)

See MMB 823.

852. (CB/BCH) Topics in Molecular Genetics and Biochemistry of Parasites. 5 hours.

See CB 852.

860. Physiology of Bacteria. 5 hours.

Prerequisite: MIB 409/609; BCH 801 and 802.

A survey of modern physiological and biochemical relationships and concepts in microorganisms. Emphasis on specialized aspects of intermediary metabolism, macromolecular syntheses, and microbial lipids.

861. Advanced Microbial Metabolism. 5 hours.

Prerequisite: MIB 860 or permission of department.

Examination of the development and current knowledge of microbial physiology. Significant literature of past and present is reviewed and discussed.

862. Advanced Microbial Diversity. 5 hours.

Prerequisite: MIB 860 and 861 or equivalents.

Bacterial diversity focusing on: microbial ecology, prokaryotic cell structure and assembly, host-parasite interactions, prokaryotic developmental cycles, and cell-cell communication.

890. Research Techniques in Microbiology. 5 hours. (Max. 10 hours.)

Prerequisite: Permission of department.

Research techniques in microbiology for graduate students in preparation for their thesis/dissertation projects.

900D. Doctoral Research. 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of department.

Research while enrolled for a doctoral degree under the direction of faculty members.

930D. Doctoral Dissertation. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Music (MUS)

Richard M. Graham, *Head*
Jolene R. Davis, *Graduate Coordinator,*
542-2743
(*Music Building*)

The Master of Music degree is offered in composition, music literature or performance.

Students concentrating in musicology should enroll for the Master of Arts degree.

Students desiring fifth-year certification as teachers of music in the public schools should enroll for the Master of Music Education degree offered in cooperation with the College of Education. The MMed degree also offers a concentration in music therapy for students wishing to qualify as registered music therapists.

Students desiring sixth-year certification as teachers of music in the public schools should enroll for the Specialist in Education program (sixth-year program) offered in cooperation with the College of Education.

The Doctor of Education degree with subject matter concentration in music is offered in cooperation with the College of Education.

The Doctor of Musical Arts degree is offered in performance, composition, choral conducting, or music education.

The Doctor of Philosophy degree is offered in music to provide students with op-

opportunities to pursue the research and academic aspects of the discipline at the highest scholarly level.

Some music education courses are listed as EMU courses in the College of Education section of this bulletin.

600. Special Problems in Music. 1-10 hours. (Max. 10 hours.) (A/S Grading)

Selected students are permitted to secure specialized training appropriate to the needs of the individual. Projects may involve the study and analysis of music and problems related to music, as approved by the department.

601. Introduction to Graduate Study in Music Education. 3 hours.

Prerequisite: Students must hold the bachelor's degree in music education.

This course examines social foundations of American music education, music education bibliography, the role of research in music education, and current practices and issues in music education.

605. The Music Business. 3 hours.

A structural analysis of the business aspect of pop/rock and classical music, including performance, recording, publishing, funding, retailing, education, and management.

620. Ancient and Medieval Music. 5 hours.

A survey of music from the birth of Christianity to ca. 1400, with an introduction to the place of music in Greek and Roman societies. (Offered alternate years.)

621. Music in the Renaissance Period. 5 hours.

A music history and literature course covering the Renaissance period, 1400-1600. (Offered in alternate years.)

622. Music in the Baroque Period. 5 hours.

A study of musical styles and forms from Monteverdi through Bach and Handel. (Offered alternate years.)

623. Music in the Classic Period. 5 hours.

A study of chamber, orchestral, keyboard, and operatic works from the middle and late 18th Century. (Offered alternate years.)

624. Music in the Romantic Period. 5 hours.

An intensive study of the Romantic period; emphasis on the development of the song, symphony, chamber music, and opera. (Offered alternate years.)

625. Women and Music. 5 hours.

Roles of women in music, including the history of women musicians in western art music, women musicians in non-western cultures, women in popular music, and gender issues in music.

631. Song Literature. 3 hours.

An introduction to the major styles of song composition from the time of the troubadours to the present.

636. Opera Literature. 3 hours.

The study of representative operas from the Baroque era to the 20th Century.

640. Non-Western Music. 5 hours.

An introduction to the music of non-European cultures, including those of the Far East, Near East, and Africa.

641. Bibliography. 5 hours.

An introduction to the existing body of materials, including music and books on music, which serves as the basis for musical research, and to the procedures and techniques used in research.

655. Advanced Music History. 5 hours.

Special studies in history and literature of music.

658. Wind Instrument Literature. 3 hours.

A survey of the solo, sonata, and ensemble music composed for wind instruments, from the Baroque period to the present.

659. Brass Instrument Literature. 3 hours.

Solo and chamber music for horn, trumpet, cornet, trombone, euphonium, baritone, tuba, and sousaphone; band and orchestral repertoire and major representative materials for the brass family of instruments.

662. Modern Music. 5 hours.

A literature course illustrating modern trends in music from Schoenberg, Stravinsky, Hindemith, Bartok, and others.

670. Form and Analysis. 5 hours.

Prerequisite: MUS 400 or equivalent. Harmonic and polyphonic forms analyzed. Special stress given sonata form. Students encouraged to write originally in forms thus analyzed.

671. 16th Century Counterpoint. 5 hours.

Prerequisite: MUS 310. The contrapuntal style and techniques of the 16th Century; acquaintance with species counterpoint.

675. 18th Century Counterpoint. 5 hours.

Prerequisite: MUS 310. Late Baroque contrapuntal techniques and styles.

679. Introduction to Electronic Music. 3 hours.

Prerequisite: MUS 309. An introductory course in electronic music systems, composition, and literature.

691. Chamber Music Ensemble. 1-6 hours. (Max. 24 hours.)

Open to students who can qualify in keyboard, string, wind instruments, or percussion.

Music

691K. Contemporary Chamber Ensemble. 1 hour. (Max. 24 hours.)

Concentration on 20th Century literature for small ensembles, including aleatoric and electronic literature. Open to students who can qualify.

700M. Master's Research. 1-15 hours. (Max. 30 hours.)

Prerequisite: Permission of school.

Research while enrolled for a master's degree under the direction of faculty members.

703. Research Methods in Music. 5 hours.

A study of basic concepts, types and techniques of research as they apply to music. Students plan and conduct individual research projects.

710. Advanced Theory. 3 hours.

Prerequisite: MUS 400 or equivalent.

A survey of harmonic and contrapuntal resources, with emphasis upon aural and visual analysis.

711. Pedagogy of Music Theory. 3 hours.

Prerequisite: MUS 510/710 and 470/670.

A survey of current philosophies, techniques and materials used in the instruction of music theory.

712. Advanced Techniques for Teaching Music in the Elementary School. 3 hours.

Prerequisite: MUS 312.

Course includes: 1) formulation of behavioral objectives for elementary school music; 2) new materials and methods for teaching elementary music; 3) the conceptual structure of music as it relates to the activities of the elementary music class; 4) problems of supervision; and 5) evaluation of student progress.

715. Early Childhood Musical Development. 5 hours.

Prerequisite: For majors in music education, early childhood education, elementary education or child development. Formal music training is not required, but general knowledge of the fundamentals of music (pitch, rhythm, timbre, expression) is expected.

A study of the musical development of children from birth through age eight years. This course examines research dealing with auditory perception, auditory discrimination, responses of children to music, modes of learning music, and children's acquisition of musical performance skills and understandings.

726. Marching Band Techniques and Methods. 3 hours.

Methods and techniques for organizing and training marching bands. Planning music, drills, formations and shows.

727. Computer-Assisted Instruction in Music. 3 hours.

Prerequisite: MUS 212 or equivalent.

Provides general background in computer-assisted instruction as a continuation of pedagogical techniques in music. Also provides practical experience in designing, programming, and testing CAI music lessons on the University of Georgia's CYBER 6400 computer or on micro-computers such as the PET 2001-8 or Apple II.

730. General Music in the Secondary School. 3 hours.

Prerequisite: MUS 313.

Experiences for students that will better equip them to organize and carry out courses of study in music for general students at secondary levels (grades 6 or 7 through 12).

730M. Master's Thesis. 1-15 hours. (Max. 30 hours.)

Prerequisite: Permission of school.

732. Problems in Instrumental Music Education. 3 hours.

Prerequisite: MUS 312 and 313.

Study of methods and techniques used for development of the instrumental music program beginning in elementary and continuing through secondary school; diagnosis of problems relating to strings, woodwinds, brasses, and percussion.

733. Music Administration and Supervision. 5 hours.

Prerequisite: Undergraduate requirements in education, MUS 312 and 313.

Administrative functions, procedures, and philosophies as they affect music instruction in schools and colleges.

734. Choral Music Material. 3 hours.

Prerequisite: MUS 312 and 313.

Study and evaluation of music literature available for use in public school at all levels of instruction; research in various media and schools of composition which can be adapted for school use.

735. Instrumental Music Material. 3 hours.

Prerequisite: MUS 312 and 313.

Evaluation of materials available at all levels of instruction for band, orchestra and chamber music; research in materials of various media and schools of composition which can be adapted for school use.

738. Advanced Conducting. 3 hours.

Prerequisite: MUS 362, 363, or 364.

An intensive study of choral and instrumental conducting methods and techniques with application in laboratory sessions.

740. Principles of Music Therapy I. 3 hours.

A study of music as human behavior, and its use with the handicapped and those suffering behavioral disorders.

741. Principles of Music Therapy II. 3 hours.

Prerequisite: MUS 540/740.

A study of the functions of the music therapist with emphasis on the use of music in a therapeutic environment.

744. The Influence of Music on Behavior. 5 hours.

Prerequisite: PSY 423.

A study of the various physiological effects of music. The place of functional music in music education. Investigation of effective media and musical patterns. The relation of music to health. Music in industry.

745. Clinical Experience. 3 hours.

Prerequisite: Completion of junior year in Bachelor of Music with major in music therapy.

Three months' work as a general aide in an approved psychiatric hospital for practical clinical experience.

746. Music in Recreation. 3 hours.

Experiences in elementary and secondary methods of teaching music from the perspective of social and recreational instruments.

747. Music for Exceptional Children. 5 hours.

Prerequisite: MUS 201, or 303, or SPE 300 or 700.

This course is designed to prepare teachers of exceptional children to teach music in special classrooms or in settings where exceptional children are integrated into the regular music classes.

751. Instrumental Techniques. 2 hours. (Max. 6 hours.)

An advanced study of the performance and teaching techniques of wind, string, and percussion instruments.

752. Advanced Vocal Pedagogy. 3 hours.

Prerequisite: MUS 345P or equivalent or graduate standing in music.

A comprehensive study of the various methods of training and developing the singing voice in the private studio, the voice class, and the choral ensemble.

753A. Piano Pedagogy I. 3 hours.

Prerequisite: Permission of department.

Principles of piano pedagogy. Survey of current and past piano teaching methodologies and materials. Review and consideration of major learning theories.

753B. Piano Pedagogy II. 3 hours.

Prerequisite: Permission of department.

Principles of piano pedagogy. Elementary through early intermediate piano repertoire exclusive of method books, including teaching strategies for the same. Consideration of cognitive and cognitive-motor interface issues, and learning styles and musical talent issues.

753C. Piano Pedagogy III. 3 hours.

Prerequisite: Permission of department.

Principles of piano pedagogy. Emphasis on procedures and skills inherent in the art of teaching. Survey of intermediate through early advanced piano repertoire. Issues of motivation and related issues of personality/learning styles addressed.

762. Jazz Piano Improvisation Class. 3 hours.

Prerequisite: MUS 246F.

Application of skills and techniques in keyboard jazz playing based upon a knowledge of modern-popular harmonic and notational practices.

781. Applied Music. 1 hour. (Max. 30 hours.)

One 25-minute lesson a week.

Applied music in secondary performance media for graduate students in music education.

782. Applied Music. 2 hours. (Max. 60 hours.)

Applied music for music education graduate students in their field of performance concentration.

783. Applied Music. 3 hours. (Max. 60 hours.)

Applied music for graduate students in their field of performance concentration.

785. Applied Music. 5 hours. (Max. 60 hours.)

Primarily for the major performance medium of music students in the MM program. Others by permission of department.

787. University Symphony Orchestra. 1 hour. (Max. 24 hours.)

Prerequisite: Permission of department after audition.

Intensive study and performance of symphonic compositions with concentration on advanced scores of suites, overtures, concerti, and symphonies.

789. Concert Choir. 1 hour. (Max. 24 hours.)

Prerequisite: Permission of department after audition which evaluates sight-singing ability, tonal memory, vocal range and quality, and intonation. Study and performance of choral literature selected from the major periods of music history.

790. Symphonic Wind Ensemble. 1 hour. (Max. 24 hours.)

Prerequisite: Admission by audition.

Mixed woodwind-brass-percussion ensemble for the study and performance of wind chamber compositions with concentration on advanced scores, including a substantial emphasis on contemporary music. Professional level experience. Four hours per week.

791. Collegium Musicum. 1 hour. (Max. 24 hours.)

A study of the inter-relationship of music history, theory, and performance.

792. Chamber Music Ensemble. 2 hours. (Max. 8 hours.)

One hour a week. Preparation of representative works with faculty members and qualified students.

Music

793. Chamber Music Ensemble. 3 hours. (Max. 12 hours.)

One hour a week. Preparation of representative works with faculty members and qualified students; to include public recital.

800. Practicum in Music. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of school.

Supervised professional work experience with an educational institution, musical organization, or arts agency.

811. Analysis: Post-Romantic Music. 5 hours. Prerequisite: MUS 470/670 and 510/710.

The study of chromatic harmony, modal harmony, and the stylistic characteristics of selected masterworks written during the late 19th and 20th Centuries. Includes the composition of short musical exercises in representative styles.

812. Analysis: Contemporary Music. 5 hours.

Prerequisite: MUS 470/670 and 510/710.

An examination of music and theoretical concepts since 1920. Emphasis will be placed upon scalar, atonal-serial, and free atonal methodology in selected works.

820. Music in Higher Education. 4 hours.

Development of understanding relating to the history and development of music in higher education in the United States and the mission, function, and operation of music units within a college or university setting.

821. Music Education Seminar. 5 hours.

Prerequisite: Music 533/733.

A study of basic principles and current thought in music education.

830. Special Studies in Keyboard Literature. 3 hours. (Max. 12 hours.)

Prerequisite: MUS 430/630 or permission of school.

Intensive study of the keyboard works of a selected composer, period, genre, or national school.

851. Pedagogy of Music. 3 hours.

Prerequisite: Graduate standing in music.

The course will focus on principles and practices of music instruction: learning theory, curriculum design, and systems of evaluation.

860. Seminar in Music Theory. 5 hours.

Prerequisite: MUS 470/670 and 510/710.

A study of theoretical concepts from all periods of Western music.

864. Seminar in Choral Literature. 5 hours. (Max. 10 hours.)

Prerequisite: Graduate standing in music.

A study of selected choral works in Western music encompassing their historical setting as well as practical problems involved in their performance.

867. Special Studies of Composers. 5 hours. (Max. 40 hours.)

An intensive study of the works of selected composers.

868. Chamber Music Literature. 5 hours.

The study of the important chamber music works from the Italian trio sonata to Bartok. Emphasis on study and analysis of major works.

869. Performance Practices. 5 hours.

Prerequisite: Permission of school.

A survey of the changing approaches found in the performance of music in different periods.

871. American Music. 5 hours.

The development of music in North America from 1620 to the present.

874. Psychology of Music. 5 hours.

A survey of experimental findings and research methods in the psychology of music.

880. The Symphony after Beethoven. 5 hours.

Prerequisite: 10 hours of senior division music literature courses.

Historical development of the symphony and the orchestra.

881. Applied Music. 1 hour. (Max. 10 hours.)

Prerequisite: Permission of school after audition.

Applied music in secondary performance media for graduate students pursuing doctoral degrees in music.

882. Applied Music. 2 hours. (Max. 20 hours.)

Prerequisite: Permission of school.

Applied music study in primary performance media for graduate students pursuing doctoral degrees in music.

883. Applied Music. 3 hours. (Max. 30 hours.)

Prerequisite: Permission of school.

Applied music study in primary performance media for graduate students pursuing doctoral degrees in music.

885. Applied Music. 5 hours. (Max. 60 hours.)

Fifty minutes of private instruction and a one-hour seminar each week. Primarily for the major performance medium of post-master's music students.

886. Lecture-Recital. 5 hours. (Max. 15 hours.)

Prerequisite: Permission of school.

A public recital (1-hour duration) involving an artistic performance and a scholarly discussion of selected music literature.

900D. Doctoral Research. 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of school.

Research while enrolled for a doctoral degree under the direction of faculty members.

921. Music Problems. 1-20 hours. (Max. 20 hours.)

Prerequisite: Permission of school.

Functional study of a topic or problem significantly related to the student's professional goal.

930D. Doctoral Dissertation. 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of department.

Parasitology (PAR)

Annie K. Prestwood, *Acting Head*
Edward L. Roberson, *Graduate
Coordinator, 542-4442*
(*Veterinary Medicine Building*)

Graduate work leading to the MS and PhD degrees in parasitology is offered by the department. A wide choice of potential student dissertation areas are available and include studies on the host specificity, morphogenesis, chemotherapy, immunology, and molecular biology of parasitic protozoa and helminths as well as various aspects of wildlife diseases.

Applicants for graduate study are accepted to begin preferably in the fall quarter. Prospective students who wish to work toward an advanced degree in parasitology are required to have either a professional degree in a medical science or a bachelor's degree in biological science.

Prospective students desiring financial assistance should contact the department graduate coordinator well in advance of the time of entry into the Graduate School.

The research skills requirement for the PhD degree can be satisfied by taking either a statistics sequence (STA 621-622) or a computer science sequence (CS 700-733 or CS 700-702-614) or by demonstrating a reading knowledge of a foreign language.

700M. Master's Research. 1-15 hours. (Max. 75 hours.)

Prerequisite: Permission of department.

Research while enrolled for a master's degree under the direction of faculty members.

730M. Master's Thesis. 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of department.

803. Helminthology. 5 hours. One lecture and four 2-hour lab periods.

Prerequisite: Permission of department.

Study of the morphology, life histories, classification, and parasitic relationship of the helminths.

805. Problems in Parasitology. 1-5 hours. (Max. 25 hours.)

Prerequisite: Permission of department.

Detailed studies will be made of parasitic diseases of both birds and mammals. The nature of the studies will be determined somewhat by the student's major field of interest.

806. Techniques In Experimental Parasitology. 5 hours. Five 2-hour lab periods.

Prerequisite: PAR 520 and 521 or equivalent.

Techniques necessary for in vivo and/or in vitro cultivation and maintenance of the life cycle of selected helminth, arthropod, and protozoan parasites will be employed.

850. (FRS) Diseases of Wildlife. 5 hours.

Prerequisite: Permission of department.

The course is designed to give fundamental instruction in wildlife diseases. Emphasis will be placed on gross anatomy, necropsy procedures, gross and microscopic alterations of diseased tissues produced by bacterial, mycotic and viral agents.

851. (FRS) Diseases of Wildlife. 5 hours.

Prerequisite: PAR 850.

Major emphasis will be placed on fundamental concepts of toxicologic, nutritional and parasitologic disease as they relate to public health, diseases of livestock and game management.

854. (CB) Parasitic Protozoa. 5 hours.

Prerequisite: Permission of department.

Experimental study of the morphology, life histories, classification and parasitic relationships of protozoan parasites of man and the lower animals.

856. (CB/PS) Seminar in Parasitology. 1 hour. (Max. 6 hours.) (A/S Grading)

See CB 856.

900D. Doctoral Research. 1-15 hours. (Max. 75 hours.)

Prerequisite: Permission of department.

Research while enrolled for a doctoral degree under the direction of faculty members.

930D. Doctoral Dissertation. 1-15 hours. (Max. 45 hours.)

Prerequisite: Permission of department.

Pathology (VPP)

Corrie C. Brown, *Head*

Denise I. Bounous, *Graduate Coordinator*,
542-5846

(*Veterinary Medicine Building*)

Graduate study leading to the MS or PhD degrees in veterinary pathology with emphasis in either anatomic or clinical pathology is offered by the department. Dissertation opportunities exist in the areas of transforming growth factors, leukocyte pathobiology, infectious diseases, cellular immunopathobiology, wildlife diseases, avian pathology including diseases of exotic species, and pathology of renal diseases.

Applicants for graduate study are accepted to begin preferably in the fall quarter. Prospective students usually have the DVM degree.

700M. Master's Research. 1-15 hours. (Max. 40 hours.)

Prerequisite: Permission of department.

Research while enrolled for a master's degree under the direction of faculty members.

701. Necropsy Practicum. 1-5 hours. (Max. 10 hours.)

Prerequisite: Basic course(s) in pathology.

Provides instruction in the necropsy diagnosis of diseases of animals. Studies are made of the gross and microscopic alterations of tissues resulting from disease.

702. Biopsy Practicum. 1-5 hours. (Max. 10 hours.)

Prerequisite: Basic course(s) in microscopic pathology.

Provides instruction in the diagnosis of diseases of animals by biopsy techniques. Studies are made of the microscopic alterations of tissue submitted for antemortem diagnosis.

703. Cytology Practicum. 1-5 hours. (Max. 10 hours.)

Prerequisite: Basic course(s) in pathology.

Provides instruction in the diagnosis of diseases of animals by cytologic techniques. Studies are made of cytologic preparations prepared from fluids and tissues submitted for antemortem diagnosis.

720-720L. General Animal Pathology. 5.5 hours.

Prerequisite: Permission of department.

An introduction to pathology which considers the dynamic responses of the animal body to disease.

730M. Master's Thesis. 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of department.

800. Pathology Rounds. 1-2 hours. (Max. 6 hours.)

Prerequisite: Basic course(s) in pathology.

The presentation of complete case studies in weekly clinical pathology and histopathology rounds.

802. Cellular Pathology. 5 hours.

Prerequisite: Basic course(s) in pathology.

A detailed study of the response of the body to disease. Emphasis is placed on fine structural and molecular changes and includes mechanisms of cellular injury, carcinogenesis and mechanisms of neoplasia and the inflammatory process.

805. Problems in Veterinary Pathology. 2-5 hours. (Max. 25 hours.)

Prerequisite: Basic course(s) in pathology.

Detailed studies will be made of disease problems of both birds and mammals. The nature of the studies will be determined somewhat by the student's major field of interest.

807-807L. Veterinary Hematology. 5 hours.

A basic study dealing with the morphology, physiology and pathology of the blood and blood-forming tissues. The laboratory will emphasize the morphology of normal and abnormal blood and bone marrow of domestic animals.

810. Microscopic Pathology. 5 hours.

Prerequisite: Basic course(s) in pathology.

Studies of the basic alterations produced as a result of disease in the various body systems of domestic animals.

812. Clinical Laboratory Medicine. 2-5 hours. (Max. 15 hours.)

Prerequisite: Basic course(s) in clinical pathology.

A study of the diagnosis of disease by laboratory methods. Emphasis will be placed on the derivation and interpretation of laboratory data, and the microscopic examination of blood, bone marrow, urine, and cytologic preparations from various tissues.

813. Diagnostic Oncology. 5 hours.

Prerequisite: VPP 810 or permission of department.

Study of the microscopic features of neoplasms of domestic animals. Emphasis is placed on the identification and characterization of the various tumors.

814. Seminar in Veterinary Pathology. 1-3 hours. (Max. 3 hours.)

Prerequisite: Graduate standing in veterinary medicine or a closely allied field.

Graduate students and staff members will regularly participate in the review and discussion of basic problems and diseases currently or potentially important in the field of veterinary medicine.

822. (AM) Microscopic Pathology of Poultry. 5 hours.

Prerequisite: VPP 520/720-520L/720L or equivalent.

Detailed microscope studies will be made of avian tissues and the effects of specific diseases and their processes on them. A working knowledge of tissue processing and differential staining will be included.

832. Pathology of Laboratory Animals. 2-5 hours.

Prerequisite: Basic course(s) in pathology.

Detailed studies of the etiology, tissue alterations, both macroscopic and microscopic, of diseases of the common laboratory animals.

900D. Doctoral Research. 1-15 hours. (Max. 60 hours.)

Prerequisite: Permission of department.

Research while enrolled for a doctoral degree under the direction of faculty members.

930D. Doctoral Dissertation. 1-15 hours.

(Max. 50 hours.)

Prerequisite: Permission of department.

Pharmacy (PHR)

Stuart Feldman, *Dean*

Medicinal Chemistry

James T. Stewart, *Head*

J. Warren Beach, *Graduate Coordinator,*
542-4410

Pharmaceutics

F. Douglas Boudinot, *Head*

Anthony C. Capomacchia, *Graduate*
Coordinator, 542-7235

Pharmacology and Toxicology

James V. Bruckner, *Head*

Thomas G. Reigle, *Graduate*
Coordinator, 542-7410

Pharmacy Care Administration

Jeffrey A. Kotzan, *Head*

Matthew Perri, *Graduate Coordinator,*
542-7400

(*Pharmacy Building*)

Doctoral language requirement: one foreign language.

Graduate work leading to the MS and PhD degrees may be pursued in the areas of the pharmaceutical sciences.

Graduate studies in pharmaceutics explore and define the physical and chemical properties of pharmaceutical systems, and the mechanisms by which medication from these systems may be made available for utilization by the body. Areas of specialization include pharmaceutics, pharmacokinetics, biopharmaceutics, and industrial pharmacy. The multidisciplinary approach is used to solve research problems in pharmacokinetics, stability kinetics, dissolution phenomena, drug analysis, product development and dosage form design.

Pharmacology is the study of the action of chemicals on living organisms, the effects induced and their therapeutic applications. As a scientific discipline, it is based on the biological sciences with particular emphasis on physiology and biochemistry. Specific programs are available in neuropharmacology, behavioral pharmacology, biochemical pharmacology, and cardiovascular pharmacology.

Toxicology is the scientific discipline which deals with the injurious effects of chemicals on humans and other living organisms. Toxicology is a broad, multi-disciplinary field requiring expertise in a number of biological sciences, including biochemistry, physiology, pharmacology, cell biology, pathology and biostatistics. Toxicology is rapidly expanding in scope and prominence, due to the increasing use/misuse of chemicals and to the increased recognition of hazards posed by chemicals. Students may choose to work in ongoing research programs involving studies of: drug/chemical interactions; relative pharmacokinetics and toxicity of inhaled and ingested hydrocarbons; mechanisms of cytotoxic actions of halogenated organics; biochemical role of calcium in cellular injury by chemicals; influence of nutrition of chemical metabolism and toxicity; role of diet in chemically induced cancers; influence of lead exposure and drugs on harmful effects of noise.

Medicinal chemistry is unique among the specialized areas of chemistry, in that it requires a significant background in the biological sciences as well as a thorough under-

Pharmacy

standing of chemistry. Areas of specialization are the synthesis of new compounds of medicinal interest, *in vitro* and *in vivo* studies of drug metabolism, and analytical studies of drugs in dosage forms and biological samples such as plasma or urine.

Pharmacy care administration is a study of the economic, social, behavioral, and political aspects of pharmaceutical services. It is an interdisciplinary program which may contain elective concentration of courses in business administration, psychology, statistics, political science, and other disciplines which impact on ethical drug issues. The program prepares the student to address the complex socio-political problems relating to ethical drug consumption, manufacturing, distribution, and payment mechanisms.

For any graduate course in the area of pharmacy the prerequisites are two senior division courses in pharmacy or related subjects. Graduate students in pharmaceutical sciences need not have a pharmacy degree but will be required to have an equivalent background in the physical or biological sciences.

Unless otherwise specified, all laboratory periods are three hours.

606. Pharmaceutics I. 5 hours.

Prerequisite: Permission of department.

The general consideration of the underlying principles of dosage form design, compounding, and technology. Laboratory work involves the preparation and evaluation of the various dosage forms and the dispensing of compounded prescriptions.

607. Pharmaceutics II. 5 hours.

Prerequisite: PHR 606.

The general consideration of the underlying principles of dosage form design, compounding, and technology. Laboratory work involves the preparation and evaluation of the various dosage forms and the dispensing of compounded prescriptions.

633, 634, 635. Pharmacology I, II, III. 4, 3, 4 hours respectively.

Prerequisite for 633: PHR 350.

Prerequisite for 634: PHR 433/633.

Prerequisite for 635: PHR 434/634.

Corequisite for 635: PHR 445/645.

A study of the pharmacologic action, therapeutic application, and toxicology of drugs in current use. The drug categories included in PHR 433/633 are antihistamines, diuretics, endocrine hormones and related drugs. Categories included in

PHR 434/634 are autonomic, anticoagulant, and cardiovascular drugs. PHR 435/635 is devoted to central nervous system active drugs.

649. Human Physiology I. 5 hours.

Prerequisite: BIO 102-102L, CHM 241-241L or permission of department.

Not open to students with credit for PHR 349. Functions of the human nervous, neuromuscular, and reproductive systems in health and in major disease states.

650. Human Physiology II. 5 hours. Four lectures and one discussion period.

Prerequisite: BIO 102-102L, CHM 241-241L or permission of department.

Not open to students with credit for PHR 350. Function of the human cardiovascular, respiratory, renal, endocrine, and digestive systems in health and in major disease states.

655. Essentials of Animals in Biomedical Research. 3 hours.

Three two-hour lab periods.

Prerequisite: Enrolled as a graduate student or permission of department.

Humane methods of animal maintenance and experimentation; the testing methods which minimize animal distress; use of anesthetics, analgesics, and tranquilizers for commonly used lab species; methods for reporting deficiencies in animal care; laws pertaining to the use of animals in biomedical research.

665. Coronary Heart Disease. 3-5 hours.

Prerequisite: [PHR 350 or 650] or permission of department.

The pathophysiology of coronary heart disease; lipid triad and other risks for coronary heart disease will be studied and case studies reviewed. The vascular biology of the coronary artery and the effects of pharmacological, non-pharmacological and surgical treatments for coronary artery disease will be studied.

691. (VPH) Introductory Toxicology. 5 hours.

Prerequisite: BCH 402/602 or 801 and PHR 349 and 350 or VPH 609-609L and 610-610L or equivalent or permission of department.

An overview of basic principles of toxicology, including principles of hazard and safety evaluation, dose-response relationships, pharmacokinetics and metabolism of chemicals, basic mechanisms of cellular injury, factors influencing toxicity, specialty areas and governmental regulatory policies.

700M. Master's Research. 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of department.

Research while enrolled for a master's degree under the direction of faculty members.

713. Advanced Medicinal Chemistry I. 4 hours.
Prerequisite: BA or BS degree in biology, chemistry, or pharmacy, or an organic chemistry sequence.

This course relates the fundamental principles of medicinal chemistry to the development of new therapeutic agents.

714. Advanced Medicinal Chemistry II. 4 hours.
Prerequisite: PHR 713 and permission of department.

The application of biochemical, pharmacological, and medicinal chemical aspects of selected classes of pharmacodynamic drugs is presented. Historical development, pharmacological assay techniques, and the current state of scientific exploitation of each class will be covered.

715. Advanced Medicinal Chemistry III. 4 hours.
Prerequisite: PHR 714 and permission of department.

This course is a study of the discovery, design and synthesis of chemical agents used to treat and cure infectious diseases and cancer. It includes correlations of chemical structure with biological activity, mechanism of action, chemical stability, biochemical transport and identification of biological metabolites.

720. Drug Development and Regulation. 4 hours.

Prerequisite: Graduate student standing in the College of Pharmacy or pharmacy doctoral student.

Processes involved in drug discovery, development, and regulation. Methods of new drug characterization, preclinical and clinical testing, laboratory and manufacturing practice standards, governmental regulations applicable to the drug approval process for marketing, and postmarketing surveillance.

721. Special Topics in Pharmacy. 3-5 hours. (Max. 20 hours.)

A study of specialized pharmaceutical systems, processes, and techniques, including assignment of current literature and student presentations.

722. Industrial Pharmacy I. 3-5 hours. One lecture and 6 to 9 lab hours weekly.

Prerequisite: PHR 407/607 or permission of department.

Lectures and lab are concerned with the formulation and production of powders, capsules, compressed tablets and coated tablets. Production equipment and quality control procedures and problems are also studied.

723. Industrial Pharmacy II. 3-5 hours. Variable lecture and laboratory hours weekly.

Prerequisite: PHR 407/607 or permission of department.

To acquaint students with specialized pharmaceutical systems, processes and control procedures involved with liquid, semi-solid, and aerosol dosage forms.

725. Clinical Pharmacokinetics. 4 hours.

Prerequisite: PHR 407/607 and permission of department.

Clinical pharmacokinetics deals with the concepts and techniques of the kinetics of absorption, distribution and elimination of drugs as applied to patient care.

727. Ethical Issues in Research. 3 hours.

Prerequisite: Permission of department.

The ethics of research in human subjects and animals; fraud, scientific misconduct and conflicts of interest.

730M. Master's Thesis. 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of department.

800. (VPH) Cardiovascular Physiology. 3 hours. See VPH 800.

802. Advanced Topics in Pharmaceutics. 1 hour. (Max. 12 hours.)

Methods of utilizing the literature relating to pharmaceutics and discussion of recent developments in the field.

803. Pharmacy Seminar. 1 hour. (Max. 5 hours.)

Semi-formal meetings for discussions of research and new developments in the field.

804. Pharmaceutical Control and Analysis I. 5 hours.

Prerequisite: Permission of department.

Lectures and laboratory instruction are devoted to the separation, identification and analysis of drugs by thin-layer, gas and high-performance liquid chromatographic methods.

805. Pharmaceutical Control and Analysis II. 5 hours.

Prerequisite: Permission of department.

Lectures and laboratory instruction are devoted to the identification and analysis of drugs by proton magnetic resonance, infra-red and ultra-violet spectroscopic analysis.

806. Pharmaceutical Control and Analysis III. 5 hours.

Prerequisite: Permission of department.

Lectures and laboratory instruction are devoted to the identification and analysis of drugs by mass spectrometry, fluorescence, phosphorescence and atomic absorption analysis.

807. Pharmaceutical Control and Analysis IV. 5 hours.

Prerequisite: Permission of department.

Pharmacy

Lectures and laboratory instruction are devoted to the separation, identification and analysis of drugs and drug metabolites in biological samples.

809A. Topics in Medicinal Chemistry. 4 hours.
Prerequisite: PHR 715 or permission of department.

A detailed study of the correlation of chemical structure with biological activity will be presented with special emphasis on the relation of physiochemical properties to biological response.

816. Organic Chemistry of Synthetic Medicinal Agents. 3 hours.

Prerequisite: CHM 430/630 and permission of department.

Preparation and physiochemical properties of organic medicinal agents of synthetic origin.

823, 824. Advanced Physical Pharmacy. 5 hours each.

Prerequisite for 823: PHR 407/607 or permission of department.

Discussion of advanced physical chemical methods as they apply to pharmaceutical problems and phenomena.

825. Advanced Physical Pharmacy. 5 hours.

Prerequisite: PHR 823 and 824.

Advanced physical chemical methods as they apply to pharmaceutical sciences and drug delivery systems.

826. Pharmacokinetics I. 5 hours.

Prerequisite: PHR 407/607 or permission of department.

A study of the principles of kinetics of drug absorption, distribution and elimination, with emphasis on the design and evaluation of mathematical models.

831. Luminescence Spectroscopy in Drug Analysis. 5 hours.

Prerequisite: Permission of department.

Theory, methods and instrumentation of chemiluminescence, fluorescence and phosphorescence spectroscopy applied to the trace/micro analysis of drugs and chemicals.

836. Pharmacokinetics II. 5 hours.

Prerequisite: PHR 826.

Discussion of advanced pharmacokinetic methods with emphasis on nonlinear pharmacokinetics, model independent pharmacokinetics, protein binding and drug-receptor interactions, computer methodology, physiologic pharmacokinetics and pharmacodynamics.

842. Cardiovascular Pharmacology. 5 hours.

Prerequisite: PHR 434/634 or permission of department.

A study of physiological control mechanisms of the mammalian cardiovascular system and how defects may lead to clinically identifiable disease

states. Experimental approaches are evaluated and the actions of pharmacologically active agents are discussed.

843. Advanced Neuropharmacology. 5 hours.

Prerequisite: PHR 435/635 or permission of department.

A study of the behavioral and neurochemical aspects of drug action in the central nervous system.

846. (VPH) Molecular Pharmacology. 5 hours.

See VPH 846.

853. Research in Pharmacy Care Administration. 5 hours.

Prerequisite: STA 421/621.

An intensive study of research and methods of research in pharmacy care administration. The course includes the design, execution, and statistical analysis of experiments relating to physicians, pharmacists or drug consumers.

860. Topics in Pharmaceutical Marketing. 4 hours.

Prerequisite: MBA student status.

The course examines the structure of the pharmaceutical industry, the environment in which it operates, and special problems it faces in marketing its products to prescribers, pharmacists, health care institutions, and consumers.

861. Health Care Systems. 4 hours.

Prerequisite: MBA student status.

A comprehensive examination of the United States Health Care System, the distribution of health care facilities, and the various programs both public and private, designed to improve the quality and distribution of health care services.

862. Management Methods in Pharmacy. 4 hours.

Prerequisite: PHR 860 or MBA student status.

An intensive study of analytical methods peculiar to data sources and management problems in the pharmaceutical industry. Interpretation of pharmaceutical data bases, and report preparation are integral portions of the course. For MBA and pharmacy graduate students.

891A. (VPH) Organ Systems Toxicology I. 5 hours.

Not open to students with credit in PHR/VPH/PS 891.

Prerequisite: PHR 649 and 650 or VPH 609-609L and 610-610L or equivalent or PHR 433/633, 434/634, and 435/635 or equivalent and BCH 801 and 802 or equivalent or permission of department.

A study of mechanisms by which toxic chemicals alter biochemical and physiological processes in the following organ systems of the body: blood, immune system, respiratory system, cardiovascular system, and nervous system.

891B. (VPH) Organ Systems Toxicology II. 5 hours.

Not open to students with credit in PHR/VP/PS 891.

Prerequisite: PHR 649 and 650 or VPH 609-609L and 610-610L or equivalent or PHR 433/633, 434/634, and 435/635 or equivalent and BCH 801 and 802 or equivalent or permission of department. A study of mechanisms by which toxic chemicals alter biochemical and physiological systems in the following organ systems of the body: liver, kidney, reproductive system, and skin and eyes. The carcinogenic and mutagenic activity of chemicals will also be described.

892. (VPH) Toxicology of Agricultural and Industrial Chemicals in the Environment. 5 hours.

Prerequisite: PHR/VP/PH 491/691 or permission of department.

A study of the dynamics and toxicity of some of the major agricultural and industrial contaminants of the environment. The focus is on sources, properties, toxicodynamics, health and environmental hazards, methods of analysis and contamination control measures.

900D. Doctoral Research. 1-15 hours. (Max. 100 hours.)

Prerequisite: Permission of department. Research while enrolled for a doctoral degree under the direction of faculty members.

930D. Doctoral Dissertation. 1-15 hours.

(Max. 20 hours.)
Prerequisite: Permission of department.

Philosophy (PHY)

Donald E. Nute, Jr., *Head*
Charles B. Cross, *Graduate*
Coordinator, 542-2653
(*Peabody Hall*)

The department offers a comprehensive program, covering the major areas of philosophical study, leading to the MA and the PhD degrees. Various approaches, including historical studies, linguistic analysis, logical analysis, and phenomenology are represented by the faculty. Though the department allows students to pursue their own interests in diverse areas, our special strengths lie in metaphysics, moral and political philosophy, and theory of knowledge and philosophy of mind. The graduate program is designed to give broad and thorough

training in these basic areas of philosophy, as well as the opportunity for special study in the area of specialization of interest to the student. Admission to the PhD program presupposes a thorough background in the history of philosophy. Restricted admission encourages close student-faculty relationships. Preparation for teaching is considered an integral part of the PhD program.

For the MA degree, reading knowledge of one foreign language is required; for the PhD, one foreign language is required and a second language and/or knowledge of areas cognate to philosophy may be required.

600. Plato. 5 hours.

Prerequisite: PHY 300 or equivalent.
A course in the major writings of Plato.

601. Aristotle. 5 hours.

Prerequisite: PHY 300 or equivalent.
A course in the major writings of Aristotle.

604. Classical American Philosophers. 5 hours.

Prerequisite: At least one course in philosophy other than 110.

A study of the major writings of C.S. Peirce, William James, and John Dewey and their influence on the development of contemporary philosophy.

605. Ethical Theory. 5 hours.

Prerequisite: PHY 205, two other courses in philosophy, or permission of department.

A study of the nature and justification of fundamental ethical concepts and moral principles.

606. Social and Political Philosophy. 5 hours.

Prerequisite: At least one course in philosophy other than 110.

Survey of such topics as the nature and function of society and the state, human freedom and rights, and the bases of social and political obligations.

607. Continental Rationalism. 5 hours.

Prerequisite: PHY 300 or 301 or equivalent.
A critical study of Continental Rationalism, focusing on evaluating the principal writings of Descartes, Spinoza, and Leibniz.

608. (REL) Philosophy of Religion. 5 hours.

Prerequisite: Permission of department.
A critical study concerning the meaning, nature, and validity of religious discourse, beliefs, and practices, involving theories concerning the existence and nature of God and man's relation to God.

609. British Empiricism. 5 hours.

Prerequisite: PHY 300 or 301 or equivalent.

Philosophy

A critical study of British Empiricism, focusing on evaluating the principal writings of Locke, Berkeley, and Hume.

610. Kant and German Idealism. 5 hours.

Prerequisite: PHY 301 or equivalent.

The course focuses on a selection of the writings of Kant, Hegel, and the German Idealists.

611. (ART) Aesthetics. 5 hours.

A critical survey of philosophical theories about the arts (for example, painting, literature, and music). Attention will be given to such topics as the function of art in society and the problem of justifying aesthetic judgments.

612. Contemporary Continental Tradition. 5 hours.

Prerequisite: PHY 300 or 301 or 302 or equivalent.

The course will focus on a selection of writings from the early phenomenologists, existentialists, contemporary Marxists and their successors, such as Husserl, Heidegger, Merleau-Ponty, Camus, Sartre, Marcuse and Habermas.

613. Contemporary Analytic Tradition. 5 hours.

Prerequisite: PHY 300 or 301 or 302 or equivalent.

The course will trace the development of contemporary analytical philosophy from the turn of the century to the present. Readings will be from philosophers such as Russell, Moore, Wittgenstein, Carnap, Ryle, Austin, Quine and Strawson.

614. (LIN) Introduction to the Philosophy of Language. 5 hours.

A critical study of topics such as formal and ordinary languages, meaning, reference, truth, definition, analyticity, ambiguity, metaphor, symbolism and the uses of language.

615. Medieval Philosophy. 5 hours.

Prerequisite: PHY 300 or equivalent.

A course in the major figures of the medieval period in western philosophy including Augustine and Aquinas.

616. Philosophy of Law. 5 hours.

Prerequisite: Ten hours of philosophy, political science or law.

A study of the nature and function of law with emphasis on the interpretation and application of the law in the judicial process. Readings in the classical and contemporary schools of the philosophy of law.

618. (ETH) Environmental Ethics. 5 hours.

Prerequisite: At least one course in philosophy.

A critical evaluation of major professional and nonprofessional writings in the field of environmental ethics.

643. (LIN) Symbolic Logic I. 5 hours.

Prerequisite: PHY 110 or permission of department.

A development of symbolic-mathematical logic, examining the propositional and predicate calculi with emphasis on problems in translation and formalization and topics in the philosophy of logic and mathematics.

651. Technology and Values. 5 hours.

Prerequisite: At least one course in philosophy.

A study of technology in its broadest human context, with emphasis on the mutual influence between means and ends and the impact of technology on shaping the beliefs and attitudes of a civilization. Includes alternative assessments of technology and illustrates with specific crucial issues of our time.

655. (CS) Artificial Intelligence. 5 hours. Three

lectures and two 2-hour lab periods.

See CS 655.

658. History of Natural Science. 5 hours.

Prerequisite: Ten hours of science.

An examination of some major physical, biological, and cosmological theories and their philosophical import, 6th Century B.C. to the present.

659. Philosophy of Natural Science. 5 hours.

Prerequisite: PHY 101 or 110 or permission of department.

The investigation of such topics as the logical structure of scientific hypotheses and/or laws, and the problems of their meaning and confirmation; the general patterns of scientific explanation; and the ideals of prediction and control.

660. Metaphysics. 5 hours.

Prerequisite: At least one course in philosophy.

The problems of metaphysics and their relation to other areas of philosophy.

661. Epistemology. 5 hours.

Prerequisite: At least one course in philosophy.

The problems of epistemology and their relationship to other areas of philosophy.

671. Philosophy of Social Science. 5 hours.

Prerequisite: SOC 105 or equivalent.

A study of the methods and problems of inductive reasoning, including the nature or probable inference, techniques of verification, and the structure of scientific explanation, with special reference to the social sciences.

674. Philosophy of Mind. 5 hours.

A critical study of the philosophical implications of alternative approaches to psychology such as the behavioral, the psychoanalytic, the phenomenological, with particular attention to such problematic areas as the nature, and validation of psychological concepts, laws, and theories, and knowledge of other minds.

700M. Master's Research. 1-15 hours. (Max. 25 hours.)

Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

701. Teaching Philosophy. 2 hours.

Survey of materials, techniques, and objectives for teaching undergraduate courses in philosophy. Particular attention to presenting lectures, leading discussions, constructing examinations, and instructional evaluations.

730M. Master's Thesis. 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of department.

808. Seminar in Philosophy of Religion. 5 hours. (Max. 15 hours.)

A critical study of major topics in the philosophy of religion such as the nature and existence of God, the problem of evil, and the character of religious discourse.

819. (LIN) Seminar in the Philosophy of Language. 5 hours. (Max. 15 hours.)

Prerequisite: Ten hours advanced work in philosophy or permission of department.

A critical study of the original source materials dealing with such topics as formal and ordinary languages, meaning, reference, descriptions, truth, definition, analyticity, speech acts, and the uses of language.

820. Seminar in History of Philosophy. 5 hours. (Max. 15 hours.)

Prerequisite: Ten hours of advanced work in philosophy or permission of department.

A study of philosophical topics and problems as found in the works of ancient, medieval, and modern philosophers.

830. Seminar in Political Philosophy. 5 hours. (Max. 15 hours.)

Prerequisite: Ten hours of advanced work in philosophy or permission of department.

A critical analysis of problems and topics in classical and contemporary political philosophy.

840. Seminar in Ethics. 5 hours. (Max. 15 hours.)

Prerequisite: Ten hours of advanced work in philosophy or permission of department.

A critical analysis of problems and topics in classical and contemporary moral philosophy.

849. Seminar in Problems of Logic. 5 hours. (Max. 15 hours.)

Prerequisite: PHY 444/644 or its equivalent.

An investigation into some of the major problems in contemporary logic, such as semiotics, deductive systems, metamathematics and the problems of induction.

859. Seminar in Philosophy of Science. 5 hours. (Max. 15 hours.)

Prerequisite: PHY 444/644 or equivalent.

A critical study of basic concepts in science such as explanation, description, prediction, law, cause, theory, confirmation, probability, observation and measurement.

860. Seminar in Metaphysics and Epistemology. 5 hours. (Max. 15 hours.)

Prerequisite: Ten hours of advanced work in philosophy or permission of department.

A critical study of various metaphysical systems and theories of knowledge and related problems in these areas.

865. (CS) Logic and Logic Programming. 5 hours. Three lectures and two 2-hour lab periods. See CS 865.

870. Problems and Topics in Philosophy. 5 hours. (Max. 15 hours.)

Prerequisite: Ten hours of advanced work in philosophy.

A systematic study of philosophical positions and problems.

880. Readings and Research in Special Problems in Philosophy. 5 hours. (Max. 15 hours.)

Prerequisite: Ten hours of advanced work in philosophy.

Directed reading and research in philosophy in area(s) of a student's special interest.

900D. Doctoral Research. 1-15 hours. (Max. 25 hours.)

Prerequisite: Permission of department.

Research while enrolled for a doctoral degree under the direction of faculty members.

930D. Doctoral Dissertation. 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of department.

Physics and Astronomy

F. Todd Baker, *Head*

Timothy G. Heil, *Graduate Coordinator,*
542-2818

(*Physics Building*)

The Department of Physics and Astronomy offers graduate work leading to the MS and PhD degrees in physics. The major research in the department is conducted in the following fields: astrophysics, atomic and molecu-

lar physics, nuclear physics, condensed matter physics, statistical mechanics, optics, relativity, high energy physics, mathematical physics, and physical oceanography. Experimental research is conducted in on-campus laboratories for atomic and molecular physics, laser spectroscopy of solids, material synthesis and physical oceanography. Research involving the application of computer simulational techniques to condensed matter physics, material science, and high energy physics is conducted at the Center for Simulational Physics. Experimental research in intermediate-energy nuclear physics is performed at off-campus accelerator laboratories in the U.S., France, Canada, and Japan. Astronomical research is conducted with the facilities of the National Radio and Optical Observatories, and those of NASA. Research in the above areas is aided by the campus computing facilities.

Prospective students desiring financial aid should submit all application material by February 15. No foreign language is required for the master's or doctoral degrees.

Physics (PCS)

600. Physics Seminar. 1 hour. (Max. 6 hours.)
Discussion of contemporary topics in physics.

604. Theoretical Mechanics. 4 hours.
Prerequisite: PCS 239 (229) and MAT 358.
Statics, kinematics, and dynamics of a particle and of systems of particles.

620. Electricity and Magnetism. 4 hours.
Prerequisite: PCS 239 (229) and MAT 459/659 or PCS 404/604.
Experimental foundations; development of Maxwell's equations.

630. Thermodynamics and Kinetic Theory. 4 hours.
Prerequisite: PCS 239 (229) and MAT 358.
The laws of thermodynamics and their application to physical systems. Kinetic theory.

640. Classical Theoretical Physics. 4 hours.
Prerequisite: PCS 404/604 and 420/620.
Methods of problem solving and formal developments in mechanics including the formulations of Lagrange and Hamilton. Applications of Maxwell's equations.

650. Atomic Physics and Quantum Mechanics I. 4 hours.

Prerequisite: PCS 404/604.
Development of wave mechanics with applications to atomic structure.

651. Atomic Physics and Quantum Mechanics II. 4 hours.

Prerequisite: PCS 450/650.
Development of wave mechanics with applications to atomic and molecular structure.

667. Experimental Physics. 3-10 hours.

Prerequisite: PCS 450/650.
Laboratory courses in which the student uses modern experimental techniques to investigate phenomena in atomic, molecular, nuclear, and solid state physics.

672. Nuclear Structure. 4 hours.

Prerequisite: PCS 450/650.
Introduction to the theory of nuclear structure as it has been inferred from quantum mechanical considerations and the study of experimental data on radioactivity and nuclear reactions.

682. Condensed Matter Physics. 4 hours.

Prerequisite: PCS 430/630 and 450/650.
Elastic, thermal, electrical, magnetic and optical properties of condensed matter. Covers such topics as: crystal structure, symmetry operators, x-ray and neutron diffraction, lattice vibrations, thermal properties, electrons in metals and semiconductors, dielectric and optical properties, magnetism and magnetic resonance, superconductivity and quantum fluids.

700M. Master's Research. 1-15 hours. (Max. 75 hours.)

Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

727-727L. Introductory Physics for Teachers—Mechanics and Wave Motion. 5 hours. Four hours of recitation and two hours of laboratory.

Prerequisite: MAT 109 or 116.
This course is designed to aid the introductory physics teacher in dealing with problems in mechanics and wave motion which may arise in his/her teaching. The effective presentation of physical concepts in this area will be emphasized. (Credit is limited to students working for a degree in education.)

728-728L. Introductory Physics for Teachers—Thermodynamics, Electricity and Magnetism. 5 hours. Four hours of recitation and two hours of laboratory.

Prerequisite: Fifteen hours of physics.
This course is designed to aid the introductory physics teacher in dealing with problems in thermodynamics and electricity and magnetism which

may arise in his/her teaching. The effective presentation of physical concepts in these areas will be emphasized. Credit is limited to students working for a degree in education.

729-729L. Introductory Physics for Teachers—Optics and Modern Physics. 5 hours. Four hours of recitation and two hours of laboratory.

Prerequisite: Fifteen hours of physics. This course is designed to aid the introductory physics teacher in dealing with problems in optics and modern physics which arise in his/her teaching. The effective presentation of physical concepts in these areas will be emphasized. Credit is limited to students working for a degree in education.

730M. Master's Thesis. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

801, 802. Advanced Analytical Mechanics. 5 hours each.

Prerequisite for 801: PCS 404/604. Systems of particles. D'Alembert's principle, principle of least action, Hamilton's principle, generalized coordinates, Poisson brackets, and the Hamilton-Jacobi equation.

810, 811, 812. Quantum Mechanics. 5 hours each.

Prerequisite for 810: PCS 440/640, 802 and 841. Basic principles of quantum theory, wave mechanics, and the application of these principles to problems in modern physics.

815. Advanced Quantum Theory. 5 hours.

Prerequisite: PCS 812 and 822. Relativistic quantum mechanics and quantum field theory.

817, 818. Quantum Theory of Scattering with Applications. 5 hours each.

Prerequisite: PCS 812. The formal and practical aspects of the quantum theory of scattering will be developed. Applications to atomic, nuclear and elementary particle physics will be integrated to illustrate the techniques learned.

820, 821, 822. Advanced Electromagnetic Theory. 5 hours each.

Prerequisite for 820: PCS 440/640 and 841. Maxwell's equations are assumed initially and used to investigate classical electromagnetic phenomena. A formulation of the field equations is developed in a space-time continuum. Beginning with the static phenomena the study will include the theory of multipoles, the radiation and propagation of electromagnetic waves, and the related reflection, refraction, diffraction and dispersion phenomena.

825, 826. Relativity. 5 hours each.

Prerequisite: Permission of department.

An introduction to Einstein's general theory of relativity. Topics include: mathematical background, fundamental field equations of Einstein's theory of gravitation and their extension to include electromagnetic phenomena, exact solutions to Einstein's field equations, particle structure and motion, gravitational radiation, gravitational collapse and black holes, cosmology, experimental tests, unified field theory.

830, 831. Statistical Mechanics. 5 hours each. Prerequisite for 830: PCS 812.

A study of the basic theory of statistical mechanics and its applications to the solution of some fundamental problems in physics.

832. Advanced Statistical Mechanics. 5 hours. Prerequisite: PCS 831.

Detailed discussions on advanced topics in statistical mechanics, especially those which have contributed to recent rapid progress in the modern many-body problem. Analytical and other advanced mathematical techniques will be emphasized.

833. Advanced Statistical Mechanics II. 5 hours. Prerequisite: PCS 832.

Papers such as those by Onsager, Kaufman, Yang, Berlin and Kac, Kramers and Wannier, which have shaped the recent developments of statistical mechanics will be discussed. Analytical techniques, such as spinor analysis, saddle-point method, elliptic functions, and matrix polynomials will be emphasized.

840, 841, 842. Methods of Theoretical Physics. 5, 3, 3 hours respectively.

Prerequisite for 840: MAT 358. Treatment of theoretical problems in physics (mechanics, electromagnetism, wave mechanics, heat flow, acoustics, etc.) by means of differential and integral equations, Green's functions, vector and tensor analysis, and perturbative, variational and group theoretical methods, and algebra and group theory.

850, 851. Structure and Spectra of Atoms and Molecules. 5 hours each. Three hours recitation per week.

Prerequisite for 850: PCS 812. The structure and spectra of atoms and molecules. Topics include Dirac theory, SCF theory for atoms and molecules, and external field effects.

860. Computer Simulation Methods in Physics. 5 hours.

Prerequisite: PCS 430/630. An introduction to the use of computer simulation methods to treat otherwise intractable problems. Emphasis will be placed on many-body problems and the techniques will include Monte Carlo, spin-dynamics and molecular dynamics methods.

861. Computer Simulations of Materials. 5 hours.

Three lectures and two 2-hour lab periods.

Prerequisite: PCS 860 or permission of department.

Computer simulation algorithms, including molecular dynamics and quantum molecular dynamics techniques. Students must write computer programs and generate and analyze data for different ensembles.

873. Nuclear Theory. 5 hours.

Prerequisite for 873: PCS 472/672 and 812.

A course in advanced nuclear theory. Some of the topics covered are multipole radiations, polarization phenomena, resonance theory, and nuclear scattering phenomena.

882, 883. Advanced Solid State Physics. 5 hours each.

Prerequisite for 882: PCS 482/682 and 810.

A discussion of the quantum theory of solids.

890. Advanced Topics. 5-15 hours. (Max. 15 hours.)

Prerequisite: PCS 810.

This course consists of current and advanced topics in physics.

899. Introduction to Research. 1-5 hours. (Max. 5 hours.)

Prerequisite: Student must be a prospective candidate for an MS or PhD degree in physics. An introduction to at least two research areas in physics will be provided by instructors who are actively engaged in research.

900D. Doctoral Research. 1-15 hours. (Max. 90 hours.)

Prerequisite: Permission of department.

Research while enrolled for a doctoral degree under the direction of faculty members.

930D. Doctoral Dissertation. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Astronomy (AST)

692. Astrophysics. 5 hours.

Prerequisite: AST 392.

Corequisite: PCS 420/620.

Modern astrophysics. Quantitative insights into stellar structure and evolution, the dynamics of interstellar matter, the structure and evolution of galaxies, and the large-scale structure of the universe.

791. Astronomy for Teachers. 5 hours.

A survey of the planetary system followed by a more extensive discussion of galactic and stellar structure and evolution, exterior galaxies and cos-

mology based on modern astrophysical theories and techniques. Not open to students with credit in AST 107, 108, 291 or 297H.

Physiology and Pharmacology (VPH)

Delmar R. Finco, *Head*

Thomas L. Huber, *Graduate Coordinator,*
542-5871

(*Veterinary Medicine Building*)

The Department of Physiology and Pharmacology offers MS and PhD degrees in physiology and pharmacology. Programs of study encompass the disciplines of physiology, pharmacology, and toxicology with opportunities to concentrate on molecular biology, basic mechanisms of physiologic and pharmacologic processes, specific organ systems, or clinical problems. Graduates of these programs are employed by universities and by a variety of companies in the private sector.

Candidates for the MS or PhD degrees must have a baccalaureate or a Doctor of Veterinary Medicine (DVM) or equivalent degree from an accredited college or university. Requirements for admission include 1) a grade point average of 3.25 with a BS or MS degree, or ranked in the upper half of the class DVM or equivalent degree; and 2) completion of the Graduate Record Examination with a minimum score of 1100 on the verbal and quantitative portions.

Certain minimum requirements in addition to those required by the Graduate School must be met. For the PhD degree, any undergraduate deficiencies in biologic sciences, chemistry, mathematics, or physics must be resolved early in a program of study.

The graduate programs include fulfillment of course requirements, research skills, and completion of a thesis or dissertation. Faculty of the department may be consulted about specific requirements.

605. Animal Physiological Chemistry. 3 hours.

Prerequisite: Permission of department.

Chemistry of cellular constituents and an introduction to the chemical process of living systems. Integrated functional aspects of the metabolic, respiratory and transport systems of the animal body from a chemical standpoint. (Fall quarter of odd numbered years.)

609. Comparative Mammalian Physiology. 5 hours.

Prerequisite: Permission of department.

A presentation of the animal body as a single functioning organism including neurophysiology, cardiovascular, and respiratory. (Fall quarter.)

610. Comparative Mammalian Physiology 5 hours.

Prerequisite: Permission of department.

A presentation of the animal body as a single functioning organism including endocrinology, reproduction, renal, and alimentary physiology. (Winter quarter.)

691. (PHR) Introductory Toxicology 5 hours.

See PHR 691. (Fall quarter.)

693-693L. Methods in Toxicology. 3 hours.

Prerequisite: Permission of department.

A survey of various analytical methods used in the isolation of toxicants from biological mediums, separation by chromatography and other methods, and identification by mass spectrometry and other methods. (Spring quarter.)

700M. Master's Research in Physiology 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of department.

Research while enrolled for a master's degree under the direction of faculty members.

701M. Master's Research in Pharmacology. 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of department.

Research while enrolled for a master's degree under the direction of faculty members.

702M. Master's Research in Toxicology. 1-15 hours. (Max. 50 hours.)

Research while enrolled for a master's degree under the direction of faculty members.

730M. Master's Thesis. 1-15 hours. (Max. 50 hours.)

Prerequisite: Permission of department.

800. (PHR) Cardiovascular Physiology. 3 hours.

Prerequisite: VPH 609 or permission of department.

Advanced study of current concepts in cardiovascular physiology. (Spring quarter of odd numbered years.)

808-808L. Ruminant Physiology. 5 hours.

Three lectures and one 4-hour lab period.

Prerequisite: Permission of department.

The physiological, biochemical and microbiological processes of digestion, absorption and metabolism of absorbed nutrients. (Fall quarter of even numbered years.)

810. Comparative Medical Endocrinology. 3 hours.

Prerequisite: VPH 610 or permission of department.

Advanced study of current concepts in mammalian endocrinology. (Summer quarter of even numbered years.)

812. Renal and Fluid-electrolyte Physiology. 3 hours.

Prerequisite: VPH 610 or permission of department.

Advanced study of current concepts in renal and fluid-electrolyte physiology. (Summer quarter of even numbered years.)

820. Animal Molecular Biology: Concepts and Current Literature 3 hours.

Prerequisite: GN/BOT 892 or equivalent.

Lectures and discussion on current research topics in molecular biology pertaining to veterinary medicine and livestock production.

840. Neurophysiology. 3 hours.

Prerequisite: Permission of department.

A comprehensive study of the nervous system, stressing biophysics and clinical neurology. (Fall quarter of odd numbered years.)

845. Chemotherapy. 3 hours.

Prerequisite: Permission of department.

Presentation and discussion of current knowledge of chemotherapeutic agents and their clinical evaluation. (Winter quarter of odd numbered years.)

846. (PHR) Molecular Pharmacology. 5 hours.

Prerequisite: Permission of department.

A detailed study of (a) the interaction of drugs with tissue receptors, and (b) the absorption, distribution, metabolism and elimination of drugs by the organism. (Spring quarter of even numbered years.)

890. Physiology-Pharmacology Seminar. 1 hour. (Max. 10 hours.)

Prerequisite: Permission of department.

Presentation of current research findings and methodology in physiology, pharmacology, or toxicology.

891A. (PHR) Organ Systems Toxicology I. 5 hours.

See PHR 891A.

891B. (PHR) Organ Systems Toxicology II. 5 hours.

See PHR 891B.

892. (PHR) Toxicology of Agricultural and Industrial Chemicals in the Environment. 5 hours.

See PHR 892. (Spring quarter.)

900D. Doctoral Research in Physiology. 1-15 hours. (Max. 75 hours.)

Prerequisite: Permission of department.

Research while enrolled for a doctoral degree under the direction of faculty members.

901D. Doctoral Research in Pharmacology. 1-15 hours. (Max. 75 hours.)

Prerequisite: Permission of department.

Research while enrolled for a doctoral degree under the direction of faculty members.

902D. Doctoral Research in Toxicology. 1-15 hours. (Max. 75 hours.)

Research while enrolled for a doctoral degree under the direction of faculty members.

930D. Doctoral Dissertation. 1-15 hours. (Max. 45 hours.)

Prerequisite: Permission of department.

Plant Pathology (PAT)

Wiley N. Garrett, *Head*

Charles W. Mims, *Graduate Coordinator,*
542-1291

(Plant Sciences Building)

Plant pathology offers three graduate programs: MS, PhD, and a professional Master of Plant Protection and Pest Management degree (MPPPM). The division has a strong tradition in scholarship and has an international reputation for research on diseases of apples, cotton, cowpeas, peaches, peanuts, pecans, small grains, soybeans, tobacco, and vegetables. Currently, active research and teaching programs are being conducted in all major areas of plant pathology involving many different crops.

The MS and PhD degrees are traditional academic degree programs which demand creative scholarship, technologic skill, and philosophic soundness. These programs emphasize the development of scientists who have the ability to fill positions of leadership in teaching, research, and administration. To achieve such goals of excellence, the student must be highly motivated and must make a commitment to the understanding of plant pathology so that biological principles can be developed and applied. Students

may specialize in general plant pathology, mycology, bacteriology, nematology, virology, physiology, genetics, or epidemiology.

The MPPPM program is designed to produce graduates with comprehensive, multidisciplinary training in plant pathology, entomology, and agronomy.

Doctoral research skills requirement: one of the three following options, with a decision of which option to require being left to the discretion of the student's advisory committee, (1) Statistics 621-622 or the equivalent, or a course for which this sequence is a prerequisite. (2) Computer Science 700-733 or 700-702-614 or the equivalent, or a course for which one of these sequences is a prerequisite. (3) Reading knowledge of a foreign language.

The Department of Plant Pathology has faculty located in Athens, Tifton and Griffin. All three locations are well equipped with modern instrumentation, greenhouses, and other facilities for graduate research. Land for field studies is located at main and branch experiment stations at several locations throughout Georgia in different climatic regions and major crop growing areas. A Plant Disease Clinic operated by the Extension Plant Pathology Department is used to give students practical training in disease diagnosis and control.

Prospective students who are interested in financial aid should file an application with the department; they will be considered for any Graduate School, College of Agricultural and Environmental Sciences, or department assistantship for which they are eligible.

606ABC. Etiology of Plant Diseases. 2 hours each suffix with 6 hours maximum for A, B, and C. Five lectures and one 2-hour lab.

Prerequisite: PAT 353-353L and permission of department.

Nonmycological causes of plant diseases with emphasis on their classification, biological characteristics, and pathogenic mechanisms. A. Bacterial plant pathogens. B. Nematode plant pathogens. C. Viral plant pathogens. One-third quarter will be devoted to each pathogen group. (Winter quarter.)

613. (ENT) Internship In Crop Protection and Pest Management. 1 hour. (Max. 2 hours.)

Prerequisite: Must be enrolled in professional Master of Plant Protection and Pest Management degree program.

An intern program where the student will be involved and become familiar with the applied aspects of plant protection and pest management.

620-620L. (BOT) Introductory Mycology 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: BOT 121-121L and 122-122L or BIO 103-103L and 104-104L or permission of department.

An introduction to the biology of the fungi, including a survey of all classes. (Fall quarter.)

625-625L. Plant Nematology. 5 hours. Three lectures and two 2-hour lab periods.

Morphology and biology of plant parasitic nematodes. An introduction to nematology with an emphasis on nematode morphology, nematode diseases of plants, and nematode management. (Winter quarter of even-numbered years.)

628-628L. Diagnosis and Control of Plant Diseases. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: PAT 353 or equivalent. Development of fundamental and practical knowledge for identification and control of plant diseases. (Fall quarter.)

700M. Master's Research. 1-15 hours. (Max. 75 hours.)

Prerequisite: Permission of department. Research while enrolled for a master's degree under the direction of faculty members.

701. Advanced Forest Pathology. 5 hours.

Prerequisite: FRS 320 or permission of department.

A study of principles and techniques of diagnosing and controlling diseases of trees and woody plants with special emphasis on disease development, implications for urban forestry and forest management. (Winter quarter.)

730M. Master's Thesis. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

815. Advanced Plant Pathology Seminar.

1 hour. (Max. 6 hours.) Presentation of papers and discussion of research in plant pathology.

820. Applied Mycology. 5 hours.

Prerequisite: PAT 420/620. This course is designed to provide students with training in the collection and identification of fungi in their natural habitats. Specimens collected in the field will be brought into the laboratory and identified using current taxonomic literature. In-

struction will also be given in the various methods of preserving fungi. (Summer quarter of even-numbered years.)

821-821L. (BOT) Biology of Ascomycetes. 5

hours. Three lectures and two 2-hour lab periods. A study of the comparative morphology of the Ascomycetes and their conidial stages (Fungi Imperfecti), principles of taxonomy, and training in identification. (Spring quarter of odd-numbered years.)

829-829L. Bacterial Plant Pathogens. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: Basic course in plant pathology and MIB 350 or equivalent.

The plant pathogenic bacteria, their isolation, identification, inoculation and control. (Spring quarter of odd-numbered years.)

831-831L. Epidemiology of Plant Diseases. 5

hours. Three lectures and two 2-hour lab periods. Prerequisite: PAT 353.

A study of factors which alter the course of disease epidemics in plant populations. Techniques for qualitative and quantitative measurement of these factors will be discussed and demonstrated. (Winter quarter of odd-numbered years.)

832-832L. (BOT) Biology of Phycmycetes. 5

hours. See BOT 832-832L.

834-834L. (BOT) Experimental Mycology. 5

hours. See BOT 834-834L.

835-835L. Plant Virology. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: PAT 353 or 383 or equivalent. The nature of plant viruses, their identification, host relations, transmission, purification, serology, and control. (Spring quarter of even-numbered years.)

840. Host-Pathogen Interactions. 5 hours.

Prerequisite: PAT 353-353L and GEN 358 and BCH 402/602 or BOT/AGY/BIO 650.

Principles of genetics of parasitism, physiology of parasitism, and disease resistance. The integrated study of how the genetic basis for host-pathogen compatibility and incompatibility is related to the structural, physiological, and biochemical responses in diseased plants and to mechanisms of resistance. (Winter quarter of even-numbered years.)

900D. Doctoral Research. 1-15 hours. (Max. 75 hours.)

Prerequisite: Permission of department. Research while enrolled for a doctoral degree under the direction of faculty members.

930D. Doctoral Dissertation. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Political Science (POL)

Thomas P. Lauth, *Head*

Robert Grafstein, *Graduate Coordinator*
(MA, PhD), 542-2938

Jerome S. Legge, Jr., *Graduate*
Coordinator (MPA, DPA), 542-2938
(Baldwin Hall)

Requirements for the PhD include completion of research skills requirement in either statistics, computer science, or a foreign language.

The Department of Political Science offers programs leading to MA, MPA, DPA, and PhD degrees. At the PhD level the department offers seven fields of study, plus a variety of specialized curricula. The candidate selects three fields of study.

The Doctor of Public Administration offers a research degree designed for persons interested in academic or public service careers.

The Master of Public Administration degree is designed for those persons planning to enter, or who are already a part of, the public service.

All degree programs are oriented to the systematic study and analysis of political phenomena.

600. American Political Thought. 5 hours.

A detailed examination of the ideas about human nature and government that have shaped political practice and debate in America, focusing on primary sources. Attention will be given to the principles of the Declaration of Independence and the Constitution, as developed especially by Jefferson, Madison, and Hamilton, and to interpretation of these principles by such statesmen as Lincoln and Wilson. Other topics include Black political thought and current liberal-conservative debate.

602. Political Philosophy: Hobbes to Nietzsche. 5 hours.

Prerequisite: POL 101 or equivalent.

A study of the development of modern political philosophy through the analysis of selected works

of such writers as Hobbes, Locke, Hume, Rousseau, Mill, Marx, and Nietzsche.

608. Problems in Democratic Theory. 5 hours.
Prerequisite: POL 101 or equivalent.

A study of major problems that arise in theoretical discussions of democracy, such as the nature of democratic government, its purposes, its justification, its limitations, and the conditions necessary for its maintenance.

610. American Political Parties. 5 hours.

Prerequisite: POL 101 or equivalent.

A study of organized groups whose purpose is to influence or control government in the U.S. Particular emphasis will be placed on the structure and activities of the two major political parties. The future of the American party system will be considered.

611. Electoral Behavior. 5 hours.

Prerequisite: POL 101 or equivalent.

An examination of the factors which contribute to electoral choice and the dynamics of voting in the American political system.

612. Political Behavior in the United States. 5 hours.

Prerequisite: Permission of department.

Overview of the major research areas involving individual political behavior. Among the subjects examined are political participation, political socialization, public opinion and political attitudes, political ideology, political communication, interest groups, political parties, campaigns, elections, and voting behavior. The course is strongly recommended to students desiring an introduction to politics in the United States.

614. The Legislative Process. 5 hours.

Prerequisite: POL 101 or equivalent.

A study of the U.S. Congress with emphasis on recruitment and composition of leadership, procedures, and the role of parties and interest groups. Recent changes in the Congress will be examined in light of theories of representation.

615. The United States Presidency. 5 hours.

Prerequisite: POL 101 or equivalent.

A historical examination of the President of the United States. The President's constitutional position will be addressed, including theories of executive dominance and executive privilege. Attention will also be given to the President's attempts to control the executive branch and presidential-congressional relations.

619. Southern Politics. 5 hours.

The politics of individual states, the emergence of the Republican Party, Black mobilization, the consequences of reapportionment, and selected civil rights topics.

620. Pre-Seminar in International Relations. 5 hours.

A survey of the major approaches to the study of international relations, including traditional, behavioral, and post-behavioral concepts and methods. Recommended for all students considering more advanced work in international relations.

621. International Organization. 5 hours.

Prerequisite: POL 101 or equivalent.

The origins and evolution of international organizations, with emphasis on the United Nations and the specialized agencies. Factors favoring and impeding their development. Their effect on political, economic, and social issues. Research using U.N. publications.

622. International Law. 5 hours.

Prerequisite: POL 101 or equivalent.

Readings, cases, lectures and research on the functioning of the legal structures in the international system with special emphasis on the relation between law and politics.

623. Government Institutions of the United States. 5 hours.

Prerequisite: POL 101 or equivalent.

A study of government of the United States with particular emphasis upon the executive, legislative, and judicial institutions.

625. American Foreign Policy. 5 hours.

Prerequisite: POL 101 or equivalent.

An analysis of domestic and international sources and consequences of American foreign policy. Emphasis on the role of American institutions and processes in making policy on national security and interdependence issues. Paper is usually required.

626. International Conflict. 5 hours.

Prerequisite: POL 101 or equivalent.

Causes, consequences, and management of violence between countries. Analysis of principal theoretical viewpoints, e.g., human aggressiveness, elite aims and ambitions, misperceptions and accidents, imperialism, socio-economic gaps, and systemic failure.

630A. Pre-Seminar in Comparative Analysis. 5 hours.

An introduction to the issues, approaches, and methods of comparative policy analysis.

632. Russian and East European Politics. 5 hours.

Prerequisite: POL 101 or equivalent.

Domestic and international politics in Russia and selected East European states (e.g., Belarus and Ukraine).

639. Far Eastern Political Systems. 5 hours.

Prerequisite: POL 101 or equivalent.

An interdisciplinary analysis of social, cultural, and political processes in three profoundly contrasting Far Eastern nations including China, Japan, and Korea. Both domestic and international issues will be examined.

641. Public Administration and Democracy. 5 hours.

Prerequisite: POL 101.

An overview of administrative organization, relationships, and controls facing the contemporary public manager in the United States. Emphasis is given to the institutional, political and normative environment of the public manager in a democratic society.

642. Public Personnel Administration. 5 hours.

Prerequisite: POL 101 or equivalent.

Procedures and problems of governmental personnel administration. Human relations aspects. Studies of governmental agencies are employed to give the students first-hand knowledge of governmental personnel administration.

643. Public Financial Administration. 5 hours.

Prerequisite: POL 101 or equivalent.

Activities involved in the collection, custody and expenditure of public revenue, such as the assessment and collection of taxes, public borrowing and debt administration, the preparation and enactment of the budget, financial accountability and the audit.

649. Personnel Problems in Public Agencies. 5 hours.

Prerequisite: POL 101 or permission of department.

In-depth treatment of selected problems in public personnel administration, using case studies and other vehicles to simulate realistic situations encountered in public agencies. Major emphasis on developing analytical and behavioral skills applicable in public personnel administration.

650. Internship in Government. 5-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

This course is designed for the academic portion of government internship programs on a graduate level. It does not apply toward a program of study but meets the requirements for internship in the MPA degree. Limited to department majors.

651. Policy Analysis. 5 hours.

Systematic survey of the theoretical approaches and concepts associated with the empirical analysis of public policies. Intended to acquaint students with policy analysis and prepare them for scholarly research in the area.

655. Ethics in Public Administration. 5 hours.
The course will examine the leading ethical issues that arise in the public administration practice and consider the sources to which the public administrator can look for guidance in dealing with these issues.

660. Local Government Management. 5 hours.
Description and analysis of the practice of local government management. Key issues in several functional areas of local government service are highlighted, and persons directly involved in the practice of local management will serve as resource persons for the course.

661. Urban Politics. 5 hours.
Prerequisite: POL 701 or permission of department.
The study of local politics in the United States, including the social and economic development of cities, local government structures and their effects, the participation of individuals and groups in urban politics, and major theoretical perspectives in urban research.

662. Urban Policy. 5 hours.
Prerequisite: POL 461/661 recommended.
Examination of the major federal and local policies affecting American urban areas. Major topics include local government finance, service delivery, land use and urban economic development.

664. Productivity Improvement in Local Government. 5 hours.
The concept of productivity, its importance in the public sector, principal techniques used to improve productivity in local government, and barriers to productivity improvement initiatives.

666. Special Topics in Urban Administration. 5 hours. (Max. 10 hours.)
The consideration of a number of substantive topics in the area of urban policy and administration. The focus of the course will shift depending on the interest of the instructor and may include such topics as land use policy and regulation, urban service delivery and local government reform.

672. Public Management I. 5 hours.
Prerequisite: POL 101 or equivalent.
Focuses on four arenas or levels of management which must be integrated in the pursuit of public-sector excellence. These arenas involve individuals, pairs of individuals, supervisor/subordinates, and small groups. Institutional, behavioral and psychological factors will be emphasized.

673. Public Management II. 5 hours.
Prerequisite: POL 641.
Focus is on two areas of senior public sector management: subsystemic features that typically involve middle managers and systematic features

that typically involve executive decision. Institutional, behavioral and psychological features will be emphasized.

685. Constitutional Law I: Powers. 5 hours.
The substantive law of separation of powers; powers among branches of government and between national and state governments defined; historical coverage emphasized.

686. Constitutional Law II: Civil Rights. 5 hours.
The substantive constitutional law of rights and liberties, with emphasis on political freedom of speech and press, religious freedom, freedom from discrimination, and protection of due process in criminal justice.

689. Administrative Law. 5 hours.
Prerequisite: POL 101 or equivalent.
The legal principles and practical doctrines involved in the work of administrative agencies vested with quasi-legislative or quasi-judicial powers.

700M. Master's Research. 1-15 hours. (Max. 60 hours.)
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

701. Methodology in Political Science I. 5 hours.
An examination of basic scientific methods, broadly defined, to include problems of definition, concept formation, hypothesis testing, explanation and prediction, and theory construction.

702. Methodology in Political Science II. 5 hours.
Prerequisite: POL 701 or permission of department.
A critical analysis of research problems in political science which are susceptible to the use of quantitative techniques.

703. Methodology in Political Science III. 5 hours.
Prerequisite: POL 702 or the equivalent.
The presentation and critical assessment of quantitative research in the various subfields of political science. Explores problems of various methodologies used in empirical political science research.

711. Research Methods in Public Administration. 5 hours.
An examination of basic research methods and their use in public administration both from the standpoint of public policy and public management. Topics covered include the scientific method, experimental and quasi-experimental designs, sampling, interviewing and questionnaire construction.

712. Data Applications in Public Administration. 5 hours.

Prerequisite: POL 711 and STA 421/621 or comparable quantitative courses.

Applications of data analysis techniques to problems in public management and program evaluation. Special attention is devoted to familiarity with computer hardware and software to solve public sector problems.

723. Policy Implementation. 5 hours.

Prerequisite: POL 651.

A comprehensive survey of the public policy implementation literature with emphasis given to the major substantive and methodological issues driving this emerging field of public policy analysis. Topics include bureaucracy's role in policy process, implementation analysis, and theories and methods for studying policy implementation.

724. Program Evaluation. 5 hours.

Prerequisite: POL 701 or permission of department.

Systematic survey of the theoretical perspectives associated with program evaluation; design and measurement procedures; types of evaluative research; and the management of political and ethical problems associated with performing and utilizing evaluation research.

730M. Master's Thesis. 1-15 hours. (Max. 60 hours.)

Prerequisite: Permission of department.

741A. Law, Ethics and Professionalism in Public Administration. 1 hour.

Prerequisite: POL 101.

An introduction to the legal environment of public administration; importance of ethical thinking and professionalism in public management is stressed.

741B. Communication Skills for Public Managers. 1 hour.

Prerequisite: POL 101.

Increases student awareness of the importance of interpersonal and group skills in public sector management. Students will use the public sector assessment center to assess their communication skills, both oral and written.

741C. Microcomputers for Public Managers. 1 hour.

Prerequisite: POL 101.

Introduction to microcomputer hardware and software packages which have utility for public sector managers.

743. Public Financial Management. 5 hours.

Prerequisite: POL 443/643 or permission of department.

Course covers the principal aspects of public financial management including accounting, budgeting, capital budgeting, revenue forecasting, risk management, pension management and auditing.

744. Budget Practicum. 5 hours.

Prerequisite: POL 443/643 or permission of department.

The development of practical budgeting skills with a special emphasis on budget development at the local level of government. Practical computerbased exercises enable the student to learn the logic of budget format.

790. Writing for Publication in Political Science. 5 hours.

This course assists students in the preparation and revision of manuscripts suitable for publication in political science journals.

808. Empirical Political Theory. 5 hours.

Prerequisite: POL 701.

This course provides a critical examination of the principal empirically oriented models and theories used in political science. The works of major empirical political theorists will be reviewed.

815. Metropolitan Fiscal Problems. 5 hours.

Prerequisite: Permission of department.

An examination of public economy of metropolitan areas and an intensive study of selected special metropolitan fiscal problems in the areas of public expenditures, revenues and fiscal administration.

818. Readings and Research in American Government. 5 hours.

Independent study of selected topics and problems in American government.

824. International Futures. 5 hours.

Prerequisite: POL 620.

A study of proposals, possibilities, and prerequisites for the transformation of the sovereign state system into a more peaceful and just world order.

827. International Political Economy. 5 hours.

Prerequisite: POL 620.

This course examines various aspects of the international economy both theoretical and practical, essential to an understanding of modern diplomacy and the conduct of foreign affairs.

831AB. Seminar in Developed Political Systems. 5 hours each.

Prerequisite: POL 630A.

An intensive study of selected special problems in the comparative study of developed political systems.

832AB. Seminar in Developing Political Systems. 5 hours each.

Prerequisite: POL 630A.

Political Science

Readings and research in the theory of creating integrated, viable, modernizing political systems in a world of economic inequalities. The focus is on the kinds of political institutions that can help manage the social stress of racial, ethnic, cultural, social, economic, technological and ideological diversity.

833A. Seminar in Post-Communist Political Systems. 5 hours.

Research seminar on the domestic and international politics of selected post-communist states.

837. Quantitative Analysis for Public Decision-Making. 5 hours.

Prerequisite: MAT 204 or equivalent.

A tool course for public administration. The course involves an introduction to quantitative analysis and techniques used in planning programming budgeting systems.

841. Problems in Public Administration. 5 hours.

A course designed to provide individual or small group instruction for graduate students interested in advanced problems in public administration.

842A. Seminar in Selected Problems in Public Personnel Administration. 5 hours.

Deals with the development of the collective negotiations movement. Stresses analysis of key policy issues, such as bargaining rights and the use of the strike weapon. Considers alternative procedures for resolving conflict between public employees and management.

843. Seminar in Public Budgeting. 5 hours.

Methods and research in public budgeting including practices and theory.

846. Seminar in Government Organization and Administrative Theory. 5 hours.

Prerequisite: POL 672 or permission of department.

This course is designed to provide individual or group research on various theories of organization, management, and public administration as they relate to the study of government organizations. Special attention will be given to the design of appropriate research focusing on the institutional and behavioral elements of organization.

851. Government and Business. 5 hours.

Prerequisite: POL 651 or equivalent.

Systematic review of the economic, social, and political bases for government intervention in market economies. Topics include evolution of and justification for regulatory policies, the theoretical debate surrounding government regulation, case studies of specific regulatory programs, and alternatives to regulation.

855. Human Services Administration in Government. 5 hours.

Prerequisite: POL 641 or permission of department.

This course provides a comparative overview of some of the special problems and processes involved in administering government and human service programs in health, welfare, man-power and related areas.

858. Human Rights Policy. 5 hours.

Prerequisite: POL 651.

An empirical as well as normative analysis of the human rights issue as it affects the process of policy formulation and implementation. Both domestic and international policy areas are included.

859. Politics of East-West Economic Policy. 5 hours.

Prerequisite: POL 630A or 620 or permission of department.

This course examines the national and global politics surrounding economic relations between the market economies of the industrialized West and the centrally planned economies of the Communist East.

875. Systems of Political Philosophy. 5-10 hours. (Max. 10 hours.)

Prerequisite: Permission of department.

A detailed examination of the writings of a leading political philosopher, aimed at seeing how the elements of his/her thought form a comprehensive and unified view of political life. The philosophers to be studied from year to year will include Plato, Aristotle, St. Thomas Aquinas, Machiavelli, Hobbes, Locke, Rousseau, Hegel, Marx, and Nietzsche. Classic works in American thought such as *The Federalist* will also be considered.

876. Problems in Political Philosophy. 5-10 hours. (Max. 10 hours.)

A study of selected problems in political philosophy. The problems include the nature of justice; the functions of government; the grounds of legitimate authority; the scope of individual rights; the foundations of democratic government; political obligation, civil disobedience, and revolution; the meaning of responsibility; views of human nature and their political relevance.

877. Recent Political Thought. 5 hours.

A study of important and influential political theories of recent times, including ideologies and scientific theories as well as contributions to political philosophy. The aim will be to understand both the approaches to political theory that have emerged in the contemporary period and the alternative interpretations that have been given of contemporary man and society.

887. Public Policy Seminar. 5-10 hours. (Max. 10 hours.)

Prerequisite: POL 651 or equivalent.

Research seminar on the major analytical techniques and theoretical approaches to decision-making in substantive public policy areas (e.g.,

environmental protection, health care, natural resources). Provides for in-depth and independent work by students on projects of individual interest related to their specific career goals.

888. Modern Legal Theory. 5 hours.

Prerequisite: POL 101 or equivalent.

Theoretical and empirical approaches to analyzing the role of courts in a democracy, including appropriate and inappropriate methods for interpreting and applying constitutional and other legal texts.

889. Judicial Politics. 5 hours.

Prerequisite: POL 101 or equivalent.

Empirical approaches to the social scientific study of judicial processes, policy-making, and policies with emphasis on judicial selection, models of judicial decision-making, institutional constraints on judicial choice, and the implementation and impact of judicial decisions.

900D. Doctoral Research. 1-15 hours. (Max. 60 hours.)

Prerequisite: Permission of department.

Research while enrolled for a doctoral degree under the direction of faculty members.

920. Special Problems in Political Science. 5-10 hours. (Max. 10 hours.)

A research/problems course designed for students with advanced graduate standing. Students must have completed a minimum of four courses in the general area in which he/she selects his/her major topic.

930D. Doctoral Dissertation. 1-15 hours. (Max. 60 hours.)

Prerequisite: Permission of department.

Poultry Science (PS)

Henry L. Marks, *Head*
Kenneth W. Washburn, *Graduate
Coordinator, 542-1354
(Livestock-Poultry Building)*

The Department of Poultry Science offers excellent opportunities for graduate study for qualified students with degrees in biology, chemistry, economics and poultry science. Graduate programs leading to the MS and PhD degrees are offered in the fields of poultry products, nutrition, microbiology, molecular biology, mycotoxicology, genetics,

physiology, management and parasitology. Facilities for graduate training include laboratories with the latest equipment for studies in lipid and mineral metabolism, environmental and reproductive physiology, physiological and population genetics and in avian diseases and parasites.

Equipment is available for electrophoretic and chromatographic separation, fractionation procedures, and use of radioactive isotopes, including a whole body counter. Specialized equipment includes liquid scintillation detectors, infrared, ultraviolet and dual spectrometers, ultracentrifuge, amino acid analyzer, gas-liquid chromatograph, and numerous other modern instruments.

Experimental poultry facilities are also available for studies, where large numbers of birds are required for research in the various areas of specialization in the graduate program, including a controlled temperature house for work in environmental physiology.

Superior students are encouraged to apply for graduate assistantships and fellowships which are available through the department.

The 800 numbered courses in nutrition are listed in the offerings of animal nutrition.

605. Advanced Poultry Breeding. 5 hours.

Prerequisite: PS 372.

The development of practical poultry breeding programs. A study of the mode of inheritance and relative heritability of various characteristics of economic importance and criteria for effective selection toward their improvement.

606-606L. Physiology of Avian Reproduction. 5 hours.

Prerequisite: BIO 103-103L and 104-104L.

Lectures emphasize the reproductive physiology of poultry and integrate this information into management programs directed toward maximizing reproductive efficiency. Labs will emphasize the acquisition of skills and techniques in reproductive management including the collection, preservation and evaluation of semen; fertility evaluation, and proper incubation practices.

633. Basic Mycotoxicology. 5 hours.

Prerequisite: BIO 103-103L and BIO 104-104L and CHM 261-261L or equivalent.

A study of mycotoxins as they relate to agriculture. Various mycotoxins apt to occur in feed-stuffs will be discussed. Major areas of emphasis are fungal producers, chemical and physical properties of

the toxins, prevalence and distribution in nature, biological effects and mode(s) of action, and means of control.

637. (ADS/AN) Monogastric Nutrition. 5 hours. See AN 637.

700M. Master's Research. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department. Research while enrolled for a master's degree under the direction of faculty members.

730M. Master's Thesis. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

801-801L. Avian Physiology. 5 hours.

Prerequisite: Course in Animal Physiology. The course will cover the physiology of all organ systems of birds other than the reproductive system. In-depth study of avian systems will be done using current scientific literature and review articles as source material.

810. Poultry Science Seminar. 1 hour.

Prerequisite: Three 5-hour courses in poultry or equivalent.

Reading, reports and discussions of problems related to the field of poultry. One hour credit per quarter. May be repeated for a total of five quarter hours credit. Required of all graduate students in poultry. (Winter quarter.)

812. (ESC) Science Writing and Literature Retrieval. 5 hours.

Prerequisite: Student must be in program related to life sciences.

Principles of scientific writing and literature retrieval techniques in the life sciences. Emphasis will be placed on familiarization with library resources and their use through manual and automated retrieval systems and on practical aspects of oral and written communications of scientific information. (Summer quarter.)

815. Poultry Nutrition with Application to Avian Medicine. 2 hours.

Prerequisite: PS 375 or ADS 330 or equivalent. A course designed to present the practical aspects of poultry nutrition and to develop an understanding of the relationship of nutritional programs in poultry production to disease problems.

851, 852. Problems in Poultry Science. 5 hours each.

These courses allow graduate students to work intensively on selected problems in the specialized areas of poultry nutrition, genetics, physiology, poultry products technology, pathology,

parasitology, and management. This listing will permit a maximum of 15 hours credit, with not more than 10 hours in any one discipline.

856. (CB/PAR) Seminar in Parasitology. 1 hour. (Max. 6 hours.) (A/S grading.) See CB 856.

900D. Doctoral Research. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department. Research while enrolled for a doctoral degree under the direction of faculty members.

930D. Doctoral Dissertation. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Psychology (PSY)

Joseph D. Allen, *Head*

Irwin S. Bernstein, *Graduate Coordinator,*
542-3103
(*Psychology Building*)

Graduate work leading to the PhD degree is offered in biopsychology, clinical psychology, cognitive/experimental psychology, applied psychology, social psychology, and life-span developmental psychology. The large majority of students are admitted directly into one of the six doctoral programs and they are required to obtain the master's degree on the way to the doctoral degree. Foreign language proficiency is not required by the department, but individual programs and advisory committees may set such a requirement.

The *biopsychology* program permits specialization in physiological psychology, and animal behavior or a combination of the specialties. The *clinical* program, approved by the American Psychological Association, seeks to prepare the student for a variety of professional roles by providing a solid foundation in technique, theory and research in clinical psychology. In the *cognitive/experimental* program, specialization is offered in learning and performance, sensation and perception, and cognitive processes. Specialization may also be arranged in history and systems of psychology. The *applied psychology* program permits the student to concentrate in human factors psychology,

industrial-organizational psychology, psychometrics, and related areas. In the *social* program, substantive training is provided in the areas of cognitive and attitudinal theories, group structure and process, and personality and social development, along with methodological training in group observation, attitude measurement, and survey research. The *life-span developmental psychology* program seeks to provide students with a firm grounding in developmental processes that will prepare them for careers as academic teachers/researchers or as investigators in the many nonacademic settings in which developmental issues and problems are addressed.

Facilities for graduate training in psychology include relatively complete physiological, psychophysiological, psychoacoustical, psychomotor, and other experimental psychology laboratories, the Psychology Clinic providing diagnostic and therapeutic services, the University Testing and Evaluation Center, extensive human and animal research facilities, including a colony of non-human primates, an electroencephalography laboratory for computer analysis of evoked potential responses, a Child Development Subject Pool, child subject availability and research labs at The McPhaul Children's Center, the University Computer Center, and a Research and Training Center for Mental Retardation. Other research opportunities are offered in the Institute for Behavioral Research.

Although most students begin their graduate work in the fall quarter, initial admission in any other quarter is permitted by all programs except clinical psychology. After they have been admitted, prospective students who are eligible for financial aid will be notified if any additional information is required.

602. Systems of Psychology. 5 hours.

Prerequisite: Two upper division psychology courses or permission of department.
A survey of major theoretical systems in psychology with special emphasis on developments of the last half century, especially behaviorism and cognitivism.

604. History of Psychology. 5 hours.

Prerequisite: Two upper division courses in psychology or permission of department.
History of psychology and its antecedents, both classical and modern.

606. Psychology of Aging. 5 hours.

Prerequisite: PSY 361 and SOC 465/665.

A survey of research in gerontology, with emphasis on learning, personality, attitudes, perception, ability, and adjustment in the aged.

610. Psychology of Women. 5 hours.

Prerequisite: PSY 101 or 103H.

The study of women as the subject of psychological inquiry. Topics include personality theory, psychopathology, psychological aspects of reproductive health, psychological reaction to being victimized, and life crises.

612. Behavior Therapy. 5 hours.

Survey of behavior therapy techniques for use with adults. Emphasis on relaxation training, systematic desensitization, modeling, contingency management, aversive control, cognitive restructuring, and similar methods.

613. (AAM) Classic Studies in Black Psychology. 5 hours.

See AAM 613.

614. Introduction to Industrial-Organizational Psychology 5 hours.

Prerequisite: PSY 101 or 103H.

A survey of major topics in industrial-organizational psychology, with emphasis on organizational and personnel psychology applied to business, industry, and government.

615. Psychometrics. 5 hours.

This course focuses on the theoretical and statistical principles that underlie psychological measurement. Emphasis is placed on understanding how these principles are employed in the development and use of psychological tests. Applications of existing tests are discussed and critiqued. Professional standards and legal guidelines are presented.

622. Experimental Design in Psychology. 5 hours.

Prerequisite: STA 422/622 or equivalent.

An advanced treatment of the design and analysis of psychological research, with emphasis on the logical foundations of experimental design.

632. (AAM) Psychology of Prejudice. 5 hours.

See AAM 632.

640. Research Methods in Social Psychology. 5 hours.

This course is designed to provide students with an in-depth review of the methods used in contemporary empirical research by social psychologists. Field and experimental approaches will be examined in terms of their relative strengths, weaknesses, and costs for various research questions. Topics will vary from quarter to quarter.

651. Theories of Personality. 5 hours.

Prerequisite: PSY 101 or 103H.

Psychology

A survey of the major theories of personality, with some attention given to current research and to methodological issues in the field.

652. Basic Learning Processes. 5 hours.

Prerequisite: Permission of department.

Empirical phenomena and theories concerning basic forms of nonassociative and associative learning, primarily stimulus-stimulus and response-consequence associations. Phenomena include habituation, Pavlovian and Operant conditioning, generalization and discrimination, concept formation and choice behavior. Historical and comparative aspects of the subject are emphasized.

653. Individual Differences. 5 hours.

An examination of the nature and interrelationship of psychological traits, including maximum performance (intelligence, achievement, etc.) and typical behavior (interests, personality, etc.) traits. Also considered are the extent of racial, sex, age, and other group differences as well as the causal factors (genetics, environmental, etc.) in individual differences.

658. Statistics in Psychological Research. 5 hours.

A study of the basic concepts and techniques in descriptive and sampling statistics. Applications of statistics in psychological research.

661. Advanced Experimental Psychology. 5 hours.

Prerequisite: PSY 458/658.

Emphasis is placed upon experimental techniques and methods of experimental work. Especially designed for the student who desires to learn scientific method in psychology.

663. Cognitive Psychology. 5 hours.

Prerequisite: PSY 652 or the equivalent.

An examination of the history of cognitive psychology and the basic cognitive processes involved in attention, memory, knowledge representation, information processing and problem solving.

664. Advanced Social Psychology. 5 hours.

This survey course includes ethics in social research; social factors in perception; attitude formation and change; cognitive theories, group structure and process; ideology and personality; and social motivation.

665. Methods and Practices in Clinical Psychology. 5 hours.

A survey of assessment and behavior-personality change procedures currently used in clinical psychology. The course will also focus on theoretical issues important to these applied procedures.

667. Research Design in Clinical Psychology. 5 hours.

Prerequisite: PSY 658 and 661 and 665.

Research problems and strategies in clinical psychology will be examined. Methods for evaluating treatment outcome will be the focus of study. Both single subject and group designs will be covered.

675. Principles of Primate Phylogeny. 5 hours.

Prerequisite: PSY 101 or 103H or ANT 102 or permission of department.

Introduction to the interrelationships among morphology, behavior, and systematics for students of primate behavior.

676. Comparative Physical and Psychological Development of the Primates. 5 hours.

Prerequisite: PSY 101 or 103H or ANT 102 or permission of department.

The study of the influence of species and developmental environment on normal and abnormal behavioral development.

677. Organization of Primate Social Groups. 5 hours.

Prerequisite: PSY 101 or 103H or ANT 102 or permission of department.

The interaction of ecology, phylogeny, individual behavior, and group organization from a comparative perspective.

680. Physiological Psychology. 5 hours.

Prerequisite: Ten hours of biology.

The relationship between the internal environment and such behaviors as food intake control, mating behavior, neural action, emotion, etc. are studied.

681. Comparative Psychology. 5 hours.

Prerequisite: Permission of department.

An intensive survey of the literature in fundamental aspects of comparative psychology.

691. Biological Foundations of Behavior. 5 hours.

Prerequisite: Permission of department.

An intensive survey of the literature in the fundamental aspects of physiological psychology.

692. Sensory Psychology. 5 hours.

An intensive survey of the literature in the fundamental aspects of sensation and perception.

700M. Master's Research 1-15 hours. (Max. 20 hours.)

Prerequisite: Permission of department.

Research while enrolled for a master's degree under the direction of faculty members.

730M. Master's Thesis. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

753. Personality Assessment. 5 hours.

Prerequisite: PSY 814 or permission of department.

Clinical application of selected assessment tools, with emphasis on MMPI, TAT and Rorschach including theoretical assumptions and interpretation of data.

754. Psychology of Disadvantaged and Minority Groups. 5 hours.

Prerequisite: Permission of department.
Psychological aspects of minority and disadvantaged groups in the United States and the impact of the discipline of psychology on these groups.

755. Treatment of Sexual Dysfunction. 5 hours.

Prerequisite: PSY 814.
Biological and psychological aspects of human sexual dysfunctions, with a discussion of interviewing, psychometric, behavioral, and psychophysiological approaches to assessment and common treatment methods.

800ABCDE. Advanced Topics in Psychology. 5 hours each. (Max. 25 hours.)

Prerequisite for 800A: Permission of department and STA 422/622 or equivalent.

The purpose of this seminar is to examine current topics and new developments in the field of psychology.

806B. Vision Seminar. 5 hours. (Max. 10 hours.)

Prerequisite: PSY 692 or permission of department.
An advanced examination of specific topics in areas representative of contemporary research and theory in visual science.

814. Advanced Psychopathology: Adults. 5 hours.

Prerequisite: PSY 423 or equivalent and at least 20 hours of undergraduate or graduate psychology and permission of department.

Surveys, historical trends and contemporary theories of psychopathology; reviews methods, issues, validity and utility of classificatory systems; evaluates the intrinsic-attribute properties of various behavior disorders as well as related assessment and treatment procedures.

820B. Operant Conditioning. 5 hours.

Theoretical and practical approaches to the assessment of free-ongoing behavior. Laboratory exercises in the circuitry and logic of operant conditioning apparatus and design are included.

822B. Human Memory. 5 hours.

A critical examination of the major phenomena, experimental procedures, and theoretical models of human memory.

823A. Classical Perception. 5 hours.

Prerequisite: Graduate standing in psychology.
Discussion of classical problem areas of perception (e.g. contour, movement, illusions) with emphasis on the perceptual process and its relation to other psychological functions.

825. Cognitive Theories and Models. 5 hours.

Prerequisite: PSY 663.

An examination of the cognitive theories and models proposed for human behavior in memory, reasoning, language, mathematics, judgment, imagery, problem solving, and thinking.

826. Applied Cognition. 5 hours.

Cognitive psychology with a perspective on applying knowledge from research on basic cognitive processes in attention, memory, knowledge representation and decision making to the workplace.

827. Cognitive Research Seminar. 2 hours. (Max. 15 hours.)

Topics in cognitive psychology including perception, memory, reading, attention, language, mathematics and decision making.

828. Individual Differences in Child Cognition. 5 hours.

Prerequisite: PSY 880 or equivalent.

Theory and research in individual differences in children's cognitive development, with emphasis on the stability of intelligence, the modifiability of intelligence, and cognitive characteristics associated with individual differences in intelligence.

830. Neuroanatomy for Behavioral Scientists. 5 hours.

Prerequisite: PSY 691 or equivalent.

Basic, functional neuroanatomy of mammals, including humans, is emphasized to provide a foundation for understanding the neuroanatomical substrates of perception, motivation, emotion, learning, and other cognitive and behavioral processes.

831. Advanced Comparative Psychology. 5 hours.

Prerequisite: PSY 681.

Analysis in depth of basic topics in comparative psychology. Includes: history; relation to other disciplines; behavior genetics; ontogenetic principles and processes; problems in the comparative study of complex processes.

833. Laboratory Apprenticeship in Physiological and Comparative Psychology. 5 hours. (Max. 25 hours.)

Prerequisite: PSY 691.

A laboratory-tutorial course in the approaches and research methods of physiological and comparative psychology. Maximum credit will be limited to 25 hours, taken under various instructors.

834A. (VAR) Seminar in Applied and Domestic Animal Behavior. 1-5 hours. (Max. 15 hours.)
See VAR 834A.

836. Comparative Cognition. 5 hours.

Prerequisite: PSY 681 or 831.

Psychology

Traditional and contemporary, empirical and theoretical research which may be subsumed under "cognitive processes" and which has involved nonhuman animals will be examined. Among the topics will be Piagetian concepts, oddity and sameness-difference judgments, color, form, size, number, and "natural category" judgments, and other class and relational conceptual judgments.

839ACDE. Seminar in Physiological Psychology. 5 hours each. (Max. 20 hours.)
Prerequisite: PSY 691.

Designed to explore in depth particular problem areas within physiological psychology. Emphasis is placed upon evaluation of current research and theory and students' development of original research ideas.

839FG. Seminar in Comparative Psychology. 5 hours each.
Prerequisite: PSY 691.

Designed to explore in depth particular problem areas within comparative psychology. Emphasis is placed upon the evaluation of current research and theory in the development of research ideas by the student.

850. Clinical Staffing Procedures. 2 hours.

Prerequisite: Permission of department.

Practicum in clinical psychology. Supervised experience in assessment and treatment of clinical problems using a wide variety of applicable techniques. Professional roles and ethical concepts of the clinical psychologist are integrated with clinical procedures.

851. Child Behavior Therapy. 5 hours.

Prerequisite: PSY 814 or equivalent.

Behavior change strategies for child behavior problems occurring in the home, school, or institution. Conduct problems, hyperactivity, learning problems, social withdrawal, mental retardation, and autism are among the disorders examined.

852. Behavioral Medicine/Health Psychology. 5 hours.

Prerequisite: PSY 691, 665 and permission of department.

The definition, scope and research efforts in the field of behavioral medicine-health psychology will be discussed. The behavioral concomitants of select medical and psychophysiological disorders (e.g., cardiovascular, respiratory and pain related problems) as well as psychologically based interventions will be covered.

854. Marital Dysfunction and Intervention. 5 hours.

Prerequisite: PSY 814 or equivalent and permission of department.

A survey of contemporary empirical research on marital functioning and the treatment of marital dysfunction with an emphasis on characteristics

of concordant and discordant couples, theoretically divergent models of marital functioning, and the efficacy of available methods of therapeutic intervention.

855. Neuropsychological Assessment. 5 hours.

Prerequisite: [PSY 691 and 830] or equivalent.

Theories of brain function in the human will be discussed. Methods of detecting abnormal functioning and the localization of such abnormal functioning by behavioral methods will be presented. Possible etiologies of such lesions will be covered.

869. (ART) A Psychological Approach to Eroticism in Art. 5 hours.

Prerequisite: 20 hours of graduate credit in art or psychology and permission of department.

The course traces the history of erotic expression in Art from prehistoric to modern times and then examines modern scientific studies of arousal produced by erotica as well as the consequences of exposure to erotic artistic materials. It includes an examination of the modern dilemma concerning freedom of expression vs. the preservation of established morality.

871. Theories of Attitude Structure, Formation, and Change. 5 hours.

Prerequisite: PSY 664.

A comparative examination of theoretical approaches to the organization and formation of beliefs and attitudes to cognitive consistency, and to the determinants of attitude stability and change.

872. Group Structure and Process. 5 hours.

Prerequisite: PSY 664.

An examination, at an advanced level, of situational and individual determinants of social structure and interaction in face-to-face groups. Various theories of exchange, equity, power, and leadership are considered.

879. Advanced Seminar in Social Psychology. 5 hours. (Max. 15 hours.)

Prerequisite: PSY 664.

Illustrative topics are social motivation; conformity; social power; interpersonal perception; stimulation and mathematical models of social behavior; and vicarious learning.

880. Developmental Psychology. 5 hours.

Critical survey of evidence concerning physical, social, and psychological development of primates. Special emphasis is placed on comparative analysis for understanding human development.

882. (LIN/EPY) Psycholinguistics. 5 hours.

Prerequisite: Interview with instructor.

The course surveys recent theoretical and experimental work in psycholinguistics and psychosemantics. Cognitive and linguistic development are discussed and the conceptual presupposi-

tions of ordinary language usage are examined. The course comprises a working seminar during which a specific section of English semantics is subjected to conceptual analysis.

883. Cognition and Aging. 5 hours.

Prerequisite: PSY 663.

Topics in cognition and aging including age-related changes in memory, problem-solving, reasoning, intelligence, and attention; role of compensatory mechanisms, structures, and processes, including experience, expertise, knowledge structures, and wisdom.

884. Personality and Social Development. 5 hours.

Survey of literature relevant to early childhood determinants and developmental processes to personality and social behavior. Current research, theories and methodological issues are emphasized.

885. Perceptual Development. 5 hours.

Prerequisite: PSY 823A or 692.

Ontogenetic changes in perception and their importance for cognitive processes with emphasis on the implications of these changes for perceptual theories.

886. Cognitive Development: Infancy to Adolescence. 5 hours.

Prerequisite: PSY 880 or equivalent.

Analysis and discussion of current research on problems, issues, and theories relevant to the development of complex cognitive processes in infancy, childhood, and adolescence.

887. Theories of Psychological Development. 5 hours.

Prerequisite: PSY 880 or equivalent.

Evaluation of the logical and empirical adequacies of modern theories of psychological development in relation to selected issues relevant to theory construction in the behavior sciences.

888. Human Sexual Behavior. 5 hours.

Prerequisite: Permission of department.

An examination of the nature and variety of human sexual behavior in many settings.

889ABC. Seminar in Developmental Processes. 5 hours each. (Max. 15 hours.)

Prerequisite: Ten hours of graduate work in psychology.

Study of current topics in developmental psychology. Emphasis on independent study and research.

892. (CFD) Behavior Problems in Children. 5 hours.

See CFD 892.

893. Advanced Psychological Measurement. 5 hours.

Prerequisite: PSY 615.

Aptitude and ability test construction; reliability; criterion development; validity; and item analysis.

896. Training and Development. 5 hours.

Prerequisite: PSY 414/614 or permission of department.

A review of the principle systems, and techniques applicable to industrial and organizational training and management development.

897. Organizational Psychology. 5 hours.

Prerequisite: PSY 414/614 or permission of department.

An examination and critical review of theories and research in selected areas of organizational behavior. Emphasis is on intrapersonal behavior, such as, motivation, job stress, and job satisfaction.

898. Seminar in Industrial-Organizational Psychology. 2-15 hours. (Max. 30 hours.)

Prerequisite: Permission of department.

Consideration of significant and current topics in industrial-organizational psychology as determined by the interests and research activities of the staff.

899. Seminar in Psychometrics. 2-15 hours. (Max. 15 hours.)

Prerequisite: PSY 894 or 895.

Consideration of significant and current topics are defined by the interests and research activities of the staff.

900. Special Problems. 1-30 hours. (Max. 30 hours.) (A/S grading.)

Prerequisite: Permission of department.

Extensive readings or empirical research in selected areas or planning and pilot studies preparatory to a thesis.

900D. Doctoral Research. 1-15 hours. (Max. 30 hours.)

Prerequisite: Permission of department.

Research while enrolled for a doctoral degree under the direction of faculty members.

920. Clinical Internship in Psychology. 5 hours.

Prerequisite: Permission of department.

Students will engage in the professional practice of clinical psychology under constant and close supervision. This professional work will include treatment of patients, group and individual psychotherapy, teaching and research.

930D. Doctoral Dissertation. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

988. (MAN) Seminar in Staffing. 5 hours.

See MAN 988.

Religion (REL)

George E. Howard, *Head*
David S. Williams, *Graduate Coordinator*,
542-5356
(Peabody Hall)

The department offers a comprehensive program of studies in the field of religion leading to the MA degree. Areas of concentration are in Far Eastern religions, Judaica, Islamic studies, Hebrew Bible/Old Testament, Semitic languages and literature, intertestamental studies, New Testament and early Christian literature, historical theology and church history, philosophical and systematic theology, American and African-American religious history. Various methodologies are employed in these areas. Admission to the MA program presupposes a thorough background in religious studies. The graduate program is designed to give the student a broad and thorough training in the field of religion with a specialization in some area of concentration.

For the MA degree, reading knowledge of one foreign language is required.

Permission of department is a prerequisite for these courses unless otherwise stated.

600. The History of Religions. 5 hours.

A survey of the nature of early primitive religions and the main outlines of the chief living religions of the world. The method will be both historical and analytical.

601. Religion in Asian Cultures. 5 hours.

The interrelation between religion and culture in contemporary and classical Asia. The course will focus on religion's role historically as a major force in shaping the cultures of South and Southeast Asia, China, and Japan, and on significant contemporary trends reflecting particularly the effects of secularism, war, rising nationalism, Western science, and communism.

602. Confucianism and Chinese Tradition. 5 hours.

Prerequisite: Permission of department. Confucianism and its place in traditional Chinese religion, thought, and culture. Emphasis on the teachings of foundational thinkers such as Confucius, Mencius, and HsUn-tzu.

604. The Buddhist Tradition. 5 hours.

The development of Buddhism from its origins in the life and teachings of the Buddha through the period of philosophical ferment in India, and its thought and institutions in the East and the West up to the present.

606. Taoist Thought and Religion. 5 hours.

Prerequisite: Permission of department. Taoism and its place in traditional Chinese religion, thought, and culture. The classical texts, *Lao-tzu* and *Chuang-tzu*, the evolution of the later Taoist religion, and the many varieties of Taoist spirituality.

607. Japanese Religion. 5 hours.

Prerequisite: Permission of department. Development of religion in Japan from earliest times to the present, with emphasis upon Shinto, the domestication of Buddhism, and the relationship of religion to the Japanese state and "national identity." Particular attention given to the development of Zen in Japan.

608. (PHY) Philosophy of Religion. 5 hours.

See PHY 608.

609. Indian Philosophy and Religion 5 hours.

Traces the path of India's religious and philosophical thought from the Indus civilization to the present. Attention will be given to interpreting the orthodox Hindu systems, as well as Buddhism, and their related religious practices, ethics, castes, and sects.

610. Old Testament Literature. 5 hours.

A study of the nature, content and problems of Old Testament literature, with attention given to historical data, literary forms, and outstanding personalities.

611. New Testament Literature. 5 hours.

A study of the nature, content and problems of New Testament literature, with particular attention given to the political, social and religious background of Judaism out of which Christianity sprang, the life of Jesus, the immediate foreground of an expanding church.

612. The New Testament World. 5 hours.

Prerequisite: At least ten hours of history and/or literature.

A study of the political, social, and religious influences on the New Testament writings. Special attention is given to Intertestamental Judaism and Hellenistic and Roman Religion as backgrounds to New Testament Christianity.

615. (ANT) Anthropology of Religion. 5 hours.

Prerequisite: Permission of department. Anthropological approaches to the world's major religions, as they relate to complex societies.

620. Constructive Theology. 5 hours.

An examination of the aims, methods, and content of theology as related to monotheistic religions of mankind.

622. Theology and Culture. 5 hours.

An examination of the relation of theology to philosophy, science, technology, and the arts, with special attention to the theological attempts to deal with the impact of science and technology upon culture.

631. (AAM) Afro-American Religious History. 5 hours.

The religious traditions of black Americans from Colonial times to the present; major religious movements, personalities, and ideas and their relationship to various aspects of American culture.

632. American Religious History. 5 hours.

Prerequisite: Permission of department.

Major and innovative religious organizations, ideas, movements, and personalities as they express themselves in particular religious settings as well as the manner in which they have influenced other aspects of American culture.

633. (AAM) Southern Religious History. 5 hours.

Prerequisite: Permission of department.

The origins, growth, and current practices of religion in the American South. In addition, the interaction between religion and other aspects of Southern culture—such as racial and gender concerns, education, Darwinian science, temperance, and politics—will be explored.

634. (AAM) The Bible in the Black Church. 5 hours.

Prerequisite: REL/AAM 300 or permission of department.

Biblical interpretation in Black America from 1865 to present.

640. The Teachings of Jesus. 5 hours.

Although primarily a study of what Jesus taught, attention is given to the literary and environmental background of his teachings, the historical life of the teacher, and the contemporary validity of what he taught.

641. History of Christian Theology, Ancient. 5 hours.

A study of the development of Christian thought from the 1st through the 5th Century as expressed in the writings and practices of the Christian community and its leading thinkers.

642. History of Christian Theology, Medieval. 5 hours.

A study of the development of Christian thought from the 6th through the 14th Century as expressed in the writings and practices of the Christian community and its leading thinkers.

643. History of Christian Theology, Modern. 5 hours.

A study of the development of Christian thought from the 15th through the 19th Century as expressed in the writings and practices of the Christian community and its leading thinkers.

644. Women in Christian History. 5 hours.

Prerequisite: Permission of department.

An historical examination of the relationship between women and Christianity, particularly concerning matters involving gender equality in church and society.

651. Judaism—Its History, Literature and Thought. 5 hours.

An examination of Judaism along essentially historical and chronological lines, including outlines of several periods in the history of Judaism, from antiquity to contemporary times, and description of principal traits of each stage of Judaism.

653. The Holocaust. 5 hours.

Prerequisite: Permission of department.

The destruction of European Jewry from 1933 to 1945: (1) the historical context; (2) life and death in ghettos and camps; (3) the reactions of bystanders; (4) art, music, and literature of the Holocaust; and (5) religious questions raised by the Holocaust.

654. Jewish Theology. 5 hours.

Prerequisite: Permission of department.

Fundamental issues in Jewish religious thought as expressed in Rabbinic literature and subsequent writings of major Jewish thinkers.

655. Prophetic Literature of the Old Testament/ Hebrew Bible. 5 hours.

Prerequisite: Permission of department.

An examination of the origin and development of the phenomenon of prophecy as it existed throughout the history of ancient Israel.

656. Ancient Israelite Religion. 5 hours.

Prerequisite: Permission of department.

Origins of the religion of ancient Israel, its emergence from and continuities with ancient West Semitic religion and culture. Historical and comparative methods, emphasizing current knowledge of Near Eastern history and religions contemporary with ancient Israel.

658. Apocalyptic Literature. 5 hours.

Prerequisite: Permission of department.

An examination of apocalyptic literature from its origins in the 6th and 5th centuries B.C.E. down to its flourishing in Hellenistic and Roman times. The texts, to be studied in English translation, will include the following: Isaiah 24-27 and 40-66, Zachariah 9-14, Joel, Malachi, Daniel, I Enoch, IV Ezra, Baruch, Qumran material, Mark 13, and the

Religion

Book of Revelation. Questions bearing on contemporary theological significance will also be discussed.

661. Islam and Its World. 5 hours.

Prerequisite: Permission of department.
Islam as a religious and sociocultural phenomenon. Students will be introduced to the fundamental principles of the Islamic faith, Qur'an, the Sunna of Muhammad, Islamic sectarianism, Islamic law and theology, and themes in Islamic art.

662. Islamic Thought in the Caliphal Age. 5 hours.

Prerequisite: Permission of department.
Islamic scholarship from the 8th through the 14th Centuries. Principal topics covered will include: the Qur'an and Qur'anic exegesis, the Hadith tradition, Islamic law, theology, philosophy and Sufi mysticism.

663. Islam and the Modern World. 5 hours.

Prerequisite: Permission of department.
Islamic modernism and revivalism as a response to Western cultural penetration since the 18th century. Subjects covered will include Sufi reformism, Wahhabism, the Salafiyya movement, Islamic "fundamentalism" and the Iranian Revolution.

664. The Sufi Way. 5 hours.

Prerequisite: Permission of department.
Islamic mysticism, both as a set of metaphysical doctrines and as it is expressed in magico-religious practices and the veneration of Muslim "saints." Particular attention will be given to the doctrinal development of Sufism, its literature, and major figures.

700M. Master's Research. 1-15 hours. (Max. 75 hours.)

Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

730M. Master's Thesis. 1-15 hours. (Max. 25 hours.)

Prerequisite: Permission of department.

810. Major Issues in Islamic Research. 5 hours. (Max. 15 hours.)

Major issues in Islamic studies: for example, Qur'anic exegesis, Islamic law, philosophy, history, hadith, sectarianism, and Sufism.

835. Seminar on the Life of a Selected Christian Figure Since 1500. 1-15 hours. (Max. 15 hours.)

Prerequisite: REL 443/643 or permission of department.

The life, thought, and religious activities of a selected major or innovative Christian leader active since 1500 and his/her impact on the development of Christianity.

842. Seminar on Problems and Topics in Theology. 5 hours. (Max. 15 hours.)

Prerequisite: Ten hours in advanced work in religion or permission of department.
An examination of traditional and contemporary problems and topics in theology. Substantive and methodological issues will be addressed.

843. Seminar on Christian Theologians. 5 hours. (Max. 15 hours.)

Prerequisite: Ten hours in advanced work in religion or permission of department.
An examination of the works of Christian theologians both past and present. Substantive and methodological issues will be addressed.

863. Seminar in Problems and Topics in New Testament Research. 5 hours. (Max. 15 hours.)

Prerequisite: Ten hours of advanced work in religion or permission of department. Some topics will require a reading knowledge of Greek.
A study of major issues in New Testament research such as New Testament and Gnosticism, New Testament and Judaism, New Testament and Hellenism or some more narrowly defined problem connected with a particular New Testament book or person.

865. Seminar in Problems and Topics in Old Testament (Hebrew Bible) Research. 5 hours. (Max. 15 hours.)

Prerequisite: Permission of department and reading knowledge of Hebrew.

A study of major issues in Old Testament (Hebrew Bible) research. Topics will vary including (a) such areas as Pentateuchal criticism, Eighth-Century Prophecy, Apocalyptic movements, Wisdom Literature, the History of the Religion of Ancient Israel, the cultural legacy of the Ancient Near East or (b) research on a particular book of the Hebrew Bible.

866. Seminar in Judaic Studies. 5 hours. (Max. 15 hours.)

Prerequisite: Permission of department. (Some topics will require a reading knowledge of Hebrew.)

A study of a major field or issue in Judaic Studies such as Rabbinic Judaism, Jewish Mysticism, or Post-Holocaust Theology, or a particular Jewish thinker or school of thought.

870. Seminar in Problems and Topics in Religion Research. 5 hours. (Max. 20 hours.)

Prerequisite: Graduate standing in the Department of Religion or permission of department.

A study of major issues in religion research. Topics will vary according to the area of discussion. Such areas will include: biblical studies, religious history and philosophy, rabbinics, Islamics, Buddhism, canonical criticism, etc.

Arabic (ARB)

603. Intermediate Standard Arabic I. 5 hours.
Prerequisite: ARB 202 or equivalent.
Intermediate grammar, reading, conversation, and composition in standard (including classical) Arabic.

604. Intermediate Standard Arabic II. 5 hours.
Prerequisite: ARB 403/603 or equivalent.
Continuation of ARB 403/603, including review and introduction of new content.

610. Reading and Research in Arabic and Islamic Literature. 5 hours. (Max. 15 hours.)
Prerequisite: ARB 404/604 or equivalent.
Study of Arabic and Islamic texts with emphasis upon extensive reading and individual and/or group research projects. Selection of topics will vary according to the interest of the instructor and students.

Hebrew (HBW)

603. Intermediate Hebrew I. 5 hours.
Prerequisite: HBW 202.
A review of classical Hebrew grammar with readings of selected texts from the Hebrew Bible.

604. Intermediate Hebrew II. 5 hours.
Prerequisite: HBW 403/603.
Readings of Hebrew texts selected from the Old Testament, Dead Sea Scrolls, or early rabbinic literature.

880. Advanced Reading and Research in Hebrew Literature. 5 hours. (Max. 15 hours.)
Prerequisite: HBW 404/604 or permission of department.
Directed study in readings and research in Classical and Post-Biblical Hebrew literature.

Semitic (SEM)

815. Seminar in Northwest Semitic Epigraphy. 5 hours. (Max. 15 hours.)
Prerequisite: HBW 403/603 or the equivalent of one year of classical Hebrew.
Various Northwest Semitic inscriptions. Areas of concentration will vary including Ugaritic, Phoenician, Punic, and Moabite as well as extra biblical Hebrew and Aramaic inscriptions.

Romance Languages

Doris Y. Kadish, *Head*
Timothy B. Raser, *Graduate Coordinator*,
542-3163
(Moore College)

The MA is offered with a major in French, Spanish, or Romance languages. Forty hours of course work, plus a thesis, and a final oral examination are required for the major. These courses must include FR/SP 770F/ 770S or 870F/870S. A reading examination in one language (exclusive of the major language) must also be completed before the admission to candidacy can be filed. Options in French, Spanish, and Romance linguistics are offered for the MA. Degree requirements are the same, but 25 of the 40 hours must be in language or linguistics; the thesis is to be on a linguistic topic, and the oral examination will cover a reading list in linguistics. The MA in Romance languages (with a major in French, Italian, Portuguese or Spanish) consists of 25 hours in the major language and 15 hours in the minor language.

The PhD degree is given in Romance languages with a major in French, Italian, Portuguese, or Spanish and a minor in a discipline or interdisciplinary field related to the major. A minimum of 20 graduate courses (including those taken at the MA level), preliminary examinations, a dissertation and a final oral defense are required. In addition to the major language, at least one graduate course in another Romance language must be taken. The minor consists of three to four courses (of the 20 required), and with the approval of the student's advisory committee, may include isolated graduate courses outside the major or minor fields. A reading knowledge of one foreign language (exclusive of the major language and English) is required.

French (FR)

610. French Culture and Civilization. 5 hours.
A study of the history of French culture and of its contribution to world civilization from the Middle Ages to the present. Social, political, cultural and technical developments are illustrated in lectures, slideshows and discussions. Given in French.

611. France Since 1968. 5 hours.
The making of contemporary French society from 1968 to the present, as derived from analysis of the interrelationship of cultural, social, economic and political factors. Given in French.

625. Literature of the Middle Ages. 5 hours.
A survey of Old French literature to 1300 and study of its history and of important individual works with emphasis upon their literary values. Given in French.

636. Middle French Literature. 5 hours.
A historical survey of French literature of the 14th and 15th Centuries. Special emphasis will be given to the life and works of Guillaume de Machaut, Jean Froissart, Eustache Deschamps, Charles d'Orléans, Franc/ois Villon, and Phillippe de Commines. Given in French.

639. Prose of the 16th Century. 5 hours.
A historical survey of French prose literature of the Renaissance with special emphasis upon the life and works of Franc/ois Rabelais and Michel de Montaigne. Lectures, collateral readings, reports. Given in French.

645. Prose and Poetry of the 17th Century. 5 hours.
Prose and poetic styles as studied in selected masterpieces from Malherbe to La Bruyère. Given in French.

646. Drama of the 17th Century. 5 hours.
Concentrates almost exclusively on Corneille, Racine and Molière. Given in French.

655. The Enlightenment. 5 hours.
A study of precursors and principal figures of the French Enlightenment. Given in French.

657. Prose Fiction of the 18th Century. 5 hours.
A study of representative works of major fiction writers of the 18th Century. Given in French.

665. Prose Fiction of the 19th Century. 5 hours.
The development of the novel and its relationship to the various literary movements of the 19th Century. Given in French.

666. Drama of the 19th Century. 5 hours.
A study of the development of French drama in the 19th Century from Romanticism to Post-Symbolism. Given in French.

675. Prose Fiction of the 20th Century. 5 hours.
A study of representative works of major 20th Century French novelists. Given in French.

676. Drama of the 20th Century. 5 hours.
A study of representative works of major 20th Century French playwrights. Given in French.

700M. Master's Research. 1-15 hours. (Max. 30 hours.)
Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

707F. (LIN) Applied French Linguistics. 5 hours.
The applications of the science of linguistics to the methodology of teaching French. Given in French.

730M. Master's Thesis. 1-15 hours. (Max. 30 hours.)
Prerequisite: Permission of department.

756. Advanced French Syntax and Composition. 5 hours.
Comprehensive review of grammatical forms and usages with particular reference to the needs of teachers of French. Acquired knowledge will be applied in weekly compositions. Given in French.

757F. (LIN) French Phonetics. 5 hours.
A careful analysis of each of the sounds in the French language followed by intensive drill in the accurate pronunciation of these sounds in connected discourse. Practice in phonetic transcription; use of tapes. Given in French.

759. Comparative Stylistics. 5 hours.
Emphasis on the expression of concepts through translation and free composition practice in the acquisition of facility in the target language. Given in French.

770F. (LIN) History of the French Language. 5 hours.
A history of the development of the French language from Latin to the present. Given in French.

777. Teaching College French. 5 hours.
An introduction to the teaching of French on the college level. An analysis of techniques used to teach listening, speaking, reading, and writing with an examination of current theories of language acquisition. Given in French.

801, 802. Seminar: Medieval Literature. 5 hours each.
A specific author, genre or theme of the medieval period will be studied in detail with emphasis upon individual research. Given in French.

815, 816. Seminar: 16th Century Literature. 5 hours.
Advanced study of a major writer or group of writers; of a major work or group of works, or of a genre. Given in French.

823. Seminar: 17th Century Literature. 5 hours.
An intensive study of one major author or a group of authors with similar concerns. Given in French.

835, 836, 837. Seminar: 18th Century Literature. 5 hours each.

An intensive study of one major author or a group of authors with similar concerns. Given in French.

847, 848. Seminar: 19th Century Literature. 5 hours.

An intensive study of one major 19th Century author or literary movement. Given in French.

856, 857, 858. Seminar: 20th Century Literature. 5 hours each.

An intensive study of one major 20th Century writer. Given in French.

870F. Introduction to Old French. 5 hours.

A history of the French language from the appearance of the first texts in the 9th Century to the Renaissance, with linguistic analysis of representative texts. Phonology and morphology. Given in French.

Italian (ITA)

601, 602, 603. Directed Reading and/or Projects. 5 hours each.

Prerequisite: ITA 201, 360.

These courses allow students the opportunity to engage in individual study, reading or projects, under the direction of a project director who must be an assistant professor or higher. The courses may not be repeated for credit.

610. Italian Culture and Civilization. 5 hours.

A study of the twenty regions in Italy in terms of their historical, literary, artistic, and sociological importance. Culture, heritage, and regional differences are studied through contemporary literary texts, films, and slide presentations. Given in Italian.

620. Dante I. 5 hours.

A close reading of Dante's *Vita nuova* and *Inferno* for their allegorical, moral, eschatological, and poetic meanings. Contemporary critical interpretations of the *Commedia* will be discussed. Given in Italian.

621. Dante II. 5 hours.

The relationship of Dante's *Purgatorio* and *Paradiso* to medieval theology, history, and poetics. Attention will also be given to how Dante's "minor" works (*Rime*, *De monarchia*, *De vulgari eloquentia*, and *Convivio*) relate to the *Commedia*. Given in Italian.

631. Petrarch and Petrarchism. 5 hours.

A study of early Italian humanism through a close reading of Petrarch's *Canzoniere* and selections from his other works of poetry and prose. His influence on later Italian and European writers will be discussed together with the poetic tradition which originated in his works. Given in Italian.

641. Boccaccio and the Novella. 5 hours.

The birth of modern European narrative is examined through a close reading of Boccaccio's *Decameron*, some of his minor works (*Filocolo*, *Filostrato*, *Elegia de Madonna Fiammetta*, *Amorosa visione*, and *Teseida*) and the *novelle* of later writers (Machiavelli, Bandello, Sacchetti, Masuccio, et al.). Given in Italian.

651. Italian Lyric Poetry. 5 hours.

Prerequisite: Two of the following: ITA 306, 310, 311, 312.

A study of representative Italian poets from the *Scuola Siciliana* and the *Dolce Stil Nuovo* to the present, with special attention given to Leopardi, romanticism, and 20th century poets. Given in Italian.

661. The Italian Renaissance. 5 hours.

A study of 15th and 16th century Italian literature through the representative literary works of the major humanists. Special attention will be given to the study of Renaissance poetics, the birth of modern literary scholarship, the epic, the pastoral, treatises, and the "questione della lingua." Works by Sannazaro, Poliziano, Boiardo, Ariosto, Castiglione, Firenzuola, Machiavelli, et al. Given in Italian.

671. The Italian Novel in the 19th Century. 5 hours.

A study of the Italian novel from its origins in Foscolo, Manzoni, and Tommaseo to Nievo, Fogazzaro, Verga and D'Annunzio. The course will also examine the various literary movements of that century: from romanticism to realism, naturalism, decadentism, and "verismo." Given in Italian.

681. Italian Theatre. 5 hours.

Prerequisite: Two of the following: ITA 306, 310, 311, 312.

A study of Italian drama from its origins to the present with special attention given to the Renaissance and the 18th century. Plays by Poliziano, Machiavelli, Ariosto, Tasso, il Ruzante, Metastasio, Goldoni, C. Gozzi, Alfieri, Manzoni, D'Annunzio, Pirandello, and Dario Fo. Given in Italian.

691. Topics in Italian Language and Literature. 5 hours.

A study of specific aspects of Italian language or literature, not covered in other courses, to be selected according to the needs and interests of the students. Given in Italian.

Romance Languages

692. Italian Literature in the 20th Century. 5 hours.

A study of the various literary movements from the turn of the century to the present (from the relativists, futurists, and "crepuscolari" to the neorealists and neo-experimentalists). Works by Pirandello, Svevo, Marinetti, Gozzano, Vittorini, Moravia, Pavese, Calvino, Lampedusa, Gadda, and Pasolini. Given in Italian.

Portuguese (POR)

601. Directed Study and/or Projects. 5 hours. Prerequisite: POR 201 or 360 or permission of department.

The course allows students the opportunity to engage in individual study, reading or projects, under the direction of a project director.

602. Directed Study and/or Projects. 5 hours. Prerequisite: POR 201 or 360 or permission of department.

The course allows students the opportunity to engage in individual study, reading or projects, under the direction of a project director.

603. Directed Study and/or Projects. 5 hours. Prerequisite: POR 201 or 360 or permission of department.

The course allows students the opportunity to engage in individual study, reading or projects, under the direction of a project director.

611. Culture and Civilization of the Portuguese-Speaking World. 5 hours.

Structure of societies in the Portuguese-speaking world. Analyses of the interrelations among cultural, social, economic and political factors. Given in Portuguese.

665. Eighteenth and Nineteenth Century Prose of the Portuguese-Speaking World. 5 hours. (Max. 15 hours.)

Works of the most prominent writers in Portugal and/or Brazil in the 18th and 19th centuries. Given in Portuguese.

671. The Twentieth Century Novel and Short Story of the Portuguese-Speaking World. 5 hours. (Max. 15 hours.)

Works of the most prominent twentieth century writers of Brazil and/or Portugal and/or Lusophone Africa. Given in Portuguese.

672. Poetry of the Portuguese-Speaking World. 5 hours. (Max. 15 hours.)

Representative poets from Portugal and/or Brazil and/or Lusophone Africa. Given in Portuguese.

673. Theater of the Portuguese-Speaking World. 5 hours. (Max. 15 hours.)

Representative plays in Portugal and/or Brazil. Given in Portuguese.

685. Clarice Lispector and Joao Guimaraes Rosa. 5 hours.

Brazil's foremost writers of the twentieth-century, Clarice Lispector and Joao Guimaraes Rosa, with emphasis on works central to any study of contemporary Latin American literature. Given in Portuguese.

850, 851, 852. Seminar: Literature of the Portuguese-Speaking World. 5 hours each.

An intensive study of a representative writer or writers, and works or trends of the literature of the Portuguese-speaking world.

Romance (ROM)

700M. Master's Research. 1-15 hours. (Max. 30 hours.)

Prerequisite: Permission of department.

Research while enrolled for a master's degree under the direction of faculty members.

730M. Master's Thesis. 1-15 hours. (Max. 30 hours.)

Prerequisite: Permission of department.

800. Topics in Romance Studies. 5 hours. (Max. 15 hours.)

Specific aspects of Romance languages, literatures, or cultures.

850, 851. Readings and Research in Romance Literature. 5 hours each.

Prerequisite: Permission of department.

This course will require extensive and intensive readings in literature and in pertinent critical writings. The field to be covered will be determined by the student's previous background but in all cases will presume that the student is capable of reading rapidly with comprehension.

890. Romance Linguistics. 5 hours.

Romance linguistics with treatment of the external history of the Romance languages and their internal structure in the areas of phonology, morphology and syntax, and vocabulary, as well as application of the comparative method to the Romance languages.

900D. Doctoral Research. 1-15 hours. (Max. 60 hours.)

Prerequisite: Permission of department.

Research while enrolled for a doctoral degree under the direction of faculty members.

930D. Doctoral Dissertation. 1-15 hours. (Max. 60 hours.)

Prerequisite: Permission of department.

Spanish (SP)

610. Spanish Culture and Civilization. 5 hours.

A study of the geography, history, arts, and letters of Spain and Latin America from the beginning to the present. Emphasis will be placed on the modern historical, political and intellectual developments. Lectures, readings, and discussions. Given in Spanish.

611. Spanish American Culture and Civilization. 5 hours.

A study of the geography and complex process of the cultural, historical and political evolution of the Spanish American countries from the origins of the indigenous civilizations to the present. Given in Spanish.

621. Colonial Spanish-American Literature. 5 hours.

In-depth study of the principal authors in the forefront of innovation and change in Spanish American letters, 1492-1800. Given in Spanish.

629. Spanish Literature to 1500. 5 hours.

From the *Cantar de Mio Cid* to *Celestina*. A course devoted to the principal literary works in epic, lyric, *cuaderna via*, prose and drama. Given in Spanish.

631. The Modernist Movement. 5 hours.

A study of Rubén Darío, his contemporaries, and followers. Given in Spanish.

638. Non-Fiction Prose of the Golden Age. 5 hours.

A study of the 16th and 17th Century non-fiction prose, with emphasis on representative works of the Spanish erasmism, mysticism, and political treatises of the Golden Age. Given in Spanish.

640. Poetry of the Golden Age. 5 hours.

A critical study of the currents of Spanish poetry from 1500 to 1700. Given in Spanish.

641. Drama of the Golden Age. 5 hours.

Study of Golden Age drama and intensive reading and analysis of plays by the major dramatists, spanning the period from Lope de Vega through Calderón and his contemporaries. Given in Spanish.

661. Spanish-American Drama. 5 hours.

An intensive study of the main trends, authors, and dramatic works from the colonial period to the present. Given in Spanish.

662. Spanish-American Short Story. 5 hours.

A study of the development of the short story in Spanish America from colonial times to the present. Given in Spanish.

663. Spanish-American Essay. 5 hours.

A representative study of the history of the essay in Spanish America from the colonial period to the present. Given in Spanish.

664. Spanish-American Novel. 5 hours.

A study of the novel as a literary form in Spanish America from colonial times to the present. Given in Spanish.

665. 20th Century Spanish-American Poetry. 5 hours.

The major poetic figures of the 20th Century since the Modernista Movement. Given in Spanish.

667. Drama of the 19th Century. 5 hours.

The development of Spanish drama from Moratín's neoclassic comedies to the realistic plays of Galdós and the early Benavente. Special emphasis in the romantic drama. Given in Spanish.

675. Prose Fiction of the 20th Century. 5 hours.

The development of the Spanish novel from the Generation of 1898 to the present. Given in Spanish.

677. Poetry of the 20th Century. 5 hours.

Readings in the poets of the various schools of the 20th Century. Given in Spanish.

678. Modern Non-Fiction Prose. 5 hours.

A study of the 19th and 20th Century non-fiction prose, with emphasis on representative works of the Spanish Krausism, Generation of 98, and Ortega y Gasset. Given in Spanish.

700M. Master's Research. 1-15 hours. (Max. 30 hours.)

Prerequisite: Permission of department. Research while enrolled for a master's degree under the direction of faculty members.

707S. (LIN) Applied Spanish Linguistics. 5 hours.

The applications of the science of linguistics to the methodology of teaching Spanish. Given in Spanish.

730M. Master's Thesis. 1-15 hours. (Max. 30 hours.)

Prerequisite: Permission of department.

756. Advanced Spanish Syntax and Composition. 5 hours.

A comprehensive review of grammatical forms and usages with particular reference to the needs of teachers of Spanish. Given in Spanish.

757S. (LIN) Spanish Phonetics. 5 hours.

A study of the organs of speech, the difference in production of Spanish and English speech sounds, and the various speech phenomena. Practice in phonetic transcription, pronunciation, and intonation. Given in Spanish.

770S. (LIN) History of the Spanish Language. 5 hours.

A history of the development of the Spanish language from Latin to the present. Given in Spanish.

777. Teaching College Spanish. 5 hours.

An introduction to the teaching of Spanish on the college level. An analysis of techniques used to teach listening, speaking, reading, and writing with an examination of current theories of language acquisition. Given in Spanish.

806. Literature of the Middle Ages. 5 hours. Advanced study of a major writer or group of writers; a major work or group of works; or a particular genre. Given in Spanish.

812. Seminar: Spanish Literature of the 16th Century. 5 hours.

Study of the outstanding works in Spanish Renaissance and early Golden Age literature. Given in Spanish.

822, 823. Seminar: Spanish Literature of the 17th Century. 5 hours each.

An intensive study of one major Spanish Golden Age author and his works in a particular genre. (Drama: Lope de Vega, Tirso de Molina, or Calderón. The novel: Cervantes. Poetry: Góngora and Quevedo.) Given in Spanish.

836. Seminar: Spanish Literature of the 18th Century. 5 hours.

Topics include study of a genre, a theme, or a related group of authors. Given in Spanish.

845, 846. Seminar: Spanish Literature of the 19th Century. 5 hours each.

An intensive study of a major writer or writers, their literary work, or main trends of 19th Century Spanish literature. Each author is studied in depth and the student has ample opportunity for individual research and additional intensive readings. Given in Spanish.

851, 852. Seminar: 20th Century Spanish Literature. 5 hours each.

An intensive study of a representative writer, or writers, their works or trends of 20th Century Spanish literature, beginning with the Generation of 1898. Given in Spanish.

861, 862, 863. Seminar: Spanish-American Literature. 5 hours each.

An intensive study of a representative writer or writers, their works, or of a major movement of Spanish American literature. Given in Spanish.

870S. Introduction to Old Spanish. 5 hours.

A history of the Spanish language from the appearance of the first Spanish documents until the Renaissance, with linguistic analysis of representative texts. Phonology and morphology. Given in Spanish.

Small Animal Medicine (SMS)

Clarence A. Rawlings, *Head and Graduate Coordinator*,
542-6385
(*Veterinary Medicine Building*)

The Department of Small Animal Medicine does not have a graduate degree program. Clinical internships and residency programs are offered. Residents are enrolled in graduate degree programs of other departments in the college.

631. Acute Pathophysiology. 5 hours.

Prerequisite: DVM degree or permission of department.

The pathophysiology of patients which are critically ill or injured will be discussed. Emphasis will be placed on applying these principles of pathophysiology to understanding the mechanism and response to therapy of syndromes involving the critical patient. Course format will be that of lecture, seminar, and literature review.

699A. Special problems. 2-5 hours.

801. Seminar in Medicine and Surgery. 1-3 hours. (Max. 3 hours.)

Prerequisite: DVM degree or equivalent and permission of department.

Graduate students and staff members will regularly participate in review and discussion of current research findings and methodology concerning medical and surgical disorders of animals.

Social Work (SW)

Bonnie L. Yegidis, *Dean*
James A. Pippin, *Graduate Coordinator*,
542-3364
(*Tucker Hall*)

The School of Social Work offers the MSW and the PhD degrees. The graduate professional curriculum is a six-quarter program leading to the Master of Social Work degree. Admission may be obtained by persons holding bachelor's degrees in any field which includes a liberal arts education if potential

for graduate professional education is demonstrated. Advanced standing may be awarded to selected applicants who are graduates of undergraduate social work programs accredited by the Council of Social Work Education. The program for applicants eligible for advanced standing is four quarters in length.

Graduate assistantships and federal traineeships are available in limited numbers. In addition, a few public and voluntary agencies offer stipends.

The program includes two field instruction experiences: the first is generalist and begins in the second quarter of study. The second is the concentration area and occurs in the fourth, fifth and sixth quarters of full-time study. Students may select either a concentration in children and youth and their families or adults and the aged and their families.

The School of Social Work also offers the PhD degree, with specialization in the development of knowledge for social work practice. The program includes advanced study in theory, research methods, assessment of practice, internship, and the dissertation. Admission criteria include the MSW, professional experience, and a strong academic record.

For the following 4-5 variable credit hour courses, students registering for only one course must register for five credit hours and complete extra assignments. Students carrying a full load must register for four credit hours in 600-level courses.

601. Social Work Professional Practice. 1-5 hours.

The generalist model of social work practice using the ecological perspective, values, history and structure of practice.

605. Social Work Methods I. 4-5 hours.

An ecological perspective to social work practice, encompassing multiple roles and social systems on behalf of individuals and families.

606. Social Work Methods II. 4-5 hours.

Prerequisite: SW 605.

An interactional approach to engaging groups, communities, and organizations grounded in the ecological social work perspective.

611A. Social Work Practicum and Integrative Seminar 1A. 4-10 hours.

Two hours lecture per week; 40 hours of practicum up to two hours lecture and 100 hours of practicum.

Prerequisite: SW 605 and 606 and 645 and 646 and 647 and 635 and 675.

An integration of knowledge, values, and skills for generalist practice, encompassing application of human behavior theory, multiple levels of intervention, and historic social welfare policy concerns.

611B. Social Work Practicum and Integrative Seminar 1B. 10-15 hours. (Max. 20 hours.) Four hours lecture per week; 4 lab periods of 7 hours per week.

Prerequisite: SW 611A.

A continuation of SW 611A.

635. Social Work Research Methods. 4-5 hours. Theory development, formulation of problems, measurements, and drawing conclusions and implications for use in professional social work practice.

645. Human Behavior and Social Environment I. 4-5 hours.

Theories that address problem definition and resolution and address person-in-environment fit; human biopsychosocial functioning across the life-span, and cultural, gender, and ethnic diversity; mental health issues, and function within families, groups, and communities.

646. Human Behavior and Social Environment II. 4-5 hours.

Prerequisite: SW 645.

The socio-cultural context of human behavior and various strategies of intervention at the family, group, and community levels, encompassing concepts of organizational structure and change as it relates to human services.

647. Cultural Diversity and Social Work Practice. 4-5 hours.

Personal and professional issues related to cultural and social diversity as a context for assessing and intervening effectively with diverse client populations.

652. Social Work with Abusing and Neglecting Families. 1-5 hours.

Prerequisite: SW 605.

An examination of current knowledge about child abuse and neglect. Implications for social policy and social work practice with families is emphasized.

675. Social Welfare Policy and Services. 4-5 hours.

The structures, functions, and policies of programs designed to ameliorate major social problems including the process of defining, establishing, shaping, and changing social policy.

Social Work

690B. Social Work Research. 1-10 hours. (Max. 10 hours.)

Readings course for the independent researching of a social welfare program under the direction of a faculty member.

695. Integrative Seminar for Advanced Practice. 1-5 hours.

Social work foundation knowledge, attitudes, and skills linked to advanced concentration practice. Emphasis on the ecological perspective as it applies to select fields of practice and problems of living.

700M. Master's Research. 1-10 hours. (Max. 10 hours.)

Prerequisite: Permission of school.

Research while enrolled for a master's degree under the direction of faculty members.

705. Social Work Education Practicum. 1-10 hours. (Max. 10 hours.)

Prerequisite: MSW degree and permission of school.

Individually structured participation in a variety of educational roles: curriculum design, coordination, class and field teaching.

707. Seminar on Social Work Practice with Individuals. 1-5 hours.

Prerequisite: SW 605 and 606.

Social work practice models and intervention procedures with focus on the individual client. Clinical skills emphasizing value and ethics for problem solving.

709. Social Work Treatment with Groups. 1-5 hours.

Prerequisite: SW 605 and 606.

Group approaches in social work practice with adults of all ages. Emphasis on group practice models which address persons at risk because of their race, gender, sexual orientation, or age.

711. Social Work Practicum II. 1-15 hours. (Max. 15 hours.)

Prerequisite: SW 611B.

Development of advanced problem-solving skills in social work practice. Theoretical explanations and justification of intervention processes and outcomes.

720A. Social Work and Health. 1-5 hours.

Introduction to the Social Worker's role in primary, secondary and tertiary health care.

721B. Social Work with Children and Youth: Public Policy. 1-5 hours.

Prerequisite: SW 675.

Skill development in techniques of social policy analysis with special attention to children and youth.

721D. School Social Work: Public Policy and Regulations. 1-5 hours.

Seminar is intended to examine a number of major issues affecting the provision of social services in the public schools.

721E. Social Work with Adults and the Aged: Public Policy. 1-5 hours.

Prerequisite: SW 675.

Skill development in techniques of social policy analysis with special attention to adults and the aged.

722A. Social Work and Health: Issues. 5 hours.

An integrative seminar focused on current social work and health issues.

722B. Social Work with Children and Youth: Issues. 1-5 hours.

Prerequisite: SW 611B.

Contemporary issues related to children and youth. Creating practice strategies and service delivery models for problem resolution and amelioration.

722C. Social Work and Mental Health: Issues. 5 hours.

Integrative seminar focused on current social work and mental health issues.

722E. Social Work with Adults and the Aged: Issues. 1-5 hours.

Prerequisite: SW 611B.

Contemporary issues related to adults and the aged. Creating practice strategies and service delivery models for problem resolution and amelioration.

730M. Master's Thesis. 1-10 hours. (Max. 10 hours.)

Prerequisite: Permission of school.

735. Evaluation Research in Social Work. 3-5 hours.

Prerequisite: SW 635 or permission of school.

Evaluation research and its various conceptualizations as stages in evaluation. The relationship and application to social work practice.

743. Seminar in Family Dynamics. 3-5 hours.

Family structure and dynamics through various stages in the developmental cycle, in responses to both "normal hazards" of everyday living and special circumstances. The family being seen as a matrix for individual development.

744. Social Work Treatment of Children and Adolescents. 1-5 hours.

Prerequisite: SW 605.

Social work practice specific to social treatment of the problems of children and adolescents.

745. Seminar in Marital Counseling Approaches. 3-5 hours.

Prerequisite: SW 746.

Analysis of selected problems with practice and differential aspects of assessment, treatment, and evaluation.

746. Seminar Treatment Approach with Families. 1-5 hours.

Prerequisite: SW 605.

Social work practice with diverse family forms. Family functioning compatible with the ecological system model and social work assessment and interventions with various groups at risk.

747. Seminar in Personality Development. 1-5 hours. (Max. 5 hours.)

Prerequisite: SW 611B or permission of school.

Various theories of personality development which emphasize cognitive, psychological, social and biological concepts. The emphasis is on the theoretical basis and diagnostic classification of mental disabilities.

748. Community Practice for Change and Development. 1-5 hours.

Prerequisite: Permission of school.

Social work issues, practice, methods, and techniques of organizing for change in programs and in agency and community policies. Dynamics of development, models of planning, and strategies of community organizing are presented.

749. Design and Finance of Human Services Systems. 1-5 hours.

Prerequisite: SW 646.

Human service management theories, policies, ethics, and methods in the development and management of organizational resources. Issues in system design and financing, strategic planning, staffing, consumer marketing and resource acquisition.

751. Psychosocial Aspects of the Middle and Later Years. 1-5 hours.

Prerequisite: SW 645.

An advanced human behavior course to examine theories of human development in middle and old age as related to social practice and social policy.

752. Seminar in Treatment Approach—Adults and the Aged. 3-5 hours.

Prerequisite: SW 605.

An advanced social work practice seminar on the application of various models and procedures of casework, group work and family treatment to the problems of adults in middle and old age.

761. Seminar in Social Work Supervision and Staff Development. 1-5 hours.

Prerequisite: Permission of school.

Seminar in social work supervision and staff development in a social service agency.

781. Theory and Practice of Social Work Consultation. 1-5 hours.

Examination and investigation of the theory and practice of consultation as used in social work, mental health, and other community service agencies. Focus aimed at purpose, issues in process, reporting, and evaluation.

788. Assessment and Psychopathology: Adults and the Aged. 1-5 hours.

Prerequisite: SW 611B.

Multidimensional assessment of current problems facing adults and the aged. Understanding the etiology and interaction of psychopathology with gender, race, and biological characteristics.

789. Assessment and Psychopathology: Children and Youth. 1-5 hours.

Multidimensional assessment of current problems facing children and youth. Understanding the etiology and interaction of psychopathology with gender, race, ethnicity, social class, and biological characteristics.

791. Social Work Practice with Children, Youth, and Their Families. 1-5 hours.

Prerequisite: SW 611B.

Advanced theory-based models and skills for children, youth, families. Direct practice methods with individuals in context of their environment.

792. Social Group Work with Children and Youth. 1-5 hours.

Advanced theory-based models and skills for children, youth, and their families. Direct practice methods with groups of children and youth in the context of their environment.

793. Social Work Community-Based Practice with Children and Youth. 1-5 hours.

Preventive and remedial interventions for vulnerable children and youth facing problems such as teen pregnancy, substance abuse, abuse and neglect. Community needs assessment, intervention, and evaluation.

809. Seminar on Theories of Social Work Practice. 5 hours.

Critical analysis of current social work practice theories, empirically based current practice trends, problems in the delivery of social work services, and problems in current practice and possible means for their solution.

810. Clinical Research Seminar I. 5 hours.

Conduct of nomothetic clinical research. Topics will include hypothesis development, experimental and quasi-experimental group research designs, logic of scientific inference, internal and external validity considerations.

811. Clinical Research Seminar II. 5 hours.

Prerequisite: SW 810.

Principles and conduct of single-subject research designs as strategies for scientific inference in social work.

816. Social Work Assessment. 5 hours.

Prerequisite: SW 810 and 811.

Theory and methods used to assess client system functioning, problems and treatment goals, for the purpose of conducting research on social work practice. Attention will be given to measurement issues and techniques, instrument design, analysis of validity and reliability.

822. Doctoral Seminar I. 5 hours.

Issues in the philosophy of social science and approaches to the development of social theory in social work.

823. Doctoral Seminar II. 5 hours.

Prerequisite: SW 822.

Dissemination of knowledge and its use in education for clinical practice. Theory and research on adult development and learning patterns are examined and implications drawn for teaching strategies in preparation for clinical social work practice. Issues needing further research are examined.

824. Doctoral Seminar III. 5 hours.

Prerequisite: SW 822 and 823.

Ethics and value issues in social work and research on its knowledge base. Major theories of ethics and their influence on professional programs and interventions are examined, along with ethical issues needing further research.

825. Doctoral Seminar IV. 5 hours.

Prerequisite: SW 822, 823 and 824.

Exploration of research projects within social work practice. Emphasis is placed on the evaluation of current research and theory in the development of research ideas by the student. Students will begin to present research topics and develop them into researchable projects, leading to the dissertation prospectus.

834. Research Practicum. 2-10 hours.(Max. 20 hours.)

Research techniques in clinical practice. Experiences will cover the conceptualization of a problem through collection and interpretation of data.

900D. Doctoral Research. 2-10 hours. (Max. 40 hours.)

Prerequisite: Permission of school.

Research while enrolled for a doctoral degree under the direction of faculty members.

910. Clinical Social Work Internship. 5-40 hours. (Max. 40 hours.)

Prerequisite: SW 810, 811, 816 and 822.

Application of research methods to study of clinical social work practice. Under faculty supervision, students will develop and test social work

interventions based upon current theories and practice, and will explore methods for the systematic evaluation of practice.

930D. Doctoral Dissertation. 1-15 hours. (Max. 30 hours.)

Prerequisite: Permission of school.

Sociology (SOC)

E. M. Beck, *Head*

Martha A. Myers, *Graduate Coordinator,*
542-3195
(Baldwin Hall)

The department offers programs leading to the degrees Master of Arts and Doctor of Philosophy in sociology. Specialized study is provided in five areas: comparative and development; organization, occupations and industrial; deviance, criminology and law; social psychology and culture; and race gender, and inequality. No foreign language is required for the master's or doctoral degrees.

The department has cooperative programs with the Women's Studies Program, the Public Administration Program, and the Center for Global Policy Studies. Research facilities include the Baldwin Data Analysis Center, the Institute for Behavioral Research, the International Laboratory for Sociopolitical Ecology, and the Survey Research Center.

604. Community Development. 5 hours.

Prerequisite: SOC 105 or equivalent.

A study of approaches, principles, techniques, and programs of comprehensive community development.

606. Education and Society. 5 hours.

Prerequisite: SOC 105 or 111 or 160 or permission of department.

A survey of theoretical and empirical research concerning the interaction of education and society. Topics include the influence of schools on achievement, college attendance, and occupational attainment, as well as the history of educational expansion, in the United States and other parts of the world.

609. Social Change. 5 hours.

Prerequisite: SOC 105 or equivalent.

The social process of social change; causes, types and theories of change.

615. Criminal Punishment and Society. 5 hours.

Prerequisite: SOC 105 or equivalent.
Review of principles of correction; field observation and analysis of current practices; evaluation of observations and development of career potential in various aspects of criminal justice administration.

616. Sociology of Development. 5 hours.

The course considers dominant themes in classical and modern theories of development and underdevelopment, examining them in the literature on macro-historical transitions, on comparative paths of development, and on agents of development, levels of analysis of development, and problems of development and social organization.

622. Development of Sociological Theory. 5 hours.

Prerequisite: SOC 105 or equivalent.
A survey of sociological theory in the 19th and early 20th Centuries, beginning with Comte and concluding with Merton, Parsons and Homans.

623. German Social Theorists. 5 hours.

Prerequisite: SOC 105.
An analysis of German sociological thought in the 19th and 20th Centuries. The course will focus on three major theorists (Marx, Simmel and Weber) and the three major systems of thought (critical theory, phenomenology, and the sociology of knowledge).

624. Sociology of War and the Military. 5 hours.

Prerequisite: SOC 105 or 111 or 160.
Origins, nature, experience, and future of warfare; modern military organization as a social institution; contemporary social issues surrounding militarism and the military.

627. Personality and Social Structure. 5 hours.

Prerequisite: SOC 105 or equivalent.
Foundation and development of personality; mechanisms of integration and adjustment; roles of culture, groups and language; concepts of self; types and theories of personality; deviant personalities.

629. Sociology of Religion. 5 hours.

Prerequisite: SOC 105.
An overview of religion as a social institution. The organization of religious groups, the integrative function of religion in social systems, and the influence of religious group membership on behavior in other institutional areas will receive special emphasis.

630. History of Sociological Thought. 5 hours.

A detailed study of the work of Marx, Weber, Durkheim, Simmel and Mead. At the choice of the instructor, secondary emphasis may be given to other theorists, such as Pareto, Toennies and Freud.

631. Rural Social Systems. 5 hours.

Prerequisite: SOC 105 or equivalent.
An investigation into the characteristics and the organization of the changing rural society. Analysis of the social organization of agriculture and rural-urban relations will be emphasized.

637. Race Relations in the United States. 5 hours.

Prerequisite: SOC 105 or equivalent.
An examination of the social problems associated with race and minority relations in contemporary American society.

640. (ANT) Socio-political Ecology. 5 hours.

Prerequisite: Graduate standing.
An examination of the complex relationships among human systems and their environments from the perspective socio-political ecology. Ecological theories and perspectives in the social and natural sciences are applied to understanding environmental policies and problems.

641. Current Trends in Sociological Theory. 5 hours.

Prerequisite: SOC 630 or permission of department.
An analysis of the major contemporary work in sociological theory with special emphasis on the points of continuity between current theories and the classical work of Durkheim, Mead, Marx, Weber and Simmel. Consideration is given primarily to North American and European theorists.

642. American Stratification Systems. 5 hours.

Prerequisite: SOC 105 or equivalent.
An analysis of the nature of social status systems, and of the form social stratification takes in the United States. Topics covered include: perception of class distinctions, prestige and power, criteria of status evaluation, class effects on social relationships and life-styles, class and personality development.

645. Foundations of Sociology: Structured Inequality. 5 hours.

Causes and effects of structured inequality in society are investigated. The classical works of Marx, Weber, and Veblen are considered as well as contemporary views, such as those of Parkin, Edwards, and Braverman.

Sociology

646. Foundations of Sociology: Population Studies. 5 hours.

Basic material in demographic methods, demographic theory, and the core areas within population studies will be covered. The emphasis will be on providing the technical skills and substantive background necessary for demographic research.

647. Foundations of Sociology: Deviance and Social Control. 5 hours.

The nature and consequences of deviance and current formal responses to deviant behavior will be examined. Conceptions, measures, and both traditional and contemporary explanations of deviant behavior will be considered.

648. Foundations of Sociology: The Structure of Human Societies. 5 hours.

This course explores the theories, concepts and method employed to understand the structure or organization of human societies. It also considers how societies change or evolve or develop over time. Both historical and contemporary views are examined.

649. Foundations of Sociology: Studies in Microsociology. 5 hours.

An analysis of the reciprocity of society and the individual. The course will reflect active lines of inquiry and conclusions drawn from sociological research in three areas: socialization, social interaction, and personality—social structure linkages.

659. Community Reconnaissance Methods. 5 hours.

Prerequisite: SOC 105 or equivalent; SOC 335.
A study and application of methods of research in community organization for action programs. The application will include schedule preparation, field interviews, analysis of data and preparation of community reports.

661. (CFD) The Family. 5 hours.

See CFD 661.

662. Analysis and Interpretation of Sociological Data I. 5 hours.

Prerequisite: STA 200 and MAT 116 or equivalents.
This course focuses on issues of causal and non-causal inferences from empirical observation, models of uncertainty, logic of data analysis, data graphics and batch summaries, and the role of social theory in data analysis.

663. Analysis and Interpretation of Sociological Data II. 5 hours.

Prerequisite: SOC 662.
This course explores issues of model construction, variable selection, measurement, and resistant estimation of data analytic models within sociological research.

665. Sociology of Aging. 5 hours.

Prerequisite: SOC 105 or equivalent.

An examination of the sociological approaches to aging, the status of older people, their roles in the community and society, demographic aspects of aging, and their interrelationships with society and social institutions.

666. Aging and Modernization: Cross-Cultural Studies. 5 hours.

Prerequisite: SOC 105 or equivalent or GNT 600.
An analysis of the aging experience in different societies and historical periods. The course will focus on differences in patterns of aging among societies of varying levels of modernization and on the impact on age relations of the transition from an agrarian economy to an industrial one.

672. Research Methods I: Foundations. 5 hours.

Prerequisite: STA 200 and MAT 116 or equivalents.
Foundations of research methods in sociology. Topics include the philosophical foundations of research practice, the variety of methodological traditions within sociology and strategies for empirical research.

674. Research Methods III: Practicum. 5 hours.

Prerequisite: SOC 673 or permission of department.
Seminar for the development and writing of the research practicum paper.

675. Qualitative Methods of Social Research. 5 hours.

Prerequisite: Graduate standing.
Technical and theoretical issue in field work, analysis and critique of works representing various qualitative methods, and firsthand experience in qualitative research.

680. Industrial Sociology. 5 hours.

Prerequisite: SOC 105 or equivalent.
A study of human relations in the industrial setting and the relationship of industrialization and the work environment to the worker, the community and the larger society.

683. Sociology of Law. 5 hours.

Prerequisite: SOC 105 or equivalent.
A study of the social nature of law, and how the legal system reflects the broader social context within which it exists. Topics include legal philosophy, legal systems, law and mental health, cross-cultural comparisons, and the legal profession.

685. Sociology of Occupations. 5 hours.

Prerequisite: SOC 105 or equivalent.
A comparative study of work positions and roles in modern American society with emphasis given to such topics as occupational choice, socialization, worker adjustment, prestige, and mobility.

700M. Master's Research. 1-15 hours. (Max. 10 hours.)

Prerequisite: Permission of department.
Research while enrolled for a master's degree under the direction of faculty members.

730M. Master's Thesis. 1-15 hours. (Max. 10 hours.)

Prerequisite: Permission of department.

800. Special Topics in Sociology. 5 hours.

Prerequisite: SOC 105 or equivalent.

Opportunity to do intensive study, on an individual basis, in the field of the graduate student's major interest.

801. Seminar on the Sociology of Culture. 5 hours. (Max. 10 hours with permission of department.)

Prerequisite: Graduate standing is required.

Critical approaches to the study of culture, including the Gramscian approach of the Birmingham Centre; poststructural and postmodern approaches; feminist theories of culture; and the critical theories of Adorno, Marcuse, and Agger.

820, 821, 822. Seminar in Sociological Theory and Research. 5 hours each.

A study of theoretical and methodological problems in substantive areas of sociology. Topics will vary with interests of the students and instructors.

828. Seminar in Gender Stratification. 5 hours.

Contemporary research and theories of gender equality and inequality in American society and cross-culturally. Gender stratification in public and private domains, and links between these sectors, and the intersection of gender with race, ethnicity, and social class.

838. Seminar in Sociological Analysis of Gender. 5 hours.

Exploration of contemporary theories of gender relationships in society, social construction of masculinity and femininity, and feminist critiques of traditional social science approaches to the analysis of gender. Special emphasis will be given to intersection of gender, race, and class in sociological theory and social life.

845. Seminar in Theory Construction. 5 hours.

Prerequisite: SOC 641.

A study of the nature and testing of scientific theory, with special reference to theory in sociology. The characteristics of formal axiomatic systems and their use as a basis for empirical theory will be discussed. Problems of deducing and testing theoretical propositions will be a central concern. Existing formal or semiformal theories in a selected area of sociology will be presented and critically appraised with respect to empirical adequacy, falsifiability, predictive and explanatory power, parsimony, and other criteria.

855. Seminar in Sociology of the Economy. 5 hours. (Max. 20 hours.)

This seminar will focus on topical issues arising from the social, economic, and political organization of contemporary society. Specific seminar content varies by instructor.

863. Advanced Research Methods: Empirical Model-Building in Sociological Research. 5 hours.

Prerequisite: STA 422/622 or SOC 663 or permission of department.

Advanced topics in sociological research including the application of simultaneous equations and confirmatory factor methods to the evaluation of structural and measurement models. The interplay between sociological theory and the construction and evaluation of empirical models is emphasized.

873. Theories of Social Psychology. 5 hours.

Prerequisite: SOC 630 or permission of department.

An advanced survey of theoretical and conceptual frames of reference that contribute to our knowledge of social psychology including consideration of such theories as cognitive consistency, social exchange, symbolic interaction, role theory, group process and collective behavior.

900D. Doctoral Research. 1-15 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

Research while enrolled for a doctoral degree under the direction of faculty members.

930D. Doctoral Dissertation 1-15 hours. (Max. 30 hours.)

Prerequisite: Permission of department.

Speech Communication (SPC)

Donald L. Rubin, *Head*

Thomas M. Lessl, *Graduate Coordinator,*
542-3259
(Terrell Hall)

The Department of Speech Communication offers programs leading to the PhD and MA degrees. PhD candidates select one of three tracks of study within the field of communication: (1) the interpersonal communication track, (2) the rhetoric track, or (3) the combined track, which emphasizes both inter-

personal communication and rhetoric. During their first year of study, students in the interpersonal communication track take SPC 820 in the fall and SPC 888 in the winter. Students in the rhetoric track take SPC 859 during the fall and SPC 801 during the winter of their first year of study. Students in the combined track take SPC 820 and SPC 859 in the fall and either SPC 888 or SPC 801 in the winter during their first year of study. Additional requirements for PhD candidates include: (1) research skills, (2) competence in two areas within communication, (3) four hours of SPC 805, the first two of which are taken during the winter and spring quarters of the first year of study, and the last two of which are taken during the fall and winter quarters of the second year of study, (4) comprehensive examinations, and (5) dissertation.

Requirements for the MA in speech communication include: (1) SPC 859 and SPC 820 during the fall quarter of the first year of study, (2) either SPC 801 or SPC 888 during the winter quarter of the first year of study, (3) four hours of SPC 805, the first two of which are taken during the winter and spring quarters of the first year of study, and the last two of which are taken during the fall and winter quarters of the second year of study, (4) writing requirement completed by the third quarter of the first year of study, (5) thesis, and (6) final oral examination on both the program of study and the thesis.

633. (HPB) Health Communication. 5 hours. Communication about health with physicians and other providers, within support groups and health care organizations, and by public figures, groups, and organizations.

656. Small Group Communication. 5 hours. Two double periods weekly. Prerequisite: SPC 321.

A study of the theory and techniques of group discussion with emphasis on current experimentation and research.

662. Communication Strategies in the Courtroom. 5 hours. Two double periods weekly. Prerequisite: SPC 360 or permission of department.

Examines modern communication theories and their application to legal proceedings.

663. Communication Strategies in Government. 5 hours. Two double periods weekly. Prerequisite: SPC 360 or permission of department.

A study of communication strategies and activities in the executive and legislative branches of American government with some emphasis on communication case studies.

664. Communication Strategies in Religion. 5 hours. Two double periods weekly. Prerequisite: SPC 301 and 360 or permission of department.

A study of the theory and practice of communication in religious settings. Emphasis will be placed on communication within particular religious communities and communication from such groups to society generally.

665. Communication Strategies in Political Campaigns. 5 hours. Two double periods weekly. Prerequisite: SPC 360 or permission of department.

The role communication plays in deciding which candidates will run for office, the nomination of candidates, and the election of candidates to office.

666. Psychology of Speech Communication. 5 hours. Two double periods weekly. Prerequisite: SPC 321 or permission of department.

A study of speech as a psychological phenomenon with consideration of the use of symbols, the speech personality, emotional reactions and mental processes in speech communication, and psychological studies of language and vocal and visual symbolism.

700M. Master's Research. 1-15 hours. (Max. 15 hours.) Prerequisite: Permission of department.

Research while enrolled for a master's degree under the direction of faculty members.

730M. Master's Thesis. 1-15 hours. (Max. 15 hours.) Prerequisite: Permission of department.

801. Seminar in Rhetorical Criticism. 5 hours. Advanced analysis of research and evaluation of contemporary methods and practice of the criticism of public discourse.

805. Research Practicum. 1 hour. (Max. 4 hours.) Prerequisite: Permission of department. Various aspects of the research process and the variety of research methods available in the field of Speech Communication.

811. Seminar in Classical Rhetorical Theory. 5 hours.

In-depth study of the rhetorical theories of the Graeco-Roman world, from the older Sophists to St. Augustine.

813. Seminar in Contemporary Rhetorical Theory. 5 hours.

Examination of most influential 20th Century scholarship in rhetorical theory.

820. Seminar in Interpersonal Communication Theory. 5 hours.

A study of major theories, models, and conceptualizations of interpersonal communication with emphasis on theory construction.

824. Seminar in Nonverbal Communication. 5 hours.

Prerequisite: SPC 424 or equivalent.

Study of nonverbal communication theory and research methods, including the areas of deception, territoriality and space, facial behavior, body movements and gestures.

845. Seminar in Interpersonal Communication. 5 hours. (Max. 10 hours.)

A readings and research seminar in theoretical topics of interpersonal communication. Areas of study will vary depending upon the timeliness of the seminar topic and the research focus of the instructor. Sample topics are communicative competencies and the role of communication in relational development.

859. Seminar in Rhetorical Theory. 5 hours.

Study of humanistic research and theory of public discourse acquaints students with theory construction and the history of rhetorical theory.

861. Seminar in Argumentation. 5 hours.

Prerequisite: SPC 801 and 859.

Examines argument from a rhetorical perspective focusing on reasoning as it occurs in a variety of public settings.

863. Topics in American Public Address. 5 hours. (Max. 15 hours.)

Prerequisite: SPC 801 and 859 or permission of department.

Study and research on topics in American Public Address, such as antebellum oratory or reconstruction rhetoric.

865. Topics in European Public Address. 5 hours. (Max. 15 hours.)

Prerequisite: SPC 801 and 859 or permission of department.

Study and research on topics in European public address, such as discourse on the American Revolution, Nazi rhetoric, or medieval preaching.

870. Topics in Rhetorical Theory. 5 hours.

(Max. 15 hours.)

Prerequisite: SPC 801 and 859 or permission of department.

Study of an announced topic, work, figure, or movement in rhetorical theory, such as Aristotle's works on rhetoric, the nature of rhetorical invention, or rhetoric and critical theory.

875. Topics in Methodologies of Rhetorical Criticism. 5 hours. (Max. 15 hours.)

Prerequisite: SPC 801 and 859 or permission of department.

Topics in methods of rhetorical criticism, with application to a variety of public discourse in different speech cultures.

888. Seminar in Empirical Research in Interpersonal Communication. 5 hours.

Prerequisite: SPC 820.

Analysis of the design and execution of empirical research in interpersonal communication.

900. Directed Study and Research in Speech Communication. 5 hours. (Max. 15 hours.)

Prerequisite: Two graduate courses in speech communication.

Individual directed study or research in selected areas of speech communication.

900D. Doctoral Research. 1-15 hours. (Max. 60 hours.)

Prerequisite: Permission of department.

Research while enrolled for a doctoral degree under the direction of faculty members.

930D. Doctoral Dissertation. 1-15 hours. (Max. 60 hours.)

Prerequisite: Permission of department.

Statistics (STA)

Robert L. Taylor, *Head*

Kermit Hutcheson, *Graduate Coordinator,*
542-8232

(*Statistics Building*)

The Department of Statistics offers a Master of Science (MS) degree in statistics, a Doctor of Philosophy (PhD) degree in statistics, and a Master of Applied Mathematical Science (MAMS) degree. The MS degree has two options, one in applied statistics and the other in mathematical statistics. In both options, preparation of an MS thesis is optional. The thesis option requires a minimum of 40 quarter hours of graduate credit exclusive of thesis and the non-thesis option requires a minimum of 55 quarter hours. The

Statistics

PhD degree requires basic core course work equivalent to the mathematical statistics option of the MS degree plus work in advanced probability and inference; otherwise, the student can select advanced course work according to his own special interests.

Graduate students in the department may expect to have assignments that include teaching, applied research and consulting experience in addition to their course work and the basic research experience involved in completing their dissertation. A close association exists between the University Computer Center and the Department of Statistics and thus the computational facilities of the center are available to graduate students for the more complex or lengthy computations. In addition, the department maintains computational and data preparation laboratories, including its own computer system of thirty Sun Workstations and thirty supermicrocomputers. Two labs containing Sun Workstations, ATs, PRO/380 microcomputers, a SPARC 10 files server and a SPARC 20 computer server provide the user with the versatility of in-house computing.

Courses in advanced calculus and linear algebra are required as prerequisites for all graduate students in statistics.

610. Applied Stochastic Processes. 5 hours.

Prerequisite: MAT 255 and 256.

Basic concepts of applied probability as an introduction to stochastic processes including discrete, continuous and conditional probability concepts. Definitions and properties of stochastic processes. Markov processes and chains, basic properties, transition matrices and steady states. Reliability, renewal and queueing processes. Queueing theory, expected waiting times, single and multiserver queues.

621. Statistical Methods I. 5 hours.

Prerequisite: Credit for or exemption from MAT 102.

Basic concepts of statistical models, descriptive statistics, basics of probability, expectation, variance, probability distributions, point and interval estimation of parameters, concepts of hypothesis testing, goodness-of-fit tests and contingency tables. Special sections for social scientists and biological scientists; these sections are designated in the *Schedule of Classes*.

622. Statistical Methods II. 5 hours.

Prerequisite: STA 421/621.

Regression analysis including simple linear regression, multiple regression, model checking and analysis of residuals, correlations and prediction; analysis of variance including basic concepts, completely randomized design, randomized block design, factorial designs, interaction, and covariance. Special sections for social scientists and biological scientists; these sections are designated in the *Schedule of Classes*.

623. Applied Regression Analysis. 5 hours.

Prerequisite: STA 422/622 or permission of department.

Study of applied methods in regression analysis. Topics include review of simple linear regression, techniques of multiple regression and model building, multiple and partial correlation, analysis of variance as a regression analysis, comparison of various regression models, analysis of covariance, selecting the best regression equation, analysis of residuals.

624. Sampling and Survey Methods. 5 hours.

Prerequisite: STA 421/621.

Design of sample surveys, biases, variances and cost estimators. Comparison of simple random sampling, ratio estimation, stratification, multi-stage sampling.

625. Environmental Statistics. 5 hours.

Prerequisite: STA 422/622.

Methods for sampling the environment and data analysis, including spatial statistics, environmental variables, environmental toxicology, and epidemiology.

626. Statistical Quality Assurance. 5 hours.

Prerequisite: STA 422/622.

Basic graphical techniques and control charts. Experimentation in quality assurance. Sampling issues. Other topics include process capability studies, error analysis, SPRT, estimation and reliability.

628. Applied Time Series Analysis. 5 hours.

Prerequisite: STA 422/622.

Autoregressive, moving average, autoregressive-moving average, and integrated autoregressive-moving average processes; seasonal models; autocorrelation function; estimation; model checking; forecasting; spectrum, spectral estimators.

629. Non-Parametric Methods. 5 hours.

Prerequisite: STA 421/621.

Techniques and application of non-parametric tests. Estimates, confidence intervals, one sample tests, two sample tests, analysis of variance, correlation tests.

636. Statistical Computation. 5 hours.

Prerequisite: CS 201 or 500/700, MAT 256, STA 422/622.

Algorithms for data analysis computation, characteristics of the criteria for evaluating statistical packages, use of and interpretation of output from current statistical packages.

638. Survival Analysis. 5 hours.

Prerequisite: STA 422/622.

Methods for comparing time-to-event data, including univariate parametric and nonparametric procedures, regression models, diagnostics, group comparisons, and some multivariate methods.

651. Statistical Theory I. 5 hours.

Prerequisite: MAT 255 or equivalent.

Concepts and properties of standard statistical distributions.

652. Statistical Theory II. 5 hours.

Prerequisite: STA 451/651.

Theory of statistical inference.

671, 672, 673. (MAT) Introduction to Probability Theory. 3 hours each.

See MAT 671, 672, 673.

681. Statistical Inference I. 5 hours.

Prerequisite: STA/MAT 471/671 or equivalent.

Important statistical distributions; properties of sampling distributions; sufficiency; principles of estimation, maximum likelihood estimators, moment estimators; properties of estimators, point estimators, interval estimators.

682. Statistical Inference II. 5 hours.

Prerequisite: STA/MAT 471/671 and 472/672 or equivalent and STA 681.

Theory of hypothesis testing, decision theory, analysis of discrete data and non-parametric tests.

700M. Master's Research. 1-15 hours. (Max. 40 hours.)

Prerequisite: Permission of department.

Research while enrolled for a master's degree under the direction of faculty members.

710T. Technical Report. 5 hours. (Max. 10 hours.)

Prerequisite: 40 hours of 600- or 800-level courses. For use with the professional Master's degree in Applied Mathematical Science.

730M. Master's Thesis. 1-15 hours. (Max. 30 hours.)

Prerequisite: Permission of department.

806. Computing Techniques in Statistics I. 5 hours.

Prerequisite: CS 201 and STA 422/622 and one course in mathematics with MAT 255 as prerequisite: programming experience in one compiler language.

Review of programming languages. Techniques for evaluation of important statistical distribution functions, least squares, general linear model, error propagation.

807. Computing Techniques in Statistics II. 5 hours.

Prerequisite: STA 806.

A continuation of STA 806. Multivariate distribution functions, random number generators, optimization, nonlinear estimation.

809. (GN) Statistical Analysis of Genetic Data. 5 hours.

See GN 809.

817. Probability Theory I. 5 hours.

Prerequisite: MAT 455/655.

Probability spaces, properties of distributions, random variables, expectations and characteristic functions. Independent events and random variables are studied, and the Borel-Cantelli lemmas and Kolmogorov's zero-one law are developed. Conditional expectations, conditional probabilities, and related properties are included along with exchangeability and deFinetti's theorem.

818. Probability Theory II. 5 hours.

Prerequisite: STA 817.

Stochastic convergence, laws of large numbers, forms of central limit theorems and rates of convergence.

820. Design of Experiments for Research Workers. 5 hours.

Prerequisite: STA 422/622.

Methods for constructing and analyzing designs of experimental investigations; concepts of blocking; randomization and replication; experimental unit technique; complete block designs; confounding in factorial experiments; fractional replication; incomplete block designs.

822. Clinical Trials. 5 hours.

Prerequisite: [STA 422/622 and 451/651] or permission of department.

Statistical methods relating to new drug development in the pharmaceutical industry.

825. Multivariate Methods. 5 hours.

Prerequisite: STA 422/622.

Multivariate tests of hypotheses, confidence regions, multivariate analysis of variance, discriminatory analysis, factor analysis, correlations.

826. Linear Statistical Analysis. 5 hours.

Prerequisite: STA 422/622 and 451/651.

Analytical theory of least squares, general linear model, application to designs.

827. Spatial Statistics. 5 hours.

Prerequisite: [STA 452/652 or equivalent] and STA 826.

Theoretical foundations of spatial statistics, models for spatial data, and methods for model fitting, statistical inference, and spatial prediction. Analysis of lattice data, images, continuous spatial variation and spatial point pattern.

Statistics

828. Time Series Analysis. 5 hours.

Prerequisite: STA 452/652 or 682.

Stationary and nonstationary processes, properties of models, estimation of model parameters, spectral analysis, forecasting.

829. Advanced Experimental Design. 5 hours.

Prerequisite: STA 820 and 451/651 or 681 and 826.

Selected topics in the field of experimental design.

830. Multivariate Analysis. 5 hours.

Prerequisite: STA 452/652 or 682.

Selected topics in the theory of multivariate analysis at an advanced level.

853. Advanced Statistical Inference I. 5 hours.

Prerequisite: STA 682.

Corequisite: STA 817 or MAT 817.

Brief review of terminology in probability and distribution theory; sufficiency, exponential families and completeness; point estimation; comparison and general properties of estimators.

854. Advanced Statistical Inference II. 5 hours.

Prerequisite: STA 853.

Asymptotic properties of estimators, uniformly most powerful tests, unbiased tests, testing hypotheses about the normal distribution.

855. Advanced Statistical Inference III. 5 hours.

Prerequisite: STA 854.

For advanced graduate studies in various areas of specialization in statistical inference not specifically covered by other courses.

857. Statistical Decision Theory. 5 hours.

Prerequisite: STA 853.

Game theory and decision theory, the main theorems of decision theory, conjugate prior distributions and limiting posterior distributions, sequential decision problems, empirical Bayes's method of estimation.

860. Advanced Theory of Ranking and Selection. 5 hours.

Prerequisite: STA 817 and 853.

Theoretical treatment on ranking populations and selecting the best ones, multiple comparisons with the best, hypothesis testing with ranking and selection, indifference zone selection, subset selection, nonparametric selection and estimation of ranked parameters.

862. Analysis of Discrete Data. 5 hours.

Prerequisite: STA 422/622 and 451/651 or 681.

Review of standard discrete distributions and generating functions, simple contingency tables, multi-dimensional tables, log-linear models, generalized X^2 -tests, regression and analysis of variance with discrete variables.

865. Bootstrapping Techniques. 5 hours.

Prerequisite: STA 452/652 or 862.

Introduction to the Jackknife and the Bootstrap methods including asymptotic properties and simulation evaluation.

870. Stochastic Processes. 5 hours.

Prerequisite: MAT/STA 473/673 or permission of department.

Discrete and continuous Markov processes, birth and death processes, diffusion theory and power spectra.

871. Advanced Topics in Stochastic Processes. 5 hours. (Max. 20 hours.)

Prerequisite: Permission of department.

Advanced topics in selected areas of stochastic processes.

873. Sequential Analysis. 5 hours.

Prerequisite: STA 452/652 or 682.

Sequential Probability Ratio Test, Two-sided Tests, Composite Tests, Truncated Sequential Tests, Brownian Motion Approximations, Tests with Curved Boundaries, Repeated Significance Tests, Secretary-Type Problems, Sequential Allocation of Treatments, Two Armed-Bandit Problems, Sequential Interval Estimation, Sequential Estimation of Points on Regression Functions, Robbins-Munrow Process, Chow-Robbins Method, and Kiefer-Wolfowitz Procedure.

890. Advanced Problems in Statistics. 5 hours. (Max. 45 hours.)

Prerequisite: Permission of department.

Selected topics concerning recent developments in statistics.

891. Statistical Seminar. 1-5 hours. (Max. 30 hours.)

Prerequisite: Permission of department.

900. Research in Statistics. 1-15 hours. (Max. 60 hours.)

Prerequisite: 40 hours at 600 or 800 level.

Individual research in statistics under supervision.

900D. Doctoral Research. 1-15 hours. (Max. 80 hours.)

Prerequisite: Permission of department.

Research while enrolled for a doctoral degree under the direction of faculty members.

927. Supervised Statistical Consulting I. 3 hours.

Prerequisite: STA 422/622 or equivalent and STA 451/651 or equivalent.

To develop statistical consulting skills ranging from basic concepts relating to how to formulate the exact nature of the client's problem, to solving it and presenting the solution in the language of the client.

928. Supervised Statistical Consulting II. 3-5 hours. (Max. 30 hours.)

Prerequisite: STA 820 and 927.

To develop advanced statistical consulting skills. (Only six hours of credit may be used toward the master's degree.)

930D. Doctoral Dissertation. 1-15 hours. (Max. 30 hours.)

Prerequisite: Permission of department.

Veterinary Anatomy and Radiology (VAR)

Royce E. Roberts, *Head*
Sharon L. Crowell-Davis, *Graduate Coordinator, 542-8343*
(*Veterinary Medicine Building*)

Veterinary anatomy currently offers the MS degree. The program is available to all qualified students holding professional degrees in the healing arts as well as to graduate students having a strong biological background. Programs of study are available in the general area of microscopic and gross anatomy, embryology, neuroanatomy, electron microscopy, and radiology. All programs are strongly slanted toward a comparative approach and students are not limited to a particular species for research purposes.

Students interested in comparative anatomical study programs should contact this department directly to determine specific requirements.

603-603L. Veterinary Histology. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: Permission of department.

Veterinary applications of microscopic structure and organization of the tissues of domestic animals.

607. Neuroanatomy of Domestic Animals. 5 hours.

Prerequisite: VAR 515/715, 516/716 or permission of department.

A lecture, laboratory and seminar course of the gross, microscopic and ultrastructural aspects of neuroanatomy presented from a comparative viewpoint using the dog as the basic animal. Open to all qualified graduate or undergraduate students in the biological sciences.

700M. Master's Research. 1-15 hours. (Max. 40 hours.)

Prerequisite: Permission of department.

Research while enrolled for a master's degree under the direction of faculty members.

703. (BIO/CB) Electron Microscopy Laboratory. 2 hours.

See BIO 703.

704. (BIO/CB) Scanning and Analytical Electron Microscopy. 3 hours.

See BIO 704.

705. (BIO/CB) Scanning Electron Microscopy Laboratory. 2 hours.

See BIO 705.

711. Practicum in Teaching Gross Anatomy. 6 hours. (Max. 18 hours.)

Prerequisite: VAR 516A/716A or 516B/716B or 516C/716C or equivalent or permission of department.

Experience in laboratory instruction on gross anatomy of domestic animals. Various methods of presentation of subject matter and student evaluation will be compared and discussed.

714A. Veterinary Animal Behavior. 2 hours.

Prerequisite: First year veterinary curriculum or permission of department.

Diagnosis and treatment of common animal behavior problems.

715A. Principles of Veterinary Anatomy. 6 hours. (Max. 18 hours.) Five hours lecture per week and one 2-hour lab period per week.

Prerequisite: First year veterinary curriculum or permission of department.

Anatomic principles of each system of domestic animals.

716A. Laboratory in Anatomy of the Dog and Cat. 5.5 hours. (Max. 16.5 hours.) Five 3-hour lab periods per week.

Prerequisite: VAR 515A/715A.

Gross anatomy of the dog and cat correlated with palpation of the live animal and radiographic anatomy with comparison to the horse and food animals. Emphasis is on the anatomy necessary to understand surgical procedures and clinical diagnosis.

716B. Laboratory in Anatomy of the Horse. 5.5 hours. (Max. 16.5 hours.) Five 3-hour lab periods per week.

Prerequisite: VAR 515A/715A.

Gross anatomy of the horse correlated with palpation of the live animal and radiographic anatomy with comparison to the dog, cat, and food animals. Emphasis is on the anatomy necessary to understand surgical procedures and clinical diagnosis.

716C. Laboratory in Anatomy of Food Animals. 5.5 hours. (Max. 16.5 hours.) Five 3-hour lab periods per week.

Prerequisite: VAR 515A/715A.

Gross anatomy of food animals, mainly by dissection, correlated with palpation of the live animal and radiographic anatomy with comparison made to the dog, cat, and horse. Emphasis is on the anatomy necessary to understand surgical procedures and clinical diagnosis.

730M. Master's Thesis. 1-15 hours. (Max. 40 hours.)

Prerequisite: Permission of department.

734. Clinical Problems of Animal Behavior. 1-5 hours. (Max. 20 hours.)

Prerequisite: Permission of department.

Students will observe and participate in the diagnosis and treatment of animals with behavior problems. Review of literature on current cases.

801. Problems in Veterinary Anatomy. 1-5 hours. (Max. 50 hours.)

Prerequisite: Two senior division courses in biology. Designed to allow graduate students the opportunity to explore, under supervision, anatomical problems of their choice. These may be in areas of gross or microscopic anatomy. Open to graduate students in the biological sciences meeting the course prerequisites.

803. Advanced Veterinary Histology. 5 hours. Prerequisite: VAR 517, 518 or equivalent and permission of department.

A lecture, laboratory and seminar course to acquaint the student with histological variations in the structure of organ systems of domestic animals. Functional aspects based on comparative morphology will be stressed. Open to all qualified graduate students in any area of the biological sciences.

805. Special Radiographic Procedures. 5 hours. (Max. 10 hours.)

Prerequisite: VAR 531 or equivalent.

A series of lectures, discussion seminars and laboratory exercises designed to meet the needs of and encourage the students in the methods and interpretation of special radiographic procedures. These findings are correlated with survey radiography.

810. Fine Structure of Animal Tissues. 6 hours. Prerequisite: CB 400/600-400L/600L or equivalent and permission of department.

The contributions of the electron microscope and related techniques to the understanding of tissue fine structure will be presented and discussed. Emphasis will be placed on giving the student a basis for interpretation of electron micrographs in

a variety of animal tissues. Cellular and extracellular morphologic specializations will be related to the function of the tissue or organ.

834A. (PSY) Seminar in Applied and Domestic Animal Behavior. 1-5 hours. (Max. 15 hours.)

Prerequisite: Permission of department.

This seminar emphasizes the evaluation of research, development of theory and practical applications of research on animal behavior, or a recent book on the subject will be evaluated.

890. Seminar in Veterinary Anatomy. 1 hour. (Max. 10 hours.)

Prerequisite: Permission of department.

Regular meetings devoted to discussion of current research and topics of interest in the morphologic sciences.

934. Practicum in Clinical Animal Behavior. 1-10 hours. (Max. 20 hours.)

Prerequisite: VAR 734 or permission of department.

Diagnosis and treatment of animals with behavior problems. Includes pharmacologic, surgical, and behavior modification treatment techniques.

Veterinary Medicine (VET)

710. Veterinary Ethics and Jurisprudence. 1 hour.

The principles of veterinary medical ethics and the basic laws and regulations governing veterinary medicine.

Women's Studies (WS)

Patricia Del Rey, *Director*
542-2846
(230K Main Library)

Please see the Index for information on the certificate program in women's studies. The courses having a women's studies prefix are listed below.

601. Introduction to Feminist Theory. 5 hours. Interdisciplinary investigation of the historical origins, philosophical assumptions and political implications of contemporary feminist theories.

610. Lesbian and Gay Studies. 5 hours.

Prerequisite: Five hours of women's studies or permission of department.

Multicultural, interdisciplinary investigation of same-sex desire, heterosexuality, homosexuality and the regulation of sexual identities across different racial/ethnic and class/regional communities. Focusing on Native-American, African-American, Latino, Asian-American and international studies, with texts from law, anthropology, history, film, fiction, and theory.

612. Biology and Politics of Women's Reproduction. 5 hours.

Prerequisite: Five hours of women's studies or permission of department.

Variations in experiences across women's reproductive life cycles from the perspective of evolutionary biology and the political theory of radical feminism. Topics include puberty, sexual cycling, menarche, pregnancy, child birth, and menopause. Feminist critiques of science are explored.

625. Special Topics in Women's Studies. 5 hours. (Max. 20 hours.)

Prerequisite: Five hours of women's studies coursework.

Ongoing and current topics of scholarly interest in women's studies.

699. Directed Research in Women's Studies. 1-5 hours. (Max. 10 hours.)

Prerequisite: Five hours in women's studies coursework and permission of department.

Readings and independent research closely supervised by a faculty member on a specified interdisciplinary topic in women's studies.

701. Women and the Construction of Knowledge. 5 hours.

Prerequisite: WS 601 or permission of department. Interdisciplinary literature on women's approaches to thinking, learning and the production of knowledge; inclusiveness of academic disciplines to women's lives and experiences; whether distinctive feminist methods exist within academic disciplines; and women's status as participants in disciplines and universities.

802. Seminar in Advanced Feminist Theory. 1-5 hours. (Max. 15 hours.)

Prerequisite: WS 401/601 or permission of department.

Topics in feminist theory.

Graduate Faculty

1996-97



Graduate Faculty

Ex-Officio Members

Knapp, Charles B., *President of the University and Professor of Economics*
Ph.D., Wisconsin (Madison)

Key, Joe L., *Vice President for Research and Research Professor of Botany*
Ph.D., Illinois (Urbana-Champaign)

Prokasy, William F., *Vice President for Academic Affairs and Professor of Psychology*
Ph.D., Wisconsin (Madison)

Younts, S. Eugene, *Vice President for Services and Professor of Crop and Soil Sciences*
Ph.D., Cornell

Potter, William Gray, *Director of the Libraries*
Ph.D., Illinois (Urbana-Champaign)

Anderson, David P., *Dean of the College of Veterinary Medicine and Professor of Avian Medicine*
Ph.D., Wisconsin (Madison)

Anderson, Wyatt W., *Dean of the College of Arts & Sciences and Alumni Foundation Distinguished Professor of Genetics*
Ph.D., Rockefeller

Buchanan, Gale A., *Dean and Director of the College of Agricultural and Environmental Sciences and Professor of Crop and Soil Sciences*
Ph.D., Iowa

Dawson, Kerry J., *Dean of the School of Environmental Design, Constance Knowles Draper Professor of Environmental Design and Adjunct Professor of Horticulture*
M.L.A., California (Berkeley)

Feldman, Stuart, *Dean of the College of Pharmacy and Professor of Pharmaceutics*
Ph.D., State University of New York (Buffalo)

Mace, Arnett C., Jr., *Dean of the School of Forest Resources, Professor of Forest Resources and Associate Director of Forestry Research College*
Ph.D., Arizona

Nickols, Sharon Y., *Dean of the College of Family and Consumer Sciences and Professor of Housing and Consumer Economics*
Ph.D., Missouri (Columbia)

Niemi, Albert W., Jr., *Dean of the Terry College of Business, Simon S. Selig Jr. Chair of Economics and Director of Simon S. Selig Center for Economic Growth*
Ph.D., Connecticut

Patel, Gordhan L., *Dean of the Graduate School and Professor of Cellular Biology and Biochemistry and Molecular Biology*
Ph.D., Washington University

Russell, John Thomas, *Dean of the College of Journalism and Mass Communication and Professor of Advertising/Public Relations*
Ph.D., Illinois (Urbana-Champaign)

Spurgeon, Edward D., *Dean of the School of Law and Professor of Law*
L.L.M., Stanford

Yeany, Russell H. Jr., *Dean of the College of Education and Professor of Science Education*
Ph.D., Colorado (Boulder)

Yegidis, Bonnie L., *Dean of the School of Social Work and Professor of Social Work*
Ph.D., South Florida

Appointed Members*

- Adams, Henry Earl, *Research Professor of Psychology*
Ph.D., Louisiana State (Baton Rouge)
- Adams, Malcolm R., *Professor of Mathematics*
Ph.D., Massachusetts Institute of Technology
- Adams, Michael W., *Professor of Biochemistry and Molecular Biology and Adjunct Professor of Microbiology*
Ph.D., London
- Adams, Nigel Graham, *Research Professor of Chemistry*
D.Sc., Birmingham
- Adang, Michael J., *Professor of Entomology*
Ph.D., Washington State
- Adriano, Domy C., *Professor of Crop and Soil Sciences and Senior Research Scientist at the Savannah River Ecology Lab*
Ph.D., Kansas State
- Affolter, James Martin, *Assistant Professor of Horticulture*
Ph.D., Michigan (Ann Arbor)
- Agee, William Hugh, *Professor of Language Education*
Ph.D., Florida State
- Ainsworth, Scott H., *Assistant Professor of Political Science*
Ph.D., Washington
- Akin, Danny Earl, *Adjunct Professor of Crop and Soil Sciences*
Ph.D., Georgia
- Akoh, Casimir C., *Associate Professor of Food Science and Technology and Adjunct Associate Professor of Foods and Nutrition*
Ph.D., Washington State
- Albersheim, Peter, *Research Professor of Biochemistry and Molecular Biology, Botany, Chemistry and Plant Pathology and Co-Director for the Center of Complex Carbohydrate Research*
Ph.D., California Institute of Technology
- Alexander, Alison F., *Professor of and Department Head of Telecommunications and Director of Olympic Host Broadcast Training Program*
Ph.D., Ohio State
- All, John Norman, *Professor of Entomology*
Ph.D., Wisconsin (Madison)
- Allen, Christopher S., *Associate Professor of Political Science*
Ph.D., Brandeis
- Allen, Joseph Dana, III, *Professor of and Department Head of Psychology*
Ph.D., Southern Illinois (Carbondale)
- Allen, Joyce E., *Professor of Language Education*
Ed.D., Kansas
- Allinger, Norman Louis, *Research Professor of Chemistry and Director of the Computational Center for Molecular Structure and Design*
Ph.D., California (Los Angeles)
- Allison, James Madison, *Professor of Biological and Agricultural Engineering and Associate Director of Academic Programs for the College of Agricultural and Environmental Sciences*
Ph.D., Cornell
- Alvarez, Leonardo, *Associate Professor of Environmental Design*
M.L.A., Harvard
- Alvermann, Donna E., *Research Professor of Reading Education*
Ph.D., Syracuse
- Ames, Glenn Clifford Webster, *Professor of Agricultural and Applied Economics*
Ph.D., Tennessee (Knoxville)
- Ammerman, John A., *Associate Professor of Drama and Theatre*
M.F.A., Georgia
- Ammons, David N., *Adjunct Associate Professor of Political Science and Senior Public Service Associate in the Institute of Government*
Ph.D., Oklahoma (Norman)
- Amos, Henry E., *Professor of Animal and Dairy Science*
Ph.D., Kentucky
- Amster, I. Jonathan, *Associate Professor of Chemistry*
Ph.D., Cornell
- Anderson, Douglas A., *Associate Professor of English*
Ph.D., Virginia
- Anderson, James C., Jr., *Professor of Classics*
Ph.D., North Carolina (Chapel Hill)

*Membership as of December 1, 1995

- Anderson, James L., *Professor of Chemistry*
Ph.D., Wisconsin (Madison)
- Anderson, Robert Leonard, *Professor of Physics*
Ph.D., Wayne State
- Anderson, Wyatt W., *Alumni Foundation Distinguished Professor of Genetics and Dean of College of Arts & Sciences*
Ph.D., Rockefeller
- Annis, Patricia A., *Associate Professor of Textiles, Merchandising & Interiors*
Ph.D., Kansas State
- Arabnia, Hamid R., *Associate Professor of Computer Science*
Ph.D., Kent (Canterbury)
- Arant, Everett Pierce, Jr., *Professor of Music*
Ed.D., Georgia
- Arias, Ileana, *Associate Professor of Psychology*
Ph.D., State University of New York (Stony Brook)
- Armitage, Allan Munro, *Professor of Horticulture*
Ph.D., Michigan State
- Arnold, Jonathan, *Associate Professor of Genetics and Adjunct Associate Professor of Statistics*
Ph.D., Yale
- Arnold, Michael L., *Associate Professor of Genetics and Adjunct Associate Professor of Botany*
Ph.D., Australian National
- Aron, Dennis N., *Professor of Small Animal Medicine*
D.V.M., Ohio State
- Aronson, Jay E., *Associate Professor of Management*
Ph.D., Carnegie-Mellon
- Ashley, Doyle Allen, *Professor of Crop and Soil Sciences*
Ph.D., North Carolina State
- Asmussen, Marjorie Ann, *Professor of Genetics and Mathematics*
Ph.D., Stanford
- Assaf, Francis Beshara, *Professor of Romance Languages*
Ph.D., California (Berkeley)
- Atkinson, Scott E., *Professor of Economics*
Ph.D., Colorado (Boulder)
- Atwater, Mary M., *Associate Professor of Science Education*
Ph.D., North Carolina (Chapel Hill)
- Awise, John Charles, *Research Professor of Genetics*
Ph.D., California (Davis)
- Azain, Michael J., *Associate Professor of Animal and Dairy Science and Adjunct Associate Professor of Foods and Nutrition*
Ph.D., Oklahoma
- Azoff, Edward Arthur, *Professor of Mathematics*
Ph.D., Michigan (Ann Arbor)
- Babcock, Lucia M., *Associate Professor of Chemistry*
Ph.D., City University of New York (Brooklyn)
- Bachtel, Douglas Charles, *Professor of Housing and Consumer Economics*
Ph.D., Ohio State
- Bacon, Charles W., *Adjunct Assistant Professor of Plant Pathology*
Ph.D., Michigan (Ann Arbor)
- Bailey, Joseph Stanley, *Adjunct Senior Research Scientist in Poultry Science*
Ph.D., Georgia
- Bailey, Robert L., *Professor of Forest Resources*
Ph.D., Georgia
- Baker, Francis Todd, *Professor of and Department Head of Physics and Astronomy*
Ph.D., Michigan (Ann Arbor)
- Baker, Jerome F., *Associate Professor of Animal and Dairy Science*
Ph.D., Texas A&M
- Balkwell, James William, *Professor of Sociology*
Ph.D., Michigan State
- Bamber, E. Michael, *Associate Professor of Accounting*
Ph.D., Ohio State
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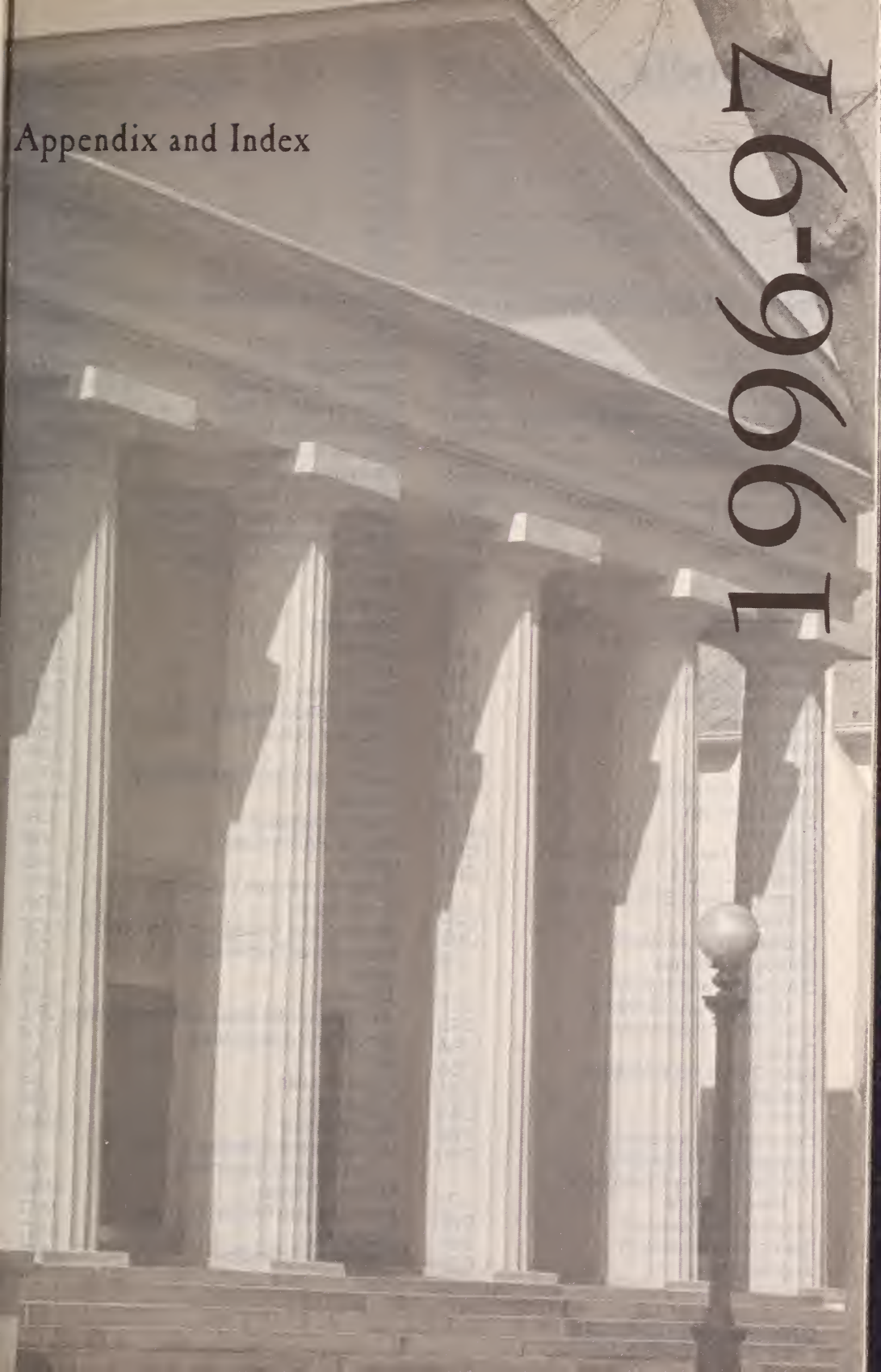
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- Zeichner, Amos, *Professor of Psychology*
Ph.D., McGill
- Zhang, Qing, *Assistant Professor of Mathematics*
Ph.D., Brown
- Zimdars, Richard L., *Professor of Music*
D.M.A., Iowa
- Zimmer, Mary Ruth, *Associate Professor of Marketing and Distribution*
Ph.D., Texas (Austin)

Appendix and Index

1996-97
76-966 I



Appendix

Prefix Abbreviations

Accounting	ACC	Engineering Technology	ET
Adult Education	EAD	English	ENG
African American Studies	AAM	English Education	EEN
Agricultural and Applied Economics	AAE	Entomology	ENT
Agricultural Education	EAG	Environmental Design	ENV
Agricultural Extension	AET	Environmental Ethics	ETH
Agriculture	AGR	Environmental Health Science	EHS
Animal and Dairy Science	ADS	Exercise Science	EXS
Animal Nutrition	AN	Foods and Nutrition	FDN
Anthropology	ANT	Food Science and Technology	FS
Arabic	ARB	Foreign Language Education	EFL
Art	ART	Forest Resources	FRS
Art Education	EAR	Foundations of Education	EFN
Artificial Intelligence	AI	French	FR
Astronomy	AST	Genetics	GN
Avian Medicine	AM	Geography	GGY
Banking and Finance	FIN	Geology	GLY
Biochemistry	BCH	German	GER
Biology	BIO	Gerontology	GNT
Botany	BOT	Global Policy Studies	GPS
Business Education	EBE	Graduate School	GSC
Cellular Biology	CB	Greek	GRK
Chemistry	CHM	Health Promotion and Behavior	HPB
Child and Family Development	CFD	Hebrew	HBW
Classical Culture	CLC	Higher Education	EHI
Communication Sciences and Disorders	CSD	Historic Preservation	HP
Comparative Literature	CML	History	HIS
Computer Science	CS	Home Economics Education	EHE
Counseling and Human Development Services	ECP	Horticulture	HOR
Crop and Soil Sciences	CSS	Housing and Consumer Economics	HCE
Drama	DRA	Instructional Technology	EIT
Early Childhood Education	ECE	Italian	ITA
Ecology	ECL	Japanese	JPN
Economics	ECN	Journalism and Mass Communication	JRL
Educational Leadership	EDL	Landscape Architecture	LAR
Educational Philosophy	EPH	Latin	LAT
Educational Psychology and Measurement	EPY	Legal Studies	LS
Educational Research	ERS	Linguistics	LIN
Elementary Education	EEL	Management	MAN
Engineering	EGR	Management Sciences and Information Technology	MS
		Marine Sciences	MAR
		Marriage and Family Therapy	MFT
		Marketing	MKT
		Marketing Education	EME

Mathematics	MAT	Religion	REL
Mathematics Education	EMT	Risk Management and Insurance	INS
Medical Microbiology	MMB	Romance	ROM
Microbiology	MIB	Russian	RUS
Middle School Education	EMS	Sanskrit	SKT
Music	MUS	Science Education	ESC
Music Education	EMU	Semitic	SEM
Occupational Studies	EOS	Small Animal Medicine	SMS
Parasitology	PAR	Social Science Education	ESS
Pharmacy	PHR	Social Work	SW
Philosophy	PHY	Social Work Education	ESW
Physical Education and Sport Studies	PES	Sociology	SOC
Physics	PCS	Spanish	SP
Physiology and Pharmacology	VPH	Special Education	SPE
Plant Pathology	PAT	Speech Communication	SPC
Political Science	POL	Statistics	STA
Portuguese	POR	Technological Studies	ETS
Poultry Science	PS	Textiles, Merchandising, and Interiors	TMI
Psychology	PSY	Veterinary Anatomy and Radiology	VAR
Reading Education	ERD	Veterinary Medicine	VET
Real Estate	RE	Veterinary Pathology	VPP
Recreation and Leisure Studies	REC	Women's Studies	WS

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The University of Georgia

Office of Graduate Admissions

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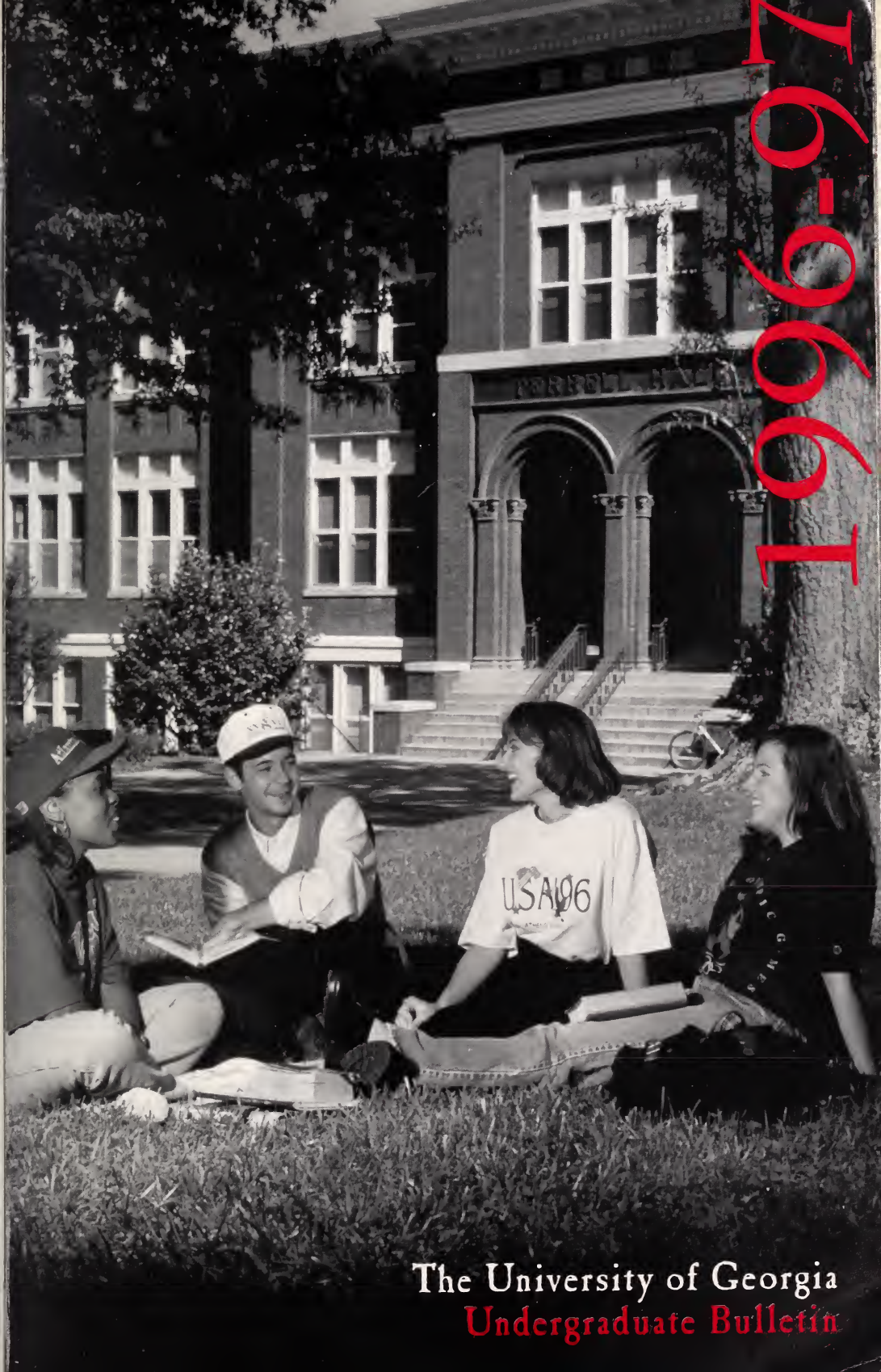
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The University of Georgia
Undergraduate Bulletin

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Note:

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UGA Directory Assistance:

542-3000

Admissions, Undergraduate:

212 Terrell Hall; 542-2112

Bookstore, University:

Sanford Drive; 542-3171

Career Planning and Placement:

Clark Howell Hall; 542-3375

Counseling and Testing Center:

Clark Howell Hall; 542-3183

Fees Payment:

Business Services Building; 542-1625

Financial Aid:

220 Academic Building; 542-6147

Health Service:

Gilbert Health Center; 542-1162

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International Services and Programs:

210 Memorial Hall; 542-1557

Libraries:

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Science Library, Graduate Studies
Building; 542-4535

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Perimeter Parking Lot, River Road;
542-PARK

Registrar:

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Student Activities:

Tate Student Center; 542-7774

**Student Affairs, Office of the Vice
President for:**

201 Academic Building; 542-3564

Tate Student Center:

Information, 542-3816

NOTE: Additional directory information appears on page 423.

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The University of Georgia
A Unit of the University System of Georgia

Undergraduate Bulletin

Volume XCIII
January 1996

Pursuant to directives of the President of this institution, the University of Georgia continues its affirmative implementation of equal opportunity to employees, students, covered contractors and vendors, and applicants for employment, admission, or contractor/vendor status. The University of Georgia will act in matters of employment, admissions, programs, and services free of prohibited bias with regard to race, creed, color, sex, national origin, religion, age, veteran status, or disability. Further, the University of Georgia will not maintain racially segregated facilities.

Continuation of the above policies is consistent with applicable provisions of the Civil Rights Act of 1964, the Education Amendments of 1972, Executive Order 11246, Revised Order 4, the Vietnam Era Veterans Readjustment Act of 1974, the Rehabilitation Act of 1973, and The Americans with Disabilities Act of 1990, as revised and/or amended, with implementing regulations. Accordingly, this institution will not discriminate in employment, admissions, programs, or services with regard to any position for which the applicant, employee, or student is qualified and will make reasonable accommodation for physical and mental limitations.

The Affirmative Action Plan implementing the above body of law, regulation, and policy is administered by Claude-Leonard Davis, Director of the UGA Equal Opportunity Office at 3 Peabody Hall, Athens, Georgia 30602-1622. Telephone inquiries concerning this Plan may be directed to (706) 542-7912. Copies of this Plan are available for inspection in the Equal Opportunity Office and in the UGA Main Library during normal weekday working hours.

While every effort is made to provide accurate and current information, the University reserves the right to change, without notice, statements in the bulletin concerning rules, policies, fees, curricula, courses, calendar, or other matters. Students enrolled at the University agree to comply with the University's rules and regulations and to accommodate to any changes necessary. Further, the statements set forth in this bulletin are for informational purposes only and should not be construed as the basis of a contract between a student and the institution.

1996-97
76-9661



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Academic Calendar 1996—1997

1996

Winter Quarter

Admission Application Complete	Nov. 1, 1995 (for Winter 96)
Residence Halls Open	Jan. 2, Tu
Orientation and Advisement	Jan. 3, W
Late Registration	Jan. 4, Th
Classes Begin	Jan. 5, F
Drop/Add	Jan. 5, 8-9, F, M-Tu
Holiday (No Classes)	Jan. 15, M
Midpoint of Quarter	Feb. 9, F
Classes End	Mar. 15, F
Final Exams	Mar. 18-21, M-Th

1996

Spring Quarter

Admission Application Complete	Feb. 1 (for Spring 96)
Residence Halls Open	Mar. 27, W
Orientation and Advisement	Mar. 28, Th
Late Registration	Mar. 29, F
Classes Begin	Apr. 1, M
Drop/Add	Apr. 1-3, M-W
Midpoint of Quarter	May 3, F
Classes End	June 7, F
Final Exams	June 10-13, M-Th
Commencement	June 15, Sa

1996

Summer Quarter

First Short Session

Note: Classes meet for **150 minutes daily**.

Admission Application Complete	May 1 (for Summer 96)
Residence Halls Open	June 16, Su
Orientation and Advisement	June 17, M
Late Registration	June 18, Tu
Classes Begin	June 19, W
Drop/Add	June 19-21, W-F
Midpoint of Session	June 28, F
Holiday (No Classes)	July 4-5, Th-F
Classes End	July 12, F
Final Exams	July 15-16, M-Tu

Second Short SessionNote: Classes meet for **150 minutes daily.**

Late Registration

Classes Begin

Drop/Add

Midpoint of Session

OLYMPIC RECESS BEGINS

Classes Resume

Classes End

Final Exams

July 16, Tu

July 17, W

July 17-18, W-Th

July 26, F

July 29, M

Aug. 5, M

Aug. 14, W

Aug. 15-16, Th-F

Regular (Thru) SessionNote: Classes meet for **75 minutes daily.**

Admission Application Complete

Residence Halls Open

Orientation and Advisement

Late Registration

Classes Begin

Drop/Add

Holiday (No Classes)

Midpoint of Session

OLYMPIC RECESS BEGINS

Classes Resume

Classes End

Final Exams

May 1 (for Summer 96)

June 16, Su

June 17, M

June 18, Tu

June 19, W

June 19-21, W-F

July 4-5, Th-F

July 15, M

July 29, M

Aug. 5, M

Aug. 13, Tu

Aug. 14-16, W-F

1996

Fall Quarter

Admission Application Complete

Residence Halls Open

Orientation and Advisement

Late Registration

Classes Begin

Drop/Add

Midpoint of Quarter

Thanksgiving Recess

Classes Resume

Classes End

Final Exams

July 1 (for Fall 96)

Sept. 16, M

Sept. 17, Tu

Sept. 18, W

Sept. 19, Th

Sept. 19-20, 23, Th-F, M

Oct. 23, W

Nov. 23-Dec. 1, Sa-Su

Dec. 2, M

Dec. 4, W

Dec. 5-6, 9-10, Th-F, M-Tu

1997

Winter Quarter

Admission Application Complete

Residence Halls Open

Orientation and Advisement

Late Registration

Classes Begin

Drop/Add

Holiday (No Classes)

Midpoint of Quarter

Classes End

Final Exams

Nov. 1, 1996 (for Winter 97)

Jan. 2, Th

Jan. 3, F

Jan. 6, M

Jan. 7, Tu

Jan. 7-9, Tu-Th

Jan. 20, M

Feb. 11, Tu

Mar. 17, M

Mar. 18-21, Tu-F

Admission Application Complete
Residence Halls Open
Orientation and Advisement
Late Registration
Classes Begin
Drop/Add
Midpoint of Quarter
Classes End
Final Exams
Commencement

Feb. 1 (for Spring 97)
Mar. 26, W
Mar. 27, Th
Mar. 28, F
Mar. 31, M
Mar. 31-Apr. 2, M-W
May 2, F
June 6, F
June 9-12, M-Th
June 14, Sa



This Calendar is correct as of the date of this publication, but may be subject to change during the next year. Please refer to the *Schedule of Classes* and/or other special announcements that may be forthcoming.

The University System of Georgia

The University System of Georgia includes 34 state-sponsored, public institutions located throughout Georgia—6 universities, 13 senior colleges and 15 two-year colleges.

A 16-member constitutional Board of Regents—one from each of the state's 11 Congressional Districts and five from the state-at-large—governs the University System which was established in 1931. Board members are appointed by the Governor, subject to state senate confirmation, for seven-year terms.

The Chairperson, the Vice Chairperson, and other officers of the Board are elected by its membership. The Chancellor, who is not a Board member, is the chief executive officer of the Board and chief administrative officer of the University System.

The overall programs and services of the University System are offered through three major components: Instruction; Public Service/Continuing Education; Research.

Board of Regents' policies for government, management and control of the University System and the Chancellor's administrative actions provide institutions a high degree of autonomy. The President is the executive head of each institution and is recommended by the Chancellor and appointed by the Board.

The University System Advisory Council, with 34 committees, engenders continual dialogue on major academic and administrative matters and makes recommendations to the Chancellor, who transmits them to the Board as appropriate, regarding academic and administrative operations in the System. The Council consists of the Chancellor, the Vice Chancellor, and all Presidents as voting members. It includes other officials of institutions as nonvoting members. The Council's 21 academic and 13 administrative committees are composed of institutional representatives, typically one from each unit, and deal with matters of System-wide application.

Matriculation fees and nonresident tuition fees for students at all institutions are established by the Board of Regents. All students pay matriculation fees while out-of-state students pay nonresident tuition in addition. Other fees for student services and activities are established by institutions, subject to Board of Regents' approval. Non-mandatory fees established by institutions are subject to approval of the Board of Regents office.



Institutions of the University System of Georgia

Universities

- Athens
The University of Georgia
- Atlanta
Georgia Institute of Technology
Georgia State University
- Augusta
Medical College of Georgia
- Statesboro
Georgia Southern University
- Valdosta
Valdosta State University

Senior Colleges

- Albany
Albany State College
- Americus
Georgia Southwestern College
- Augusta
Augusta College
- Carrollton
West Georgia College
- Columbus
Columbus College
- Dahlonega
North Georgia College
- Fort Valley
Fort Valley State College
- Marietta
Kennesaw State College
Southern College of Technology
- Milledgeville
Georgia College
- Morrow
Clayton State College
- Savannah
Armstrong State College
Savannah State College

Two-year Colleges

- Albany
Darton College
- Atlanta
Atlanta Metropolitan College
- Bainbridge
Bainbridge College
- Barnesville
Gordon College
- Brunswick
Brunswick College
- Cochran
Middle Georgia College
- Dalton
Dalton College
- Decatur
DeKalb College
- Douglas
South Georgia College
- Gainesville
Gainesville College
- Macon
Macon College
- Rome
Floyd College
- Swainsboro
East Georgia College
- Tifton
Abraham Baldwin Agri. College
- Waycross
Waycross College

University System of Georgia
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Atlanta, Georgia 30334

The University System of Georgia

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Treasurer*

Douglas H. Rewerts, *Vice Chancellor—
Facilities*

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Information/Instructional Technology/
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The University of Georgia

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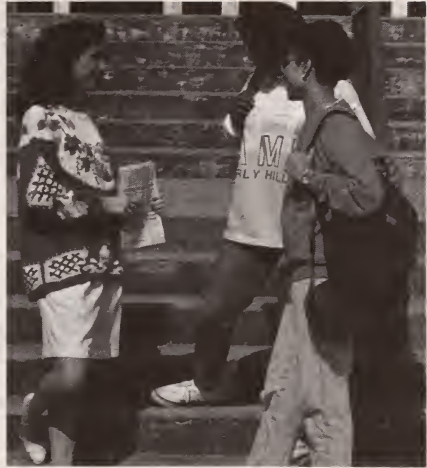
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Colleges and Schools

Franklin College of Arts and Sciences
(1801)

Wyatt W. Anderson, *Dean*

**College of Agricultural and
Environmental Sciences** (1859)

Gale A. Buchanan, *Dean*

School of Law (1859)

Edward D. Spurgeon, *Dean*

College of Pharmacy (1903)

Stuart Feldman, *Dean*

**Daniel B. Warnell School of Forest
Resources** (1906)

Arnett C. Mace, Jr., *Dean*

College of Education (1908)

Russell H. Yeany, *Dean*

Graduate School (1910)

Gordhan Patel, *Dean*

**C. Herman and Mary Virginia Terry
College of Business** (1912)

J.M. Tull School of Accounting

Albert W. Niemi, Jr., *Dean*

**Henry W. Grady College of Journalism
and Mass Communication** (1915)

J. Thomas Russell, *Dean*

**College of Family and Consumer
Sciences** (1933)

Sharon Y. Nickols, *Dean*

College of Veterinary Medicine (1946)

David P. Anderson, *Dean*

School of Social Work (1964)

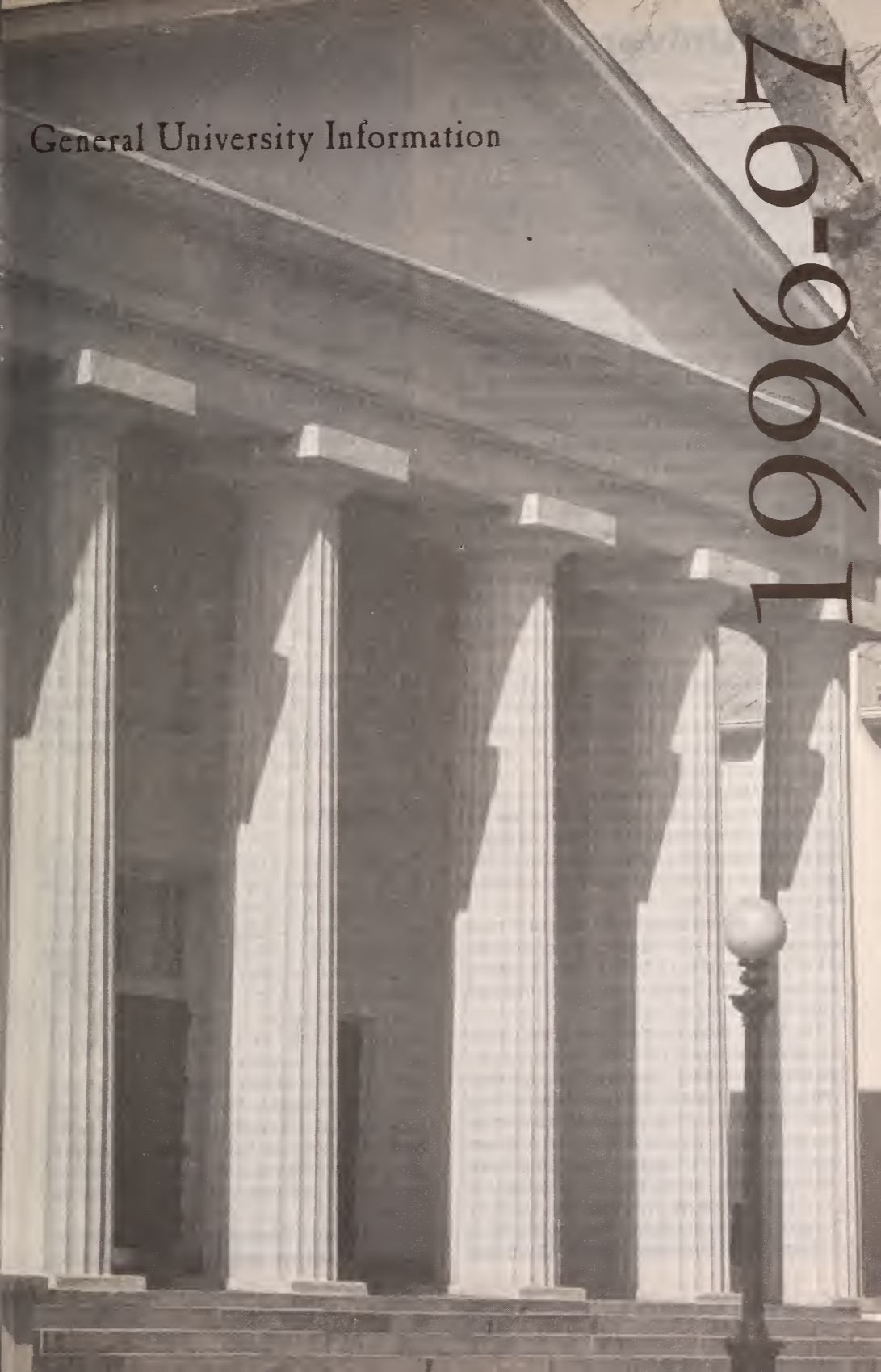
Bonnie L. Yegidis, *Dean*

School of Environmental Design (1969)

Kerry J. Dawson, *Dean*

General University Information

1996-97
16-9661



The University

History

When the University of Georgia was incorporated by an act of the General Assembly on January 27, 1785, Georgia became the first state to charter a state-supported university. In 1784 the General Assembly had set aside 40,000 acres of land to endow a college or seminary of learning.

At the first meeting of the board of trustees, held in Augusta on February 13, 1786, Abraham Baldwin was selected president of the University. Baldwin, a native of Connecticut and a graduate of Yale University who had come to Georgia in 1784, drafted the charter adopted by the General Assembly.

The University was actually established in 1801 when a committee of the board of trustees selected a land site. John Milledge, later a governor of the state, purchased and gave to the board of trustees the chosen tract of 633 acres on the banks of the Oconee River in northeast Georgia.

Josiah Meigs was named president of the University and work was begun on the first building, originally called Franklin College in honor of Benjamin Franklin and now known as Old College. The University graduated its first class in 1804.

The curriculum of traditional classical studies was broadened in 1843 to include courses in law, and again in 1872 when the University received federal funds for instruction in agriculture and mechanical arts.

Thirteen schools and colleges, with auxiliary divisions, carry on the University's programs of teaching, research and service. These colleges and schools and the dates of their establishment as separate administrative units are: Franklin College of Arts and Sciences, 1801; College of Agricultural and Environmental Sciences, 1859; School of Law, 1859; College of Pharmacy, 1903; D. B. Warnell School of Forest Resources, 1906; College of Education, 1908; Graduate

School, 1910; C. Herman and Mary Virginia Terry College of Business, 1912; Henry W. Grady College of Journalism and Mass Communication, 1915; College of Family and Consumer Sciences, 1933; College of Veterinary Medicine, 1946; School of Social Work, 1964; School of Environmental Design, 1969. The Division of General Extension, now the Georgia Center for Continuing Education, was incorporated into the University in 1947.

In 1931 the General Assembly of Georgia placed all state-supported institutions of higher education, including the University of Georgia, under the jurisdiction of a single board. This organization, known as the University System of Georgia, is governed by the Board of Regents. The Board of Regents' executive officer, the chancellor, exercises a general supervisory control over all institutions of the University System, with each institution having its own executive officers and faculty.

Purpose

The University of Georgia, a land-grant and sea-grant university, is the state's oldest, most comprehensive, most diversified institution of higher education. Its constituencies are numerous, and the scope of its programs in graduate, professional, and undergraduate education is the most extensive in the state. As Georgia's leading institution of higher learning, the University has the following major purposes:

*To disseminate knowledge through *teaching* in the academic disciplines and fields of professional study that make universities distinctive; related to this purpose are programs and other opportunities for students' intellectual, professional, and personal development.

*To advance knowledge through *research*, scholarly inquiry, and the creative arts; re-



lated to both teaching and research is the conservation and enhancement of the state's and the nation's intellectual, cultural, and environmental heritage.

*To provide *service* to the public through consultation, technical assistance, short-term instruction, training, and other opportunities for continued learning, growth, and development.

To fulfill its multiple purposes and commitments, the University of Georgia defines its instructional, research, and public service missions as broadly as possible, with an explicit commitment to excellence in all of its missions. Since the quest for knowledge is universal, a global perspective is necessary to provide students with educational opportunities consistent with the international dimensions of their future careers and personal lives.

Teaching

Traditionally, teaching is the essential mission of American universities. Through its thirteen colleges and schools, the University of Georgia offers programs of general, advanced, and specialized study in virtually all traditional academic disciplines and in various professional and applied fields. As a public, state-supported, land-grant and sea-grant institution, the University has a com-

mitment (a) to excel in undergraduate, professional, and graduate instruction; (b) to offer programs of instruction in a comprehensive range of liberal, general, specialized, and international studies; and (c) to provide the facilities, resources, and environmental conditions that promote critical thinking and analytical problem-solving. If the University has a single, overriding reason for being, it is *learning*, a cooperative human endeavor that encompasses teaching, research, and service and that involves the entire University community.

The University's role and responsibilities in formal classroom instruction are complemented by co-curricular programs and activities that foster the personal, social, and intellectual development of its students and its other constituencies. The University offers programs and services related to housing, health, admissions, recreation, counseling, career placement, student organizations, and activities for minority and international students. Such activities, which contribute to the development of personal and interpersonal competence, enrich students' campus experiences and thereby help prepare them to lead useful, productive, and satisfying lives.

Research and Scholarship

As a major graduate/research institution, the University of Georgia engages in research and scholarly inquiry within most recognized fields of advanced or specialized study. To contribute to a better understanding of our world, to preserve our environmental heritage, and to educate and prepare future generations of scientists and scholars, the University uses its resources and expertise in the investigation of problems related to all areas of human endeavor. To preserve the intellectual and cultural heritages of the region and the nation, the University assumes responsibility for the preservation, maintenance, and expansion of collections in its libraries and museums. To advance knowledge through the arts, the University encourages and supports student and faculty creativity in music, drama, poetry, fiction, dance, and the visual arts. The University also encourages international communication and collaboration in research and other scholarly endeavors. The continuing vitality of the University's programs of instruction, with the many services to constituencies,

depends upon this strong commitment to scholarship and to basic and applied research in diverse academic disciplines.

Public Service

The University's public service mission is a commitment to the citizens of Georgia and to the broader communities of the nation and the world. The University brings its scientific, scholarly, and technological expertise to bear on societal problem-solving, economic development, and cultural advancement. The University's cooperative extension, in-service, and continuing education programs help citizens to develop the knowledge and skills they need to improve their work, their personal lives, and their communities. Through its institutes, centers, and other service programs, the University provides professional and technical assistance to state and local governments, business corporations, small businesses, and civic or community organizations. And by supporting the involvement of individual faculty members in national and international organizations, the University assists others in solving problems of common concern to the nation and to humankind. In its service mission the University has many responsibilities for leadership in the formation and implementation of public policies that affect the quality of life. The University thus strives to interpret and respond to political, economic, and technological developments in society.

"To teach, to serve, and to inquire into the nature of things" is the University's motto. The conservation and enhancement of the state's and the nation's intellectual, cultural, and environmental heritage is inherent in the advancement, dissemination, and application of knowledge and is essential to the University's role as an institution of higher learning. In keeping with its interdependent missions in instruction, research and scholarly inquiry, and public service, the University dedicates its resources and talents to cultural innovation and progress.

Accreditation

The University of Georgia is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools to award Associate, Bachelor's, Master's, and Doctor's degrees. In addition, a number of the University's 13 colleges and schools are further accredited by appropriate educational associations.

Resources

The Athens Campus

The University sweeps across Athens' famed hills, covering approximately 4,300 acres within Clarke County.

Traditional North Campus is the home of the Colleges of Arts and Sciences, Business Administration, and Journalism and Mass Communication, and the Schools of Environmental Design and Law, as well as the Main Library. Noteworthy buildings on North Campus are Old College (1801), New College (1823), Demosthenian Hall (1824), the University Chapel (1832), and Phi Kappa Hall (1834). The Ladies' Garden Club Founders Memorial Garden enhances the area near the Landscape Architecture Building.

South Campus, with an array of modern structures, has grown southward as the University continues to expand. Buildings include Boyd Graduate Studies Research Center, Colleges of Agricultural and Environmental Sciences, Family and Consumer Sciences, Veterinary Medicine, Education, and Pharmacy, and the Schools of Forest Resources and Social Work, as well as the Georgia Center for Continuing Education, the Coliseum, and the Butts-Mehre Building.

State funds complemented by liberal private gifts, grants from foundations, and federal grants continue to increase the building program on campus.



Libraries

The University of Georgia Libraries are composed of three major on-campus libraries—the Main Library, Science Library, and Law Library, which is administered by the School of Law. There are also several small collections such as the Curriculum Materials Center (Education), the Georgia Center for Continuing Education Library, the Veterinary Medicine reading room, and various lab collections. The UGA Libraries' system also includes libraries at the experiment stations in Griffin and Tifton, and the marine stations at Sapelo and Skidaway.

The UGA Library is the largest university library in the State of Georgia. It is a member of the prestigious Association of Research Libraries consisting of the largest research libraries in North America and ranks in the top thirty of these libraries.

The Libraries contain more than 3,000,000 books, serials and documents, and many other items including manuscripts, photographs, drawings and newspapers. The map collection incorporates over 560,000 items and the microform collection numbers more than 5,000,000. The collections support the curricular and research needs of the campus and are available to library users both on the campus and across the state.

An outstanding feature of the Main Library is the Hargrett Rare Book and Manuscript Library, a repository of rare and priceless relics. Among the special collections are the works and memorabilia of Erskine Caldwell and Margaret Mitchell, the original Confederate Constitution, Confederate imprints, a notable Georgiana collection, many Southern historical manuscripts, and the sheet music of many well-known musicians.

The Richard B. Russell Memorial Library, an annex to the Main Library, houses the papers and memorabilia of the late Senator Russell, as well as the papers of former Secretary of State Dean Rusk, Senator Herman E. Talmadge, and many other elected officials and government appointees.

Special services for students include orientation to and tours of the Libraries services and collections; individual reference conferences for persons undertaking major research papers; individual stations for audio and video materials, photocopy machines, and access to information in over 200 computer databases through searching done either by the Libraries' user or with assistance by librarians.



The Main Library also houses a micro-computer lab operated by the University Computing and Networking Services.

For additional information on Libraries collections and services, contact the Office of the Director, Libraries, University of Georgia, Athens, GA 30602. (706) 542-0621

Classroom and Laboratory Facilities

Almost 720 rooms support the classroom and laboratory instruction at the University of Georgia. A small number of large lecture halls combine with general classrooms, specialized classrooms, class laboratories, and a few assembly halls to provide a vast array of instructional support facilities. Another 1400 rooms house non-instructional laboratory activities.

The traditional science laboratories are located primarily on south campus in buildings known as the Science Center Complex—six buildings that house the biological sciences, chemistry, physics, geology, geography, food science, and animal sciences. All of the buildings have well-equipped laboratories for instruction and research programs. In addition, a new Life Sciences building houses research and instructional space for the biochemistry and genetics departments.

In addition to the Science Center and the Life Sciences Building, well-equipped laboratories are available throughout the campus for departmental instruction and research programs including those in the College of Agricultural and Environmental Sciences in Conner Hall, The College of Family and Consumer Sciences in Dawson Hall and Spiers Hall, and the Robert C. Wilson School of Pharmacy, the D.B. Warnell School of Forest Resources, and the College of Veterinary Medicine, each in its own building.

Modern instructional techniques require modern equipment. In many classrooms, state-of-the-art technology is used to illustrate and demonstrate instructional concepts. In most buildings, computer laboratories are available to students either in an open access environment or in support of specific courses. In some buildings, both types of computer laboratories are available to the student. The Terry College of Business and other disciplines which utilize the case-style method of teaching generally utilize case-style classrooms. The Henry W. Grady College of Journalism and Mass Communication maintains radio and television studios in addition to other modern electronic communications laboratories.

Athens

Georgia's "Classic City," Athens is a prospering community, one that reflects the charm of the Old South while developing in cultural and industrial areas.

A college town in every sense of the word, Athens appreciates its University population

while recognizing its obligation to all residents to grow independently of the University.

The Clarke County population, according to a 1990 census estimate, is approximately 86,000.

Athens' elevation is 600 to 800 feet above mean sea level, and because of its geographic location, the city is sheltered from much of the extreme weather of the winter season. Mean temperature for January, the coldest month, is 43°F., and for July, the warmest month, 79°F. Average minimum and maximum temperatures for January are 33° and 53°F., and for July, 68° and 89°F. Average rainfall is 50.42 inches.

Athens is served by two daily newspapers and an independent student newspaper, *The Red and Black*. Athens also has a weekly newspaper and the Atlanta newspapers, as well as eight local radio stations and the University's radio stations, WUOG-FM and WUGA-FM.

Network television is available through direct reception or cable within a 100-mile radius of Athens.

Two hospitals offering comprehensive health care serve Athens, and there are more than 80 churches in the area.



Admission

General Requirements

Each applicant's record should reflect promise of growth, seriousness of purpose, and a sense of responsibility. The University seeks to enroll students with superior academic credentials and strong personal character who will positively contribute to the diverse and rich cultural environment of campus life.

The University reserves the right to admit only those applicants whose records indicate potential for success in a university environment. The University also reserves the right to examine further any applicant by the use of psychological, achievement, and/or aptitude tests, and personal interview.

The University of Georgia complies with the Civil Rights Act of 1964 and is an Affirmative Action/Equal Employment Opportunity institution. Admission and employment are not influenced by race, sex, color, religion, national origin, or handicap. Additionally, the University is actively involved in affirmative action recruitment.

Admission Procedures and Standards

The University, through the Office of Undergraduate Admissions, reserves the right to revise admissions criteria to any program, school, or college and/or to request additional information of applicants at any time during the academic year if deemed necessary.

How to Apply for Admission

Applications for undergraduate admission may be obtained from the UGA Office of Undergraduate Admissions, 212 Terrell Hall, University of Georgia, Athens, Georgia 30602-1633. Completion of all forms and submission of all requirements are mandatory before the applicant's request for admission can be considered. New applicants to the University must enclose a non-refundable \$25.00 check or money order to cover

the expense of processing the application. See the financial section of this bulletin for a complete explanation of fees.

Once the application for admission, appropriate test scores, and other required records of the applicant are found to be complete and in proper order, the evaluation will be made in terms of academic record, the probability of completing the requirements for the desired degree, and the competitiveness within the applicant pool. Admission is determined without regard to race, sex, color, religion, national origin, or handicap. The University reserves the right to terminate acceptance of application forms when enrollment limits are reached or when credentials are deemed incomplete or unsatisfactory.

Acceptance of each applicant will be determined by the Faculty Admissions Committee subject to the right of appeal as provided in the University System.

Specific information concerning housing, orientation, pre-registration and transferred courses is sent to the student following the official acceptance.

Freshman Admission

Applicants for freshman admission to summer or fall quarter should apply before February 1. The University of Georgia admits freshman applicants whose high school curriculum, grades earned, and college admissions test scores indicate they can do successful work at the university level. The admissions standards are based primarily on a combination of these academic factors and also reflect the competition for a limited number of class openings by a growing number of highly qualified applicants. For freshman admissions, the University calculates an admissions index based upon academic credentials and the actual performance of recently enrolled freshman classes. Historically, the most heavily weighted factor in the University's admissions process has been

the grade average earned in college preparatory subjects. The University may request and use in the admission process qualitative information to better determine a student's potential for success at and contribution to the University.

Required High School Curriculum

Prospective freshman applicants are encouraged to take a full schedule of college preparatory subjects in high school. Only grades made in English, mathematics, science, social studies, and foreign language are used to calculate the high school grade point average for use in the admissions process.

It is recommended that high school students take the most rigorous curriculum in order to be prepared for college coursework. Certain high school courses are recommended for particular college majors. For instance, trigonometry, geometry, chemistry, and physics are advised for pursuing any Bachelor of Science degree.

The following course of study is required as a minimum by the University System of Georgia for students graduating from high school who plan to enroll in Georgia's public junior college, senior college, or university programs leading to the baccalaureate degree.

College Preparatory Curriculum (CPC)

Courses and Instructional Emphasis:

English (4 units)

- Grammar and usage
- Literature (American & World)
- Advanced composition skills

Mathematics (3 units)

- Algebra I, II, and Geometry

Science (3 units)

- Physical Science and
- At least two laboratory courses from Biology, Chemistry, Physics or related areas of science or three laboratory courses from Biology, Chemistry, or Physics

Social Science (3 units)

- American History
- World History
- Economics and Government

Foreign Language (2 units)

- Two courses in one language emphasizing speaking, listening, reading, and writing

It is possible, although highly unlikely, that a student can be offered freshman admission

with a CPC deficiency. Students who are academically admissible but who have a course deficiency will be notified of the requirement to remedy this deficiency by the end of the quarter in which thirty quarter hours are completed. The deficiency can be satisfied through testing or by registering for and passing with a C or better in equivalent college level coursework. This coursework will not be used for credit toward graduation requirements.

Test Requirements

An official report on the College Board's Scholastic Assessment Test (SAT) or the American College Test (ACT) is required of all freshman applicants. The University's school code number for the SAT is 5813; our code for the ACT is 0872. In order to expedite the processing of your application, please remember to include your correct Social Security Number and birthdate when taking the SAT or ACT. Applicants whose high school class has been graduated five or more years may be considered for admission without SAT or ACT scores. These non-traditional applicants may be asked to submit results of the Collegiate Placement Exam which may be taken at the University's Counseling and Testing Center.

Students who have had at least two years of foreign language in high school must take the College Board SAT-II Subject Exam in that language if they plan to continue studying that language. Optional College Board SAT-II or Advanced Placement tests which may be taken for advanced credit include English, chemistry, biology, physics, American or European history, mathematics, art, computer science, political science, economics, music, and psychology. Further information on the University's advanced placement policies may be obtained from the Honors Program office.

Information for making application to take the College Board SAT-II or Advanced Placement tests may be obtained from the high school counselor, or directly from Educational Testing Service, P.O. Box 592, Princeton, New Jersey 08540.

Transfer Admissions

To be considered for University admission, all transfer applicants must be in good academic standing at their last college attended and must have official transcripts of all col-

lege work sent to the University. Early application is important. The deadline for receipt of transfer applications and all required documents for fall quarter is July 1, winter is November 1, spring is February 1, and summer is May 1. Students who will have earned 45 quarter or 30 semester hours of credit by their University of Georgia enrollment date will have admission based only on the grades earned in all the academic college work attempted. A student who is on academic warning, probation, or dismissal from the last institution attended will not be admitted to the University.

The transfer grade point average and core courses required for admission to UGA are established each year by the Faculty Admissions Committee. Transfer applicants of sophomore standing with overall cumulative academic averages higher than 2.3 will be considered for University admission. However, University colleges, schools, and individual majors may require higher averages for acceptance. Effective summer quarter 1996, transfer students will be required to complete specific core courses in English, mathematics, and laboratory science prior to admission. Precise admission requirements can be obtained from the Office of Undergraduate Admissions.

To calculate an overall transfer grade average, the admissions office must include all grades earned, including Ds and Fs, in all academic courses an applicant has attempted. Normally, grades earned in courses repeated after earning a C grade or better in that course will be excluded from the transfer admissions average. The calculated transfer admissions average will not include grades earned in physical education courses or career-oriented courses from a terminal degree program.

Transient students may enroll for a summer quarter in some undergraduate classes by presenting a letter of good standing from their home college. Transients for any other term must meet all regular transfer admission requirements. Transient admission is only for one quarter. Note: Courses taken at the University while a student is a transient are not used in determining later University admission as a regular transfer student.

Irregular students are college graduates taking additional undergraduate courses but not for a UGA undergraduate degree. To be admitted, irregular students must submit an official transcript showing proof of graduation

and the required grade point average for the UGA major to which they desire admission.

Second degree students are college graduates planning to obtain an additional undergraduate degree from UGA. To be admitted, official transcripts must be submitted from all schools attended and students must meet the minimum grade point average required for the intended major.

Any transfer credit received that brings the overall grade point average below the specific requirements for admission may result in withdrawal of the admission offer before or after matriculation at the University.

Transfer of College Credit

The University of Georgia accepts credits from other accredited colleges and universities if the courses taken are "college parallel" and not remedial or career (terminal) courses. To earn a four-year degree from the University, a student must complete 60 of the last 90 quarter hours on the University of Georgia campus. Twenty hours of this work must be in senior division courses of the student's major.

A maximum of 150 academic quarter hours may be applied from other institutions toward a second baccalaureate degree. In order to earn a first baccalaureate degree from the University, a minimum of 60 quarter hours in residence at the University of Georgia is required.

Students transferring to the University who have completed some or all of the core curriculum requirements at another unit of the University System will receive full transfer credit. However, courses from a community or junior college that would be earned in the upper division at the University are generally non-transferable. A grade of C or higher in freshman English composition courses is required to guarantee transferability (see English 101 and 102, page 36). Students transferring from semester calendar institutions may multiply the number of semester hours by 1.5 to determine generally the number of quarter hours that will be transferred. Transferring from semester institutions may result in one or more courses being deleted to equate the conversion of semester hours into quarter hours. In these instances, students would not lose actual hours for completed course work. These determinations would not be made until transfer credit has been evaluated.

College credit will not be allowed for remedial courses or for courses applicable only to the terminal (career) associate degree level. College credit will not be allowed for such courses as remedial English or mathematics or for courses basically of secondary school or terminal junior college level.

Choice of School or College

Students of freshman and sophomore status undecided about a major should carefully review this Bulletin to determine which school or college more nearly meets his/her interests. The Colleges of Agricultural and Environmental Sciences, Arts and Sciences, and Education allow a student entrance as an Unspecified major. The required quarterly appointments with one's academic advisor and other University services can be of assistance in this decision.

Transfer students of junior or senior status are not eligible to declare an Unspecified major. Students transferring over 90 quarter or 60 semester hours of credit must declare a major for which they are eligible and be prepared to begin course work in that major upon matriculation.

Applicants for Readmission

Undergraduate students who are out of the University for one calendar year must file an application for readmission at least 20 calendar days (30 days for graduate students) prior to the published date of registration. Students who are on academic dismissal from the University should also contact their University of Georgia academic college of last enrollment. Undergraduate readmission applications are available from the Office of Undergraduate Admissions.

Undergraduate students who have not been enrolled at the University for a period of five years or more may be subject to different University, college or school, or department requirements than those which existed at the time of matriculation at the University or entry into a given college/school, major, minor, or certificate program.



Graduate and Professional Students

Students in the professional programs of journalism, law, pharmacy, and veterinary medicine must meet additional admission requirements found in the appropriate sections of the Bulletin.

Students applying to graduate programs should consult the *Graduate School Bulletin* or the dean of the particular school or college for a list of requirements.

The University reserves the right to deny admission to applicants whose records indicate inadequate preparation to do college work even though they may meet the entrance requirements set forth by the school.

Recipients of the GED

Persons over 18 years of age whose secondary schooling was interrupted may be admitted by presenting a State Department of Education Certificate of High School Equivalency (GED) and by passing entrance examinations as determined by the Admissions Committee. In general, the Faculty Admissions Committee asks that such applicants take the College Board Scholastic Assessment Test (SAT) or the American College Test (ACT), unless the applicant's class has been graduated more than five years.

Students will be considered for admission on the basis of the GED scores only after their class has been graduated one full year from secondary school.

Admission of High School Juniors

Under exceptional circumstances, students may be admitted to the University at the end of their junior year in high school. These students must have outstanding records in college preparatory subjects and must present scores on the combined verbal and mathematics sections of the Scholastic Assessment Test or the American College Test satisfactory to the University Faculty Admissions Committee. The recommendation of the student's high school principal or counselor will also be considered by the Admissions Committee.

University of Georgia Evening Classes

University of Georgia Evening Classes is a department of the Division of Academic Credit of the Georgia Center for Continuing Education. Evening Classes provides an accessible and coordinated program of academic credit courses in evenings and on weekends.

University of Georgia students who have a current day school registration eligibility are eligible to take both day and evening classes and may register for Evening Classes courses through the OASIS registration system during pre-registration, late registration, or drop/add registration times.

Persons seeking admission to University of Georgia Evening Classes should contact the Office of Undergraduate Admissions for information regarding admissions requirements.

Admission and Registration of Persons 62 Years of Age or Older

Pursuant to the provisions of an amendment to the Georgia Constitution, the Board of Regents established the following rules with respect to enrollment of persons of age 62 or older in units of the University System. To be eligible for enrollment under the provisions of this amendment such persons:

(1) Must be residents of Georgia, 62 years of age or older at the time of registration, and must present a birth certificate or other com-



parable written documentation of age to enable the Registrar to determine eligibility.

(2) May enroll as regular students in courses offered for resident credit on a "space available" basis without payment of fees, except for supplies or laboratory or shop fees.

(3) Must meet all system and institutional admission requirements.

(4) Will have all usual student and institutional records maintained.

(5) Must meet all system, institutional, legislated degree requirements such as Regents' Test, Major Area Exam and History and Constitution Instruction or Exams, if they are degree-seeking students.

(6) May not enroll in Dental, Medical, Veterinary, or Law Schools under the provisions of this policy.

Orientation

New undergraduate students are required to register for and attend an orientation session prior to enrolling at the University. Orientation provides opportunities for required place-

ment testing, academic advising, registration for classes as well as general information pertinent to newly entering students. Orientation information is mailed in late spring to students who have been accepted for the following fall quarter and by December 1, March 1, and June 1 for the winter, spring, and summer quarters.

Registration and Late Registration Penalties

Registration dates are listed in the front of this Bulletin. A student who fails to register on the scheduled days will be subject to penalties of \$25.00 as listed in the financial information section. No student will be admitted after the expiration of the third day

beyond scheduled dates except by special permission. No course may be added to a student's schedule after the first fourteen calendar days of a term, with the exception of a research, dissertation, or thesis course at the graduate level.

Medical History

New students and former students who have been absent from the University for over one year must have a complete medical history form on file with the University Health Service prior to registration. Information regarding medical history to be collected will be sent with notification of acceptance for admission and should be returned to the Medical Records Department, University Health Service.



Financial Information

Cost of Education

The estimated cost of education for a Georgia resident is \$8,325 per academic year. This estimate includes three quarters of tuition and fees, books and supplies, room and board, and personal expenses. An additional out-of-state fee assessed all non-Georgia residents increases this estimate to \$12,600.

Students of forest resources, law, pharmacy, and veterinary medicine will find the cost somewhat more because of higher fees required.

The University reserves the right to change its fees, charges, rules, and regulations at the beginning of any term and without previous notice. This right will be exercised cautiously.

Fees

APPLICATION AND ADMISSION FEES

Application Fees

Graduate	\$30.00
Undergraduate	\$25.00

Required of all new students applying for admission, and covers expenses of processing applications only.

Make check or money order payable to The University of Georgia. DO NOT SEND CASH.

<i>Fee Deposit—Law School</i>	\$50.00
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Required of a new student accepted by the Law School to reserve his or her place in the class. Must be paid by April 1 of the year in which admission is sought, or within 30 days of acceptance, whichever comes later. Deposit is non-refundable, but is applicable toward payment of the first semester matriculation fees.

Fee Deposit—College of Veterinary Medicine

\$100.00

Required from each applicant accepted for admission to the College of Veterinary Medicine. Must be received by May 1 or within three weeks after the date of issuance of the acceptance. If deposit is not received within the specified time, an alternate candidate will be called to fill the place of the accepted applicant. Deposit is non-refundable, but is applicable toward payment of the first quarter matriculation fees.

AUDITOR'S FEE

Persons desiring to attend courses or lectures without examination or credit may register to audit a course. Fees for auditors are the same as those for students registered for credit.

BREAKAGE DEPOSIT AND COURSE FEES

There are no general laboratory fees, but special fees, including breakage fees, are required for a few courses and some field trips. Students are held responsible for any breakage they cause.

SPECIAL FEES AND CHARGES

<i>Service Charge for Late Registration</i>	\$25.00
<i>Service Charge for Late Payment of Housing Fee</i>	\$25.00

Special Examination Fee

The University reserves the right to charge a fee for any special examination given at the request of a student.

Transcript Fee

Each copy	\$ 2.00
Special handling fee for same-day service	\$ 4.00
FAX service	\$ 6.00

Replacement Fee

Diploma	\$10.00
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Special Programs Fees

Agencies sponsoring regularly enrolled students who receive special academic programming or administrative services are expected to pay fees in addition to those normally charged for the usual services. While rates charged will be determined by contract arrangements, the scheduled fees for such services will be \$125 per quarter.

Payment

METHOD OF PAYMENT

On-line Payment Authorization of Fees Via OASIS

The following payment options are available via the OASIS Registration System to satisfy fees:

- Sponsorships
- Loans, Grants, or Scholarships
- Payroll Deduction
- Check/Cash

In cases where more than one payment option is available, the student must declare how fees will be satisfied. In most cases students who are sponsored, receive financial aid, or who elect payroll deduction may satisfy fee payment prior to exiting the OASIS Registration System. Students whose payment method is Check/Cash should screen print their fee invoice prior to exiting the system and pay in one of the following manners:



By Mail

Pre-addressed envelopes will be provided for mailing fee invoice and dorm cards along with check or money order (do not mail cash) to the Treasurer's Office. Payment must be received by the fee payment deadline to avoid schedule cancellation.

At Late (Phase II) Registration

Students who register during late registration may pay by check or cash at the Treasurer's station located in Memorial Hall. (DO NOT MAIL LATE REGISTRATION FEES.)

At Cashier's Window

Payment may be made by cash or check during cashiering hours at the cashier's window located on the first floor of the Business Services Building, 424 East Broad Street.

At Night Depository

Payment may be made after hours until late fee payment deadline at the night depository located at the front of the Business Services Building, 424 East Broad Street.

TIME OF PAYMENT

Pre-Registration (Phase I)

Students who pre-registered during the current term for the next quarter must pay fees by the pre-payment deadline in order to avoid schedule cancellation. Those who fail to pay fees by the deadline will be dropped from the class rolls, and the class openings will be made available to others who register late.

Late Registration (Phase II)

Fees and charges for room and board are due and payable at the time of late registration. A student is not officially registered at the University until such fees and charges are paid in full. A late registration service charge will be assessed after the close of Phase II. If payment is not made by the end of the late registration period, the student's registration will be cancelled. Exceptions to the time of payment are outlined below.

MATRICULATION FEES (1995-96)

For Students with 12 or more Quarter Credit Hours

	Mainte- nance	Non- Resident	Student Fees	Total
Regular Students				
Residents	\$ 665.00		\$188.00	\$ 853.00
Non-residents	665.00	\$1,429.00	188.00	2,282.00
Forest Resources Students				
Residents	781.00		188.00	969.00
Non-residents	781.00	1,680.00	188.00	2,649.00
Law Students				
Residents	1,229.00		282.00	1,511.00
Non-residents	1,229.00	2,641.00	282.00	4,152.00
Pharmacy Students				
Residents	765.00		188.00	953.00
Non-residents	765.00	1,646.00	188.00	2,599.00
Veterinary Students	903.00		188.00	1,091.00

(Payable each term during registration period.)

The per credit hour charge for students with less than 12 credit hours is as follows:

	Residents	Non-residents
Regular Students	\$ 56.00	\$176.00
Forest Resources Students	66.00	206.00
Law Students ¹	103.00	324.00
Pharmacy Students	64.00	202.00
Veterinary Students	76.00	N/A

Each student with less than 12 credit hours must also pay the following student fees:

	Law Students	All other students
Health fee ²	\$114.00	\$76.00
Student activity fee	37.50	25.00
Student athletic fee ³	37.50	25.00
Transportation fee	43.50	29.00
Ramsey Student Center fee	49.50	33.00

Note: Students who enroll for six hours or less have the option of waiving student activity, student athletic, Ramsey Student Center, and health fees. This waiver must be elected at the time of registration.

MEAL PLANS (1995-96)

5 day plan	\$532.00 per quarter
7 day plan	\$592.00 per quarter

RESIDENCE HALL FEES (1995-96)

Fees range from \$610.00 to \$845.00 per quarter.

¹Law Students' fees are assessed at the semester rate.

²Optional Dental Fee available to all enrolled students and their spouses for an additional fee.

³Student Athletic Fee assessed for fall, winter, and spring quarters only. For Law students, this fee is assessed for fall and spring semesters only.



DEFERRED PAYMENT OF FEES

Students who meet one of the following requirements may defer payment upon approval by the Treasurer's Office, Banking and Trust Department, Business Services Building, 424 East Broad Street:

1. Students whose fees are guaranteed and will be paid by an outside agency under an agreement with the University of Georgia up to the amount authorized for a specific academic quarter.
2. Students who have a University-administered loan or scholarship in process up to the amount of the aid granted for a specified academic quarter.
3. Foreign students who have a certificate or other acceptable documented evidence that payment of fees will be made after a statement of charges for the student has been presented for payment. The deferment will be limited to the amount stated in the certificate or other document for a specified academic quarter.
4. Students who are recipients of assistantships (at least one-third time) administered by the University may defer their fees.

Deferred fees will be due and payable as follows:

QUARTER

Fall	November 1
Winter	February 1
Spring	May 1
Summer	July 1

SEMESTER

Fall	November 1
Spring	May 1
Summer	July 1

FEE REFUNDS

In order to receive a refund of fees due to withdrawal from school, students must contact the Student Affairs Office and formally withdraw. (Note: withdrawal from school cannot be accomplished through drop/add after the first day of class). Students who formally withdraw from the University on or before the first day of class are entitled to a refund of 100 percent of fees paid for that term; withdrawal after the first day of class but before the end of the first 10 percent (in time) of the period of enrollment, 90 percent; withdrawal after the first 10 percent (in time) of the period of enrollment but before the end of the first 25 percent (in time) of the period of enrollment, 50 percent; withdrawal after the first 25 percent (in time) of the period of enrollment but before the end of the first 50 percent (in time) of the period of enrollment, 25 percent. Refunds will be made at the end of the term. No refunds for reduction in hours after the drop/add period are allowed unless such reduction is the fault of the University.

The following are not entitled to any refund of fees paid: students who withdraw after the first 50 percent (in time) of the period of enrollment, students suspended for disciplinary reasons, students who leave the University when disciplinary action is pending, or students who do not formally withdraw.

Students attending the University for the first time who receive assistance under Title IV of the Higher Education Act of 1965 as amended are entitled to a pro-rata refund of that portion of the tuition, fees, room and board, and other charges assessed the student by the institution equal to that portion of the period of enrollment for which the student has been charged that remains on the last day of attendance by the student up to the sixty percent point in time in the period of enrollment. In the event a student receives Title IV aid and fails to complete registration and/or fee payment for the academic term for which financial assistance was awarded, the full amount of the Title IV aid received must be repaid immediately. In the event a student receives Title IV aid, completes registration, and subsequently reduces his/her enrollment status or withdraws, the amount of funds to be returned to the Title IV programs will be in accordance with federal regulations concerning refunds and repayments to the Title IV programs.

Refunds

All refunds, up to the amount of the aid received for the term, will be returned to the Title IV programs according to the following priority:

1. Federal Family Educational Loans
2. Federal Direct Student Loans
3. Federal Perkins Loans
4. Federal Pell Grants
5. Federal Supplemental Educational Opportunity Grants
6. Student Incentive Grants
7. Other federal sources of aid
8. Other state, private, or institutional aid
9. Student

Repayments

All repayments, up to the amount of the aid received for the term, will be returned to the Title IV programs according to the following priority:

1. Federal Perkins Loan
2. Federal Pell Grants
3. Federal Supplemental Educational Opportunity Grants
4. Student Incentive Grants
5. Other federal sources of aid
6. Other state, private, or institutional aid

Refunds for elective charges due to withdrawals during the term will be made on a prorated basis depending on the date of withdrawal.

Rules Governing the Classification of Students for Tuition Purposes in the University System of Georgia

1. (a) If a person is 18 years of age or older, he or she may register as an in-state student only upon a showing that he or she has been a legal resident of Georgia for a period of at least twelve months immediately preceding the date of registration.
(b) No emancipated minor or other person 18 years of age or older shall be deemed to have gained or acquired in-state status for tuition purposes while attending any educational institution in this State, in the absence of a clear demonstration that he or she has in fact established legal residence in this State.
2. If a person is under 18 years of age, he or she may register as an in-state student only upon a showing that his or her supporting parent or guardian has been a legal resident of Georgia for a period of at least twelve months immediately preceding the date of registration.
3. If a parent or legal guardian of a minor changes his or her legal residence to another state following a period of legal residence in Georgia, the minor may continue to take courses for a period of twelve consecutive months on the payment of in-state tuition. After the expiration of the twelve-month period, the student may continue his or her registration only upon the payment of fees at the out-of-state rate.
4. In the event that a legal resident of Georgia is appointed as guardian of a nonresident minor, such minor will not be permitted to register as an in-state student until the expiration of one year from the date of court appointment, and then only upon a proper showing that such appointment was not made to avoid payment of the out-of-state fees.
5. Aliens shall be classified as nonresident students; provided, however, that an alien who is living in this country under an immigration document permitting indefinite or permanent residence shall have the same privilege of qualifying for in-state tuition as a citizen of the United States.

6. *Waivers:* An institution may waive out-of-state tuition for:
- (a) nonresident students who are financially dependent upon a parent, parents or spouse who has been a legal resident of Georgia for at least twelve consecutive months immediately preceding the date of registration; provided, however, that such financial dependence shall have existed for at least twelve consecutive months preceding the date of registration;
 - (b) international students, selected by the institutional president or his authorized representative, provided that the number of such waivers in effect does not exceed one percent of the equivalent full-time students enrolled at the institution in the fall quarter immediately preceding the quarter for which the out-of-state tuition is to be waived;
 - (c) full-time employees of the University System, their spouses, and their dependent children;
 - (d) medical and dental residents and medical and dental interns at the Medical College of Georgia;
 - (e) full-time teachers in the public schools of Georgia or in the programs of the State Board of Technical and Adult Education and their dependent children. Teachers employed full-time on military bases in Georgia shall also qualify for this waiver;
 - (f) career consular officers and their dependents who are citizens of the foreign nation which their consular office represents, and who are stationed and living in Georgia under orders of their respective governments. This waiver shall apply only to those consular officers whose nations operate on the principle of educational reciprocity with the United States.
 - (g) military personnel and their dependents stationed in Georgia and on active duty unless such military personnel are assigned as students to System institutions for educational purposes.
 - (h) selected graduate students at University-level institutions;
 - (i) students who are legal residents of out-of-state counties bordering on Georgia counties in which an institution of the University System is located and who are enrolled in said institution.
7. A student is responsible for registering under the proper residency classification. A student classified as a nonresident who believes that he/she is entitled to be classified as a legal resident may petition the Registrar for a change in status. The petition must be filed no later than sixty (60) days after the quarter begins in order for the student to be considered for reclassification for that quarter. If the petition is granted, reclassification will not be retroactive to prior quarters. The necessary forms for this purpose are available in the Registrar's office.
8. Questions concerning classification for fee-payment purposes should be directed to one of the following persons:
- Undergraduate applicants for admission:*
 Director of Admissions
 212 Terrell Hall
- Graduate applicants for admission:*
 Director of Graduate Admissions
 534 Boyd Graduate Studies Research Center
- Currently enrolled students:*
 Assistant Registrar
 105 Academic Building.



Academic Information

The statements set forth in this Bulletin are for informational purposes only and should not be construed as the basis of a contract between a student and this institution. While the provisions of this Bulletin ordinarily will be applied as stated, the University of Georgia reserves the right to change any provision listed in this Bulletin including, but not limited to, academic requirements for graduation, without actual notice to individual students. Every effort will be made to keep students advised of any such changes. Information on changes will be available in the Registrar's Office, in the offices of the academic deans, and in the Office of the Vice President for Academic Affairs.

Undergraduate and Professional Degrees Offered by the University

The University will confer degrees upon candidates who have satisfied the prescribed regulations and conditions as follows:

- A. *In the College of Agricultural and Environmental Sciences*, the degrees of Bachelor of Science in Agriculture (B.S.A.), Bachelor of Science in Agricultural Engineering (B.S.A.E.), Bachelor of Science in Biological Engineering (B.S.B.E.), and Bachelor of Science in Environmental Health (B.S.E.H.);
- B. *In the Franklin College of Arts and Sciences*, the degrees of Bachelor of Arts (A.B.), Bachelor of Science (B.S.), Bachelor of Science in Chemistry (B.S. Chm.), Bachelor of Fine Arts (B.F.A.), Bachelor of Music (B. Mus.), Bachelor of Science in Physics (B.S. Pcs.), Bachelor of Science in Physics and Astronomy (B.S. Pcs. & Ast.);
- C. *In the Terry College of Business*, the degree of Bachelor of Business Administration (B.B.A.);

- D. *In the College of Education*, the degree of Bachelor of Science in Education (B.S.Ed.); the degree of Associate of Applied Science (A.A.S.);
- E. *In the School of Environmental Design*, the degree of Bachelor of Landscape Architecture (B.L.A.);
- F. *In the College of Family and Consumer Sciences*, the degree of Bachelor of Science in Family and Consumer Sciences (B.S.F.C.S.);
- G. *In the D. B. Warnell School of Forest Resources*, the degree of Bachelor of Science in Forest Resources (B.S.F.R.);
- H. *In the Henry W. Grady College of Journalism and Mass Communication*, the degree of Bachelor of Arts in Journalism (A.B.J.);
- I. *In the School of Law*, the degree of Juris Doctor (J.D.);
- J. *In the College of Pharmacy*, the degree of Bachelor of Science in Pharmacy (B.S. Phar.), the degree of Doctor of Pharmacy (Pharm.D.);
- K. *In the School of Social Work*, the degree of Bachelor of Social Work (B.S.W.);
- L. *In the College of Veterinary Medicine*, the degree of Doctor of Veterinary Medicine (D.V.M.).

GRADUATION RATE

Pursuant to Public Law 101-542, the Student Right to Know and Campus Security Act, the six year graduation rate for all students who enrolled at the University as first-time, full-time, baccalaureate degree-seeking students in the freshmen class of 1988 was 61 percent. The rate for male students was 59 percent; the rate for female students was 63 percent.

DUAL DEGREES

A graduate of any program may receive the baccalaureate degree of any other program

by completing the additional studies required in that program. The minimum resident requirement is 45 quarter hours. Courses taken in residence at the University of Georgia for the purpose of meeting program requirements for one degree may be counted toward the resident requirement for the second degree. (Students not enrolled at the University for a period of five years or more must complete 45 quarter hours in residence for the second degree in addition to the courses taken to satisfy the first degree.) Individual schools and colleges within the University may impose additional resident requirements. Eligibility for graduation with academic honors does not apply to the second baccalaureate degree. Students pursuing an additional major within the same degree objective are considered to be enrolled for a double major.

MINOR FIELDS OF STUDY

A minor program comprises 20 to 29 quarter-credit hours of advanced courses (numbered 300 or above) in a field of study other than the student's major. The intent of establishing minor fields of study is to offer students the opportunity to broaden their education through the minor field. The selection of a minor field of study should be made to fulfill this goal.

The availability of a minor is noted in this Bulletin alongside the description of the corresponding major or certificate program. The department shall publish and make available to students the requirements for the minor—the total number of hours required, along with the enumeration of any particular courses that are mandated or excluded, residency requirements (if any) for the minor courses, and grade requirements for minor courses if those requirements differ from the general University standard for credit (a D as the minimum passing grade). The University Curriculum Committee has determined that if a course satisfies a major requirement it cannot also be used to satisfy course requirements in the minor field of study.

A student may select a minor in consultation with his or her advisor. The student may then consult an advisor in the minor field who can inform the student of remaining requirements for the minor. When the student has met the requirements for the minor, the advisor in the minor field will then certify that fact to the student's dean. The completed minor will be recorded on the student's permanent

transcript, but not on the diploma. For students completing a minor before graduation, the minor will appear on the transcript at the time of graduation. For students completing a minor after graduation, the statement shall appear on the transcript in chronological order following the courses taken subsequent to graduation. A student must be enrolled at the time a minor is approved by the Board of Regents, or subsequent to that date, to receive credit for the minor. A student may have more than one minor.

MILITARY COMMISSIONS

A student who satisfactorily completes the advanced ROTC program may be commissioned as second lieutenant in the U.S. Army or U.S. Air Force in conjunction with the degree. Detailed information concerning the Army and Air Force ROTC programs may be found under "Division of the Armed Services."

Degree Requirements

THE UNIVERSITY SYSTEM OF GEORGIA CORE CURRICULUM

The core curriculum was established within the University System of Georgia as a means of facilitating the transfer of credit for students at the lower division level as they work toward baccalaureate degrees within University System colleges and universities. The various institutions within the University System, in establishing their core curricula, provide for (1) 90 quarter credit hours of which a minimum of 60 are in general education and 30 in major related courses; (2) assurances that all courses satisfactorily completed in the core curriculum of any unit of the University System will be acceptable and transferable to other units of the University System; and (3) the preservation of the maximum possible amount of institutional autonomy.

Briefly, the University System core curriculum includes:

	HOURS
AREA I HUMANITIES/FINE ARTS,	20
including, but not limited to, grammar and composition and literature.	
AREA II MATHEMATICS AND THE NATURAL SCIENCES,	20
including, but not limited to, mathematics and a 10-hour sequence of laboratory courses in the biological or physical sciences.	

AREA III SOCIAL SCIENCES, 20
including, but not limited to, history
and American government.

**AREA IV COURSES RELATED TO
MAJOR,** 30
appropriate to the major field of the
individual student.

Each school or college of the University of Georgia that offers a baccalaureate degree program has developed its core program and complies with the University System core curriculum requirements. Detailed information is given in the sections for the individual schools and colleges in this Bulletin.

ENGLISH, MATH, SCIENCE, AND PHYSICAL EDUCATION REQUIREMENT

Upon completion of 90 quarter-credit hours, exclusive of courses in academic assistance and remedial courses, all undergraduate students must have met the following four conditions:

1. Satisfied the Freshman English requirement.
2. Earned or exempted at least five quarter-credit hours in a course that will satisfy the mathematics requirement appropriate to the student's degree and major.
3. Earned at least five quarter-credit hours in a lab science course, or the appropriate required core curriculum science course.
4. Earned two quarter-credit hours in a basic physical education course or courses.

Students who have not satisfied these requirements upon completion of 90 credit hours shall be required to register at their next enrollment for the necessary courses that will satisfy these requirements.

Transfer students entering with 90 or more credit hours must satisfy these requirements prior to completing 45 college-level credit hours at the University of Georgia.

Undergraduate professional students in Forest Resources, Journalism, Pharmacy, and Social Work shall be subject to these requirements.

Transient students, non-degree students, and students with a prior baccalaureate degree shall be exempt from this policy.

This policy will be effective for students entering the University in the fall of 1990 or later, except that the requirement to earn two quarter-credit hours in a basic physical education course or courses shall be effective for students who matriculate fall quarter 1991

or later. Any of these requirements may be satisfied through entrance or placement exams, or through transfer credit.

ENVIRONMENTAL LITERACY REQUIREMENT

All students who matriculate in fall 1993 and thereafter must attain knowledge of basic principles concerning environmental issues. This requirement may be satisfied by taking one or more designated courses, many of which also satisfy basic core curriculum requirements. Consult school and college advisors for the options available. This requirement pertains only to the first baccalaureate degree; it does not apply to any subsequent degrees.

EXAMINATIONS ON THE CONSTITUTIONS

Examinations on the Constitution of the United States and that of the state of Georgia are required of all persons receiving a degree from the University, including those transferring Political Science 101 from institutions outside the state unless exempted by courses dealing with these constitutions. Approved courses for exemption are as follows:

U.S. Constitution

POL 101
POL 105H
POL 408
POL 465
POL 482
POL 483
POL 484
HIS 251 and 252
HIS 251 and 254H
HIS 415E
HIS 253H and 254H
HIS 253H and 252

U.S. and Georgia Constitution

POL 101 (taken in Georgia)
POL 105H (taken in Georgia)
POL 465 (taken in Georgia)
HIS 415E and 417M

Georgia Constitution

SOS 104
HIS 417M
POL 465 (taken in Georgia)

Examinations are given once each quarter; dates are announced in the *Schedule of Classes*. Students who fail the examination must satisfy the requirement with coursework. No re-examination is permitted.

EXAMINATIONS ON UNITED STATES AND GEORGIA HISTORY

An examination on the history of the United States and Georgia is required of all persons receiving a degree from the University, unless exempted by one of the following courses: HIS 251, 252, 253H, 254H, 311H, 417M.

No re-examination is permitted. Examinations are given to freshmen during orientation and once each quarter to upperclassmen. Examination dates are announced in the *Schedule of Classes*.

REGENTS' TESTING PROGRAM

Each institution of the University System of Georgia shall assure the other institutions, and the System as a whole, that students obtaining a degree from that institution possess certain minimum skills of reading and writing.

The Regents' Testing Program has been developed to help in the attainment of this goal. The objectives of the Testing Program are: (1) to provide System-wide information on the status of student competence in the areas of reading and writing; and (2) to provide a uniform means of identifying those students who fail to attain the minimum levels of competence in the areas of reading and writing.

Passing the Regents' Test is defined as having passed all components of the test by scoring above the cutoff score specified for each component. The test may be administered either in its entirety or as one or more components depending on the needs of the students. If one component of the test is passed, that component need not be retaken.

A student holding a baccalaureate or higher degree from a regionally accredited institution of higher education will not be required to complete the Regents' Test in order to receive a degree from a University System institution.

In order to implement effectively the goals of the Testing Program:

1. Students enrolled in undergraduate degree programs shall pass the Regents' Test as a requirement for graduation. Students, including transfer students and/or readmitted students, may take the test after they have completed the required basic core English courses. They may be required to take the test in the quarter

after they have earned 45 hours of college-level credit if the test has not been passed previously. Institutions, however, may not delay initial testing beyond the student's having earned 60 quarter credit hours.

2. All students who have not passed the Regents' Test during the quarter in which they will have earned 75 quarter credit hours shall be required to take non-degree credit courses in remedial reading and/or remedial writing in each subsequent quarter of attendance until they have passed all components of the test.
 - a. No enrolled student required to take a remedial course may retake the Regents' Test until the appropriate course is completed with an S grade.
 - b. Failure to complete the remedial course(s) satisfactorily will result in a U posted on the student's permanent record, prohibiting the student from registering to retake the Regents' Test. Additionally, the remedial course(s) must be repeated each quarter until the Regents' Test requirement is satisfied.
3. Having passed the Regents' Test shall not be a condition of transfer into an institution. Students transferring from System programs which require the test shall be subject to all provisions of this policy. Students from institutions outside the System, or from System programs not requiring the test, who transfer into a System institution with 60 or more college-level credit hours shall take the test no later than their second quarter of enrollment and in subsequent quarters shall be subject to all provisions of this policy.
4. Students whose native tongue is not English may choose to take an alternate version of the Regents' Exam to certify literacy competence. The Writing Center, 72 Park Hall, offers an alternate examination at approximately the same date as the usual exam. Otherwise, all stipulations included in this section apply to international students. International students may contact the Writing Center at 542-2119 or via e-mail addressed to wrctr@parallel.park.uga.edu.
5. For extraordinary situations, each institution shall develop special procedures for certifying the literacy competence of students. A written description of those procedures shall be submitted to the Chancellor for approval. A record of the

action shall be reported by the Chancellor to the Education Committee of the Board of Regents. Such procedures shall include provision for remediation if needed and formal examination prior to certifying competency. Such examination shall equal or exceed the standards of the Regents' Testing Program.

6. Students may request a formal review of their failure on the essay component of the Regents' Test if their essay received at least one passing score among the three scores awarded and if they have successfully completed the courses in English composition required by the local institution. This review will be conducted in accordance with Board-approved procedures.
7. Remedial work as required under the above policy shall be in keeping with regulations in satisfaction of federal and state student financial assistance and other such eligibility programs.
8. These regulations shall not prohibit institutions from increasing requirements affecting the Regents' Testing Program, provided such increased requirements are authorized by the Chancellor, and provided further that such requirements are published in the official bulletin of the institution prior to implementation. Such additional requirements shall in no way affect the transfer of students from one institution to another or the readmission of students to University System institutions.

Students' Review Procedures— Regents' Testing Program

1. The review will be initiated at the campus level, with procedural matters to be determined by the institution. The on-campus review, however, will be conducted by the three (3) faculty members designated by the institution as a review panel.
2. The on-campus review panel may (a) sustain, by majority opinion, the essay's failing score, thus terminating the review process, or (b) recommend, by majority opinion, the re-scoring of the essay by the Regents' Testing Program central office. The student will be notified concerning the results of the on-campus review.
3. If the on-campus panel recommends re-scoring of the essay, that recommendation will be transmitted in writing, along with a copy of the essay, to the office of

the system Director of the Regents' Testing Program. The Director will utilize the services of three (3) experienced Regents' essay scorers other than those involved in the original scoring procedures for the essay component of the Regents' Test. The decision of this panel on the merits of the essay will be final, thus terminating the review process. The student will be notified through the institution concerning the results of the review.

BASIC PHYSICAL EDUCATION

1. All students entering the University fall quarter 1991, and thereafter, who matriculate for their first baccalaureate degree are required to pass two credit hours of basic physical education. This requirement may be satisfied by successful completion of any combination of basic physical education courses. Basic physical education courses are designated PEB 100-199; courses for physical education majors (PES), health promotion and education majors (HPB) or recreation majors (REC) will not satisfy the basic requirement. This requirement shall not apply for those entering a second or subsequent bachelor's degree program. The total number of credit hours in basic physical education courses that may be applied toward an undergraduate degree will be determined by individual schools and colleges. Undergraduate students entering fall 1991 or later must satisfy the basic physical education requirement prior to completion of 90 quarter-credit hours. Students entering the University prior to fall quarter 1991 and who graduate fall quarter 1991 or later may at their option choose whether they will be governed in their degree requirement by the basic physical education requirement at the time they matriculated or by the new requirement.
2. All students entering the University fall quarter 1977 through summer quarter 1991 who matriculate for their first baccalaureate degree are required to pass five hours of basic physical education. This requirement may be satisfied by successful completion of any combination of basic physical education courses. Basic physical education courses are designated PEB 100-199; courses for physical education majors (PES), health promo-

tion and education majors (HPB) or recreation majors (REC) will not satisfy the basic requirement. This requirement shall not apply for those entering a second or subsequent bachelor's degree program. The number of credit hours which may be applied toward an undergraduate degree will be determined by individual schools and colleges.

3. All baccalaureate degree candidates who entered the University prior to fall quarter 1977 are required to satisfy six courses of basic physical education. Students entering the University with ninety hours or more credit will be considered to have met this requirement. Students transferring fewer than ninety hours will exempt one course in basic physical education for each fifteen hours of credit transferred. A maximum of six credit hours may be applied toward a degree.

The above requirements are applicable to all students except as follows:

1. **Veterans:** Veterans who have served 180 days or more may receive credit based on their military service for two basic physical education courses at one hour each, five basic physical education courses at one hour each, or six basic physical education courses at one hour each, depending on date of matriculation. Veterans may receive no more credit for basic physical education courses than is required for a degree. To establish credit, veterans will be required to present a copy of their DD214 form to the Admissions Office.
2. **Disabled Students:** Adapted physical education classes are available to facilitate the meeting of the University physical education requirement by disabled students. Policies with regard to physical education for disabled students are as follows:

The School of HPER is committed to fulfilling the physical education needs of all students. An adapted physical education program operates as a normal extension of the basic physical education program for students who, because of temporary or permanent disability or medical conditions, cannot participate in the mainstream physical education program. It is through this adapted program that, with few exceptions, all students are able to satisfy the basic physical education requirement. Students with health prob-

lems or disabilities should consult with the Staff Physician at the University Health Service. Students will in turn be referred to the adapted physical education specialist who works in concert with the University Staff Physician, and subsequently will be placed in appropriate physical education activities.

There are no exceptions to the physical education requirement for reasons of age, sex, or disability except upon special recommendation by the Staff Physician at the University Health Service.

ENGLISH 101 AND 102

English 101 and 102 (English Composition) are required for all undergraduate degrees from the University of Georgia. A grade of C or better is required for English 101 and an average of 2.0 or better is required for both courses.

Transfer students not receiving freshman English credit for writing courses taken at other institutions should bring catalog descriptions of those courses for review to the Freshman English Office, 135 Park Hall.

RESIDENT REQUIREMENT

Students who are candidates for a baccalaureate degree for the fall quarter 1995 and thereafter must earn 60 of the last 90 quarter credit hours in residence. In addition, 20 of the quarter credit hours required for a student's major must be earned in residence. Courses which are remedial in nature and are numbered less than 100 shall not be counted in satisfaction of this requirement. Students may receive resident credit for University-sponsored studies abroad programs for which course registration and fee payment are effected through the University. University of Georgia students participating in a University-approved academic program (such as the National Student Exchange) are exempt from that part of the residency requirement that states 60 of the last 90 quarter credit hours be completed at the University; in such cases students need only complete 60 hours at the University in order to satisfy the residency requirement. Credit earned through programs sponsored by other institutions, organizations, or approved student exchange programs will be recorded as transfer credit.

Students who present acceptable college credit earned before September 1960, or

who are enrolled for a second baccalaureate degree, may satisfy the resident requirement by completing in residence 45 hours in courses numbered 200 and above with a cumulative average grade of 2.0 or better.

Students enrolled in the combined B.S.-M.D. program with the Medical College of Georgia may satisfy the resident requirement at the University by completing 45 hours in residence in courses approved by the Dean of the Franklin College of Arts and Sciences.

Special Programs

ADVANCED PLACEMENT PROGRAM

The purpose of the Advanced Placement Program staff is to coordinate and supervise all advanced placement activities instituted by the University of Georgia and to provide liaison among the various University units in matters concerning both advanced placement and credit by exemption in basic courses.

Generally, advanced placement tests are given to new students during summer orientation sessions prior to fall enrollment. A special session is planned for students admitted to the Honors Program. It provides coordinated placement testing and academic counseling, followed by early class registration for fall quarter. Students invited to these sessions are urged to attend, as limited time during fall registration does not permit the same intensive testing and counseling procedure.

In addition to its own Advanced Placement Program, the University also participates in the Advanced Placement Program of the College Board. Students making an acceptable score on the College Board program are given, on the recommendation of the respective department, advanced placement and credit in all fields.

The University also grants exemption and credit on the basis of the College Board Achievement or Advanced Placement Test scores in foreign languages, mathematics, biology, physics, chemistry, economics, English, American history, European history, art, music, political science, and computer science.

Students planning to enroll at the University of Georgia who took the College Board

Achievement Tests and/or participated in the special Advanced Placement Program of the College Board should request that the College Board testing center submit their scores to the Director of Admissions, University of Georgia, Athens, Georgia 30602-6033. Inquiries concerning the Advanced Placement Program should be directed to the Honors Program, University of Georgia, Athens, GA 30602-6116, (706) 542-3240.

HONORS PROGRAM

The primary goals of the Honors Program are to provide superior undergraduate students with individualized intellectual opportunities designed to maximize their learning potential: smaller, enriched classes; direct and personal contact with top faculty members; greater curriculum flexibility; and the ability to strike out on their own in intellectual pursuits. Although most Honors courses and other instructional services are offered in the College of Arts and Sciences and in the College of Business, the Honors Program is open to all students in the University who qualify for Honors admission.

Most Honors courses have regular, non-Honors courses as counterparts. The Bulletin's description of each Honors course will identify its counterpart (if any). A student may not take for credit both an Honors course and its regular-course counterpart. Unless otherwise stipulated, an Honors course can substitute for its regular-course counterpart in meeting a prerequisite or degree requirement.

The following colleges and schools have designated coordinators of Honors work who may be contacted for additional information concerning the Honors Program in their respective disciplines: Agricultural and Environmental Sciences, Arts and Sciences, Business, Education, Environmental Design, Family and Consumer Sciences, Forest Resources, Journalism, Pharmacy, Social Work, and Veterinary Medicine. For detailed information on Honors Program opportunities, processes and recognition, consult the Honors Program Student Handbook that is available in the Honors Program Office. Inquiries concerning the Honors Program should be directed to the Honors Program, University of Georgia, Athens, GA 30602-6116, (706) 542-3240.

STUDY ABROAD PROGRAMS

The University of Georgia sponsors a variety of study abroad programs. International Services and Programs (ISP) advises and provides information on study abroad programs for summer, quarter, semester, or academic year periods. The ISP office also maintains an extensive library for those seeking study, work, and travel abroad opportunities.

Among the University of Georgia's interdisciplinary study abroad programs, the School of Art offers a program in Cortona (Tuscany), Italy, open for spring, summer, and fall quarters. Established in 1970, each ten-week program consists of a travel period (Rome, Pompeii, Venice, etc.) and residential studio and classwork. Graduate and undergraduate credit courses are available in art history, studio art (ceramics, book arts and papermaking, drawing, interior design, jewelry and metalwork, painting, printmaking, photography, sculpture, and watercolor), landscape architecture, and Italian. Stipends are competitively available. Applications are due approximately ten weeks before the beginning of each term. For more information, contact Studies Abroad-Cortona, School of Art, (706) 542-7011.

Graphic design students may participate in an exchange program with the prestigious Fachhochschule Fur Gestaltung Pforzheim, located near Heidelberg, Germany. Classes begin in September and end in February, with organized field trips throughout Europe. For information, contact Ken Williams, School of Art, (706) 542-1567.

Through the departments of Sociology, Anthropology, and Political Science, students can earn between 10 and 15 credits during a six-week summer curriculum in Verona, Italy. The program examines some of the behavioral and sociological aspects of ecological and environmental problems impacting Verona. For information, contact Dr. A. P. Garbin at (706) 542-3232.

Each summer the University of Georgia departments of English, History, and Political Science offer a six-week program at Oxford University. The participants live at historic Jesus College. Students may earn up to 10 credit hours, some in core courses, some in their major. The faculty consists of American and British scholars who teach small tutorials. For information, contact Judith Shaw at 342 Park Hall, (706) 542-1261.

The Classics Study Abroad Program in Rome, Italy is operated each summer for seven weeks. The program is designed especially for students who have not previously studied classical civilization. Fifteen credit hours can be earned and used to fulfill the literature/humanities and fine arts requirements of many schools. Instruction includes both regular classes and numerous field trips. Knowledge of a foreign language is not required. For further information, call (706) 542-2179 in Park Hall.

At undergraduate, graduate, and faculty levels, the Terry College of Business has exchange programs throughout the world with such countries as France, Holland, Germany, Chile, and Greece. For information, contact the Terry College of Business, (706) 542-3468, in Brooks Hall.

A six-week program in Italy and England is sponsored each summer by the Department of Drama and the College of Journalism and Mass Communication.

The University of Georgia also participates in several exchange programs which allow students to pay UGA tuition and fees while attending academic institutions overseas. Three exchanges are in England at the Universities of Lancaster, Reading, and DeMontfort. Two programs are offered in the French cities of Orlean and Lyon. Japan's Kansai Gaidai University is the site of a UGA Japanese exchange program. These exchanges are coordinated by the ISP office. In addition to UGA programs, many other institutions offer opportunities for overseas study, travel, and work abroad. Students may obtain information about these options through the ISP.

Some programs sponsored by the University of Georgia offer resident credit (otherwise, transfer credit is awarded); students should check with the individual program. Credit earned in programs sponsored by other institutions or organizations will be recorded as transfer credit if accepted by the University of Georgia. To obtain credit for programs, students must complete a Credit Approval Form before departing, and this form is obtained in the ISP office, 210 Memorial Hall, (706) 542-1557. Final determination on the transfer of credit will be made by the admissions office and/or the academic departments once the program is completed and course information submitted.

GOVERNOR'S INTERN PROGRAM

The Governor's Intern Program provides a unique academic experience while giving students a practical, firsthand look at agencies in state and local governments. The internships are full-time and last ten weeks. The earning of academic credit, while working on a specific agency project, is essential to a student's participation in the program. The amount of credit and all matters pertaining to that credit are left to the discretion of each student's department. A report is submitted by each intern to the Governor's Intern Program after each project's completion. Upon approval by the staff, the report is filed in the Georgia State Archives for future reference. The length of an internship is equal to that of a quarter's work at the University of Georgia. Applications may be obtained from the Career Planning and Placement Center, Clark Howell Hall.

MEDICAL COLLEGE OF GEORGIA SCHOOL OF NURSING AT ATHENS (SONAT)

In 1974 a program leading to a baccalaureate degree in nursing was established in Athens; this is a satellite to the regular program of the Medical College of Georgia School of Nursing in Augusta. In order to qualify, students must take 90 quarter hours of pre-nursing core curriculum. This may be completed as a student at the University of Georgia enrolled in Arts and Sciences, Pre-Nursing.

The student applies to the Medical College of Georgia to take the 90 quarter hours upper division courses in nursing. These classes are limited to nursing students and are taught by the faculty at the Medical College of Georgia School of Nursing in Athens (SONAT).

SONAT faculty supervise clinical experiences at a variety of health care agencies in the Athens and surrounding areas (may include Atlanta and Augusta).

Students enrolled in the SONAT program have all the rights and privileges of University students and also those of the Medical College of Georgia. Upon graduation from the Medical College of Georgia, students are eligible to take the National Council Licensing Examination.

SONAT offices are located in Athens.

ACADEMIC COMMON MARKET

The University of Georgia participates in the Academic Common Market, an agreement for sharing specialized academic programs among the participating states of the Southern Regional Education Board (SREB). Participating states are able to make arrangements for their residents who are fully admissible into specific University academic programs to enroll on an in-state tuition basis. Applicants must (1) be accepted for admission into one of the programs listed below, and (2) obtain certification of residency from the Common Market Coordinator in their home state. The following University programs are available to residents of the indicated states:

<i>PROGRAM</i>	<i>AVAILABLE TO RESIDENTS OF:</i>
BFA in Interior Design	Maryland
BFA in Scientific Illustration	Maryland, South Carolina, Virginia
BLA in Landscape Architecture	Tennessee
BMUS in Music Therapy	Alabama, Kentucky, Maryland, Mississippi, South Carolina, Tennessee
BS in Astronomy and Physics	Kentucky
BS in Genetics	Alabama, Kentucky, Louisiana, Maryland, South Carolina
BSFCS in Consumer Journalism	South Carolina
BMUS in Music Performance	Arkansas
BSFCS in Child and Family Development	Maryland

For further information about the Academic Common Market, contact the Registrar's Office or the Southern Regional Education Board, 592 Tenth Street, N.W., Atlanta, GA 30318-5790.



UNIVERSITY CENTER IN GEORGIA CROSS REGISTRATION PROGRAM

The University Center in Georgia is a consortium of nineteen public and private institutions of higher learning in the Atlanta/Athens area, including the University of Georgia. Founded in 1938, the consortium provides a structure to enhance educational opportunities through academic cooperation among the member institutions and their communities.

The purpose of cross registration is to provide opportunities for enriched educational programs by permitting students at any University Center institution to take courses at any member institution. To participate, cross registration students must enroll in at least one course at their home institution. Application forms and guidelines for cross registration may be obtained by contacting the University of Georgia cross registration coordinator at (706) 542-7715.

UNIVERSITY OF GEORGIA EVENING CLASSES

University of Georgia Evening Classes is a department of the Division of Academic Credit of the Georgia Center for Continuing Education. Evening Classes provides an accessible and coordinated program of academic credit courses in evenings and on weekends.

Students admitted to Evening Classes are eligible to register only for Evening Classes courses. Freshmen are required to complete a minimum of 45 quarter hours with a cumulative and overall 2.3 GPA to be eligible for day classes. Transfer students must earn a cumulative and overall 2.3 GPA to be eligible for a change of school.

University of Georgia Evening Classes offers students a varied schedule of courses, a dedicated teaching faculty, a professional academic advising staff, and individualized student support services.

Academic Advising

Academic advising is required for all University of Georgia Evening Classes students. Academic advisors are available to meet with students on an appointment basis from 8 a.m. to 5 p.m. Monday through Friday in the Evening Classes Office in the Georgia Center for Continuing Education. Advisors are also available during the quarter from 5:15 to

9:15 p.m. Monday through Thursday in the Evening Classes Office in Journalism 304. (Evening office hours may vary during summer quarter.)

Academic Support Services

Orientation sessions, math and English labs, career counseling, and study skills workshops are offered to currently enrolled Evening Classes students without charge. Evening Classes students may avail themselves of all academic support services provided by the University of Georgia. Math and English Reviews are also available for a nominal charge.

Regents' and Placement Tests

All University of Georgia students are required to pass the Regents' Test. Additional information concerning the Regents' Test and the English and Mathematics Placement Tests is provided in the Academic Information section of the *Undergraduate Bulletin*.

Registration

Students must be advised prior to registering. All students registering at the University of Georgia do so via the University's OASIS on-line registration system. Students wishing to register for University of Georgia Evening Classes courses should refer to specific OASIS and registration information in the *Evening Classes Quarterly Schedule*.

Schedule of Classes

Evening Classes offers a flexible schedule of classes which meet on Monday and Wednesday evenings, Tuesday and Thursday evenings, Monday through Thursday evenings, and on Saturday mornings. For a complete schedule of courses see the *Evening Classes Quarterly Schedule*.

Fees

For information concerning Evening Classes fees, refund policy, and refund schedule see the *Evening Classes Quarterly Schedule*.

Student Financial Aid

Evening Classes students are eligible to apply for financial aid. For information regarding application procedure and financial

aid policy, see the Student Financial Aid section of the *Undergraduate Bulletin*. Specific questions relating to eligibility for student financial aid should be addressed to the University of Georgia's Office of Student Financial Aid.

Academic Honors

Evening Classes students who have earned academic honors are recognized quarterly.

The Presidential Scholar's List includes all Evening Classes students who, during the preceding quarter, have made an average of 4.0, carried a load of at least 12 hours, and received no incomplete (I) grades.

The Dean's List includes all Evening Classes students who, during the preceding quarter, have made an average of 3.50 or higher, carried a load of at least 12 hours, and received no grades less than B and no incomplete (I) grades.

The Honor Roll includes all Evening Classes students who earn a minimum term average of 3.33 out of a possible 4.00.

Information

For specific information concerning University of Georgia Evening Classes, please refer to the *Evening Classes Quarterly Schedule*, call (706) 542-6400, or write to Evening Classes, Georgia Center for Continuing Education, University of Georgia, Athens, GA 30602-3603.

UNIVERSITY SYSTEM OF GEORGIA INDEPENDENT STUDY

The University System of Georgia Independent Study is a department of the Division of Academic Credit of the Georgia Center for Continuing Education. The mission of University System of Georgia Independent Study is to offer University System academic credit courses to University System students and individuals who are interested in earning academic credit through self-directed study.

Independent Study is a University System of Georgia academic program that provides freedom from the classroom structure, and, as a result, places the responsibility for learning directly on the student. Independent Study provides flexibility of registration, allowing students to register at any time and take several courses simultaneously with up to a year to complete each course. Independent Study is ideally suited for the student who is

purposeful, self-directed, and able to exercise self-discipline in completing requirements of a course without external deadlines. Independent Study courses are offered by academic departments located at five higher education institutions in the University System of Georgia. Faculty of the academic department prepare the courses offered and grade the lessons submitted by students to satisfy requirements of the courses. Academic credits earned through Independent Study are recorded on the student's permanent record in the University of Georgia Registrar's Office and may be used for degree requirements according to the regulations of the college or university from which the student plans to graduate.

Academic Policies

University of Georgia students who take Independent Study courses taught by UGA faculty have the option of registering for resident credit. The decision to grant resident credit is made at the time of Independent Study course registration and remains in effect until the course is completed. Only those students who have University of Georgia grade point averages of 2.0 in 30 or more hours of course work at the time of registration may enroll in a University of Georgia Independent Study course for resident credit. Students must request resident credit on their registration form, and eligibility for resident credit will be verified by Independent Study prior to registration. Resident credit earned through Independent Study may be used to satisfy the 60 resident quarter hours required by the University of Georgia for a baccalaureate degree. Resident credit will be included in both cumulative and overall grade point averages.

Independent Study courses offered by other University System colleges or universities must be taken for nonresident credit. Nonresident credit is considered transfer credit by the University of Georgia. Nonresident credit will be counted in a student's overall grade point average and recorded in a student's official record as transfer credit.

Students on academic or disciplinary dismissal shall not be permitted to register for an Independent Study course without a letter of permission from the student's academic dean. This letter of permission must specify the number of hours the student may earn while on academic or disciplinary dis-

missal. Students on academic or disciplinary dismissal may not earn resident credit for Independent Study courses offered through the University of Georgia.

University of Georgia students who have not completed the Academic Assistance Placement Test are not eligible to enroll in Independent Study courses. A University of Georgia student who is required to take an academic assistance course in an area of study may not register for an Independent Study course in that area until the academic assistance requirement has been satisfied.

Students registering for Independent Study are subject to Regents' testing requirements as outlined by the University System Board of Regents' policies.

The total number of hours, whether resident or non-resident, earned through Independent Study that may be applied toward a baccalaureate degree program may not exceed one-fourth of the hours required for University of Georgia graduation.

Registration and Information

Advisement should be sought through the appropriate advisor in a student's degree program prior to registering for Independent Study courses. To register for Independent Study, students should complete a registration form (available from the Independent Study office or from an Independent Study catalog). Tuition fees must be paid in full at the time of registration. Matriculation fees are based on a per-credit-hour rate regardless of credit hours taken or matriculation fees assessed by the University of Georgia. Independent Study will accept an invoice, or authorization to bill, from an outside agency as long as such authorized invoices do not contain conditions to be met before payment is made (e.g., payment may not be based on successful completion of a course). University of Georgia students receiving financial aid through the University may apply financial aid awards toward Independent Study matriculation fees (for both resident and non-resident credit).

Registration forms with appropriate fees should be sent to University System of Georgia Independent Study, Georgia Center for Continuing Education, University of Georgia, Athens, GA 30602-3603, or brought to the Independent Study office at the Georgia Center, Division of Academic Credit. Please call first to verify location. Independent Study

registration is continuous Monday through Friday, from 8:00 a.m. to 4:30 p.m. Registration procedures usually take approximately 20 minutes and students should plan their schedules accordingly. The office is closed during University of Georgia holidays. For further information, contact the Independent Study office at (706) 542-3243 or 1-800-877-3243. By e-mail: USGAIS@uga.cc.uga.edu.

GWINNETT UNIVERSITY SYSTEM CENTER

The Board of Regents of the University System of Georgia established the Gwinnett University System Center to provide higher education in Gwinnett County. The University of Georgia, Georgia State University, and DeKalb College participate in a consortium to provide academic courses at the undergraduate and graduate levels.

The University of Georgia offers resident credit courses at the Gwinnett University System Center that may be used as part of an approved degree program. Classes are taught by faculty approved by academic departments of the schools and colleges of the University.

Additional information concerning programs of study offered at the Gwinnett University System Center is available by contacting the University of Georgia Gwinnett Office (404) 995-6885.

General Academic Regulations and Information

THE ACADEMIC YEAR

The college year has four quarters of approximately eleven weeks each: fall quarter, latter part of September to Christmas holidays; winter quarter, first week in January to middle of March; spring quarter, March to early June; summer quarter, June to latter part of August. Exact quarter dates appear in the University calendar.

Students may enter the University at the beginning of any quarter. Only one commencement will be held each year in June recognizing graduates from the previous summer, fall, and winter quarters as well as candidates for spring quarter graduation. Prospective summer candidates may participate in the June ceremony but may not wear regalia associated with honors status.

UNITS OF CREDIT

The unit of credit is the quarter hour, representing one hour of class work per week for one quarter or its equivalent in other forms of instruction. Two or sometimes three hours of laboratory work are considered as the equivalent of one hour of class work.

Most University courses meet five times a week for one quarter and carry a credit of five quarter hours.

ACADEMIC WORKLOAD

The normal academic work load during the academic year is 15 hours per quarter for undergraduates and 10 hours per quarter for graduate students. In programs requiring more than 180 hours for graduation the load per quarter may be somewhat higher. Undergraduate students must carry 12 hours per quarter and graduate students 10 hours per quarter to be certified as full-time students. Undergraduate students must carry six hours per quarter and graduate students five hours per quarter to be certified as one-half time students. Full-time status may vary during the summer session.

During their work quarter, students participating in the Cooperative Education Program will be certified by the Registrar's Office as being enrolled as full-time students.

ACADEMIC ADVISING AND STUDENT RETENTION

Academic advisement is considered an essential part of the student's educational experience at the University of Georgia. Academic advisors are assigned to each student to assist in various areas of academics, including preregistration each quarter, choosing a major, and planning a program of study. Advisors aid students in making certain that all educational requirements of both the University and the specific degree program are met. Advisors cannot, however, provide a guarantee of graduation and/or certification within a specified period of time. Therefore, selection of appropriate courses to meet degree requirements is ultimately the student's responsibility.

Students experiencing academic difficulties or considering withdrawal from the University for any reason are encouraged to contact the Coordinator of Advising and Retention, 110 Old College, (706) 542-8376.

STUDENT RESPONSIBILITY

It is especially important that each student knows that it is his/her responsibility to keep apprised of current graduation requirements for a particular degree program.

ACADEMIC HONESTY

The University of Georgia seeks to promote and ensure academic honesty and personal integrity among students and other members of the University community. A policy on academic honesty (and procedural guidelines to adjudicate violations of academic honesty) has been developed to serve these goals. Academic honesty means performing all academic work without cheating, lying, tampering, stealing, receiving assistance from any other person or using any source of information that is not common knowledge (unless that assistance or use is authorized by the person responsible for supervising that academic work or fairly attributed to the source of assistance or information).

Academic honesty is vital to the very fabric and integrity of the University of Georgia. All students must comply with an appropriate and sound academic honesty policy and code of honest behavior. All members of the University community are responsible for and involved in bringing about an honest University and all must work together to ensure the success of the policy and code of behavior.

Specific regulations governing student academic conduct are contained in the policy manual, *A Culture of Honesty*, and these should be read to avoid any misunderstanding. All members of the academic community are responsible for knowing the policy and procedures on academic honesty. The policy manual has been made available to students and faculty through deans and department heads to assure understanding of the academic honesty system and its proper functioning.

Students and faculty who suspect that an act of academic dishonesty has taken place should contact the Office of the Vice President for Academic Affairs, 110 Old College, (706) 542-8376.

STUDENTS' RIGHT OF APPEAL

University of Georgia students have the right to appeal academic decisions. Usually the

COURSES AND CREDIT

Course Numbers

Courses numbered from 1 to 99 are either non-credit or academic assistance courses; those from 100 to 199 are designed for freshman and sophomore (junior division) students; those numbered 200 to 299 are mainly sophomore courses but, in special instances when justified by course and curricular requirements, may be given senior division (junior and senior) classification. Courses numbered 300 to 399 are generally designed for mixtures of junior and senior level students. Courses taken by juniors and seniors along with graduate students carry the numbers 400 to 599 for undergraduates and 600 to 799 for graduate students. Courses numbered 800 or 900 are open only to graduate students. Courses which carry an H suffix are Honors courses.

Course Changes

It is the responsibility of students to select the appropriate courses for their degree program. If students are uncertain as to their degree requirements, they should consult with their academic advisor/dean prior to scheduling.

Students are expected to attend classes on a regular basis during the drop/add period. A student who incurs an excessive number of absences may be withdrawn from the class at the discretion of the professor.

Students who find it necessary to make adjustments in their class schedules during the drop/add period must follow the procedures and adhere to the deadlines and dates published in the *Schedule of Classes*. No course may be added to a student's schedule after the first fourteen calendar days of a term, with the exception of a research, dissertation, or thesis course at the graduate level.

Fee Adjustments—Tuition is charged on a per quarter hour basis for up to 12 hours. Full tuition is charged for 12 or more quarter hours. If a schedule change results in an additional fee being due, the student should report to the Treasurer's Office to pay additional fees. No academic credit will be given unless all fees are paid by the end of the drop/add period.

appeal goes first to the unit responsible for the decision (for example, grades to the faculty members who assigned the grades; department requirements to the department; college or school requirements to the school; university requirements to the Educational Affairs Committee). An unfavorable ruling at one level can be appealed to the successive levels (viz., a faculty decision can be appealed to the department; a department ruling can be appealed to the college in which the instructional unit is located; a college-level ruling can be appealed to the Educational Affairs Committee; the Educational Affairs Committee ruling can be appealed to the President of the University; and, except for grade appeals, the President's ruling can be appealed to the Board of Regents). All grade appeals must be initiated within one calendar year from the end of the term in which the grade was recorded. Additional details on appeals of academic matters, including special provisions for appeals in academic dishonesty cases, can be obtained from the Office of the Vice President for Academic Affairs, 110 Old College, 542-8947.

CLASSIFICATION OF STUDENTS

In the undergraduate schools and colleges, students will be classified according to the number of academic quarter hours they have earned.

<i>Classification</i>	<i>Hours earned</i>
Freshman	Less than 45 hours
Sophomore	At least 45 hours
Junior	At least 90 hours
Senior	At least 135 hours

Junior Division and Senior Division

Some of the undergraduate schools and colleges further classify their students as junior division students or senior division students. In general, a junior division student is a freshman or sophomore; a senior division student is a junior or senior, and has completed at least 90 academic hours.

Law or honors students may enroll in graduate courses with the approval of their advisor, the course instructor, the graduate coordinator of the department in which the course is offered, and the Graduate Dean. Approval must be secured prior to registering for the course. Appropriate applications are available in the Honors Office and in the Law School.

Course Auditing

Students may audit courses with the approval of their academic dean and the department offering the course. The registration procedure is the same as registration for credit except that the auditor must request audit status at the time of registration.

Fees for auditors are the same as those for students registered for credit. After the drop/add period, credit registrations may not be changed to audit, and audit registrations may not be changed to credit registrations.

Course Challenging

Insofar as accrediting policies permit, the University allows a student the opportunity to receive resident credit for courses by examination without attending the regular classes. Although specific standards of eligibility for challenging a course vary somewhat among the schools and colleges, in general the student must (1) demonstrate to the department in which the course is offered evidence of independent study to master the materials required in the course; (2) not be currently enrolled in the course to be challenged, nor have previously completed the course; and (3) be currently enrolled in the University. Upon completion of the course challenge the instructor will complete and file an official Course Challenge Form with the Registrar of the University.

Based upon the results of the examination, regular grades of A, B, C, D, or F are assigned for the challenged course unless the course is not one authorized to receive these grades, in which case the appropriate grade will be assigned from among those available for the course.

Some courses cannot be challenged. A student should check with the dean or department head regarding the procedure for challenge within a particular school/college.

Class Attendance

Students are expected to attend classes regularly. A student who incurs an excessive number of absences may be withdrawn from a class at the discretion of the professor.

Withdrawal from Courses

Students who wish to withdraw from a course should initiate the withdrawal procedure within the instructional department or with

their advisor, if required by their school or college. Instructors who wish to withdraw a student from a course because of excessive absences should initiate the withdrawal procedure within the instructional department. (The term "excessive absences" is defined in the syllabus for the course.)

The instructional department should forward the completed withdrawal form with the instructor's signature and grade assignment to the Registrar's Office. Withdrawal forms for graduate students must be routed through the Graduate Records Office.

Students who withdraw from a course should be aware of the fact that a reduction in their course load because of withdrawal may affect their financial aid, their athletic eligibility, and/or their full-time student status. Students should contact the appropriate office if they have questions about the impact of their withdrawal from a course. Students who are returning from academic dismissal are advised to consult with their academic advisor prior to withdrawal. Veterans and dependents of veterans who receive educational benefits must notify the Office of Veterans Education Benefits in the Office of the Registrar of any course load reductions.

An undergraduate student who withdraws from a course or is withdrawn by the instructor for excessive absences prior to the midpoint of a quarter is assigned a grade of W or WF by the instructor. A student who withdraws or is withdrawn for excessive absences after the midpoint of the quarter (date to be specified in the *Schedule of Classes*) is assigned a grade of WF, except in those cases in which the student is doing satisfactory work and the withdrawal is recommended by the Office of Student Affairs because of emergency or health reasons.

Anytime a drop or withdrawal is initiated by someone other than the instructor, the instructor and the student will be notified by the Registrar's Office that the student has been dropped or withdrawn from the class. If a student is withdrawn from a class, the instructor must be allowed the opportunity to provide a grade for the course.

No instructional unit shall drop a student for lack of a prerequisite after the end of one calendar week from the beginning of the term.

No refunds for a reduction in hours due to a withdrawal are authorized. Only credit hour

reductions effected by the drop/add process will generate a refund.

A grade of W signifies that the student was passing the course at the time of withdrawal. Such a grade, even if the course was withdrawn from for medical reasons, does not relieve the student from the regular probation and exclusion rules. See "Academic Probation and Dismissal."

Forfeiture of Course Credit

By registering for and receiving a grade in a course for which credit hours have already been granted, either by work at the University or by transfer, a student forfeits the previous credits in that course.

Extension and Independent Study Credit

The total number of hours that may be earned toward an undergraduate degree at the University by either extension or independent study or both shall not exceed one fourth of the hours required for graduation.

Military or Extra-Institutional Experience and Credit

United States Armed Forces Institute (USAFI) courses are not recognized by the University unless they are completed through an accredited institution which grants recognized college credit for same. Such courses are regular correspondence courses and are administered under the Cooperating College Program of USAFI.

Inquiries concerning in-service training should be directed to the Director of Admissions. Evaluations of this training will not be made until such time as the student is accepted for study on the University campus.

College Level Examination Program (CLEP) Tests

Credit may be granted in certain subject areas for satisfactory completion of the College Level Examination Program (CLEP) Tests. Students with prior credit in the field or a related field of the subject area involved will not be granted credit. The University administers these tests through the Testing and Evaluation Center. In general, they are also administered by the education officer on military posts or by centers established by the College Board, of which the University is one.

FINAL EXAMINATIONS

Final Examination Policy

A final examination schedule is published quarterly by the Vice President for Academic Affairs and a preliminary copy is printed in the official *Schedule of Classes* publication each term. No time and date departures from the examination schedule should occur without prior approval of the dean of the school or college and the Vice President for Academic Affairs. Similar advance approval also must be obtained to administer standardized, departmental "mass" examinations to groups of students enrolled in the same course.

Although there are special courses where a final examination of the regular type may not be appropriate, each student must be provided the opportunity to stand for a final examination as part of the completion of a full instructional term. Each instructor has the authority to design and administer the final examination in whatever manner is appropriate. Additionally, the instructor has the authority to structure the course syllabus and content so that the final examination may be a summative evaluation of the entire term's work or a portion of the term's work.

Admission to Course Examinations

Students who have not registered for the course will not be admitted to the final examination, and only under extraordinary circumstances will they be admitted to the examination unless they have attended at least 50 percent of the total class and laboratory exercises held in the course.

GRADES

Grading System

The grading system for the University of Georgia is as follows:

- A** Excellent
- B** Good
- C** Satisfactory
- D** Passing
- F** Failure
- WF** Withdrew, failing. This grade indicates that the student was permitted to withdraw from the course while doing unsatisfactory work. Withdrawal from a course under these circumstances is equivalent to a failure. This grade is included in the academic average.

- I** Incomplete. This symbol indicates that a student was doing satisfactory work but, for non-academic reasons beyond his/her control, was unable to meet the full requirements of the course. If an I is not satisfactorily removed after three quarters, the symbol I will be changed to the grade F by the appropriate official.
- W** This symbol indicates that a student was permitted to withdraw without penalty. Withdrawals without penalty will not be permitted after the midpoint of the quarter (date to be specified in the *Schedule of Classes*) except in cases of hardship as determined by the appropriate official.
- S** This symbol indicates satisfactory participation in certain required courses. Normally S grades are given in a limited number of professional, seminar, or graduate-level courses. Credit is included in hours earned. The grade is not included in the academic average.
- U** This symbol indicates unsatisfactory performance in certain required courses in which S grades may normally be given. No credit is given. The grade is not included in the academic average.
- V** This symbol indicates an audit. No credit is given. The grade is not included in the academic average.
- K** This symbol indicates that a student was given credit for the course via a credit by examination program approved by the faculty; e.g., CLEP, AP, Proficiency, etc.
- ER** This symbol indicates an error in reporting. ER's not removed by the end of the quarter subsequent to their assignment will be converted to grades of WF.
- NR** This symbol indicates that a grade was not received by the Registrar's Office in time for processing. The NR symbol will be replaced by a grade upon receipt of an official grade change form from the instructor.

The cumulative grade point average is based on all residence hours attempted at the University exclusive of S and U grades.

Conversion of Letter Grades to Grade Points

For purposes of computing grade point averages, letter grades are converted into numerical equivalents:

A	4.0	I	*
B	3.0	S	*
C	2.0	U	*
D	1.0	V	*
F	0	K	*
WF	0	W	*

*Not computed

Grade Reports

Quarterly reports of grades will be mailed directly to students at their permanent address.

Minimum Grade Point Average

A minimum cumulative grade point average of 2.00 is required to meet all undergraduate graduation requirements. A student will not be approved for graduation if he or she has a grade of I which, when changed to a recorded grade, could cause the student's grade point average to fall below the minimum required for graduation. This policy applies to students for all degrees conferred by the University.

Change in Grades

A grade in a course recorded by the Registrar cannot be changed except in the following circumstances:

A symbol of I not removed after three quarters becomes an F.

A symbol of ER not removed after one quarter becomes a grade of WF.

Any grade will be changed upon a written statement by the instructor that the grade was a factual error. All grade changes are subject to approval by the instructor's department head and the Dean's Office.

ACADEMIC HONORS

Graduation with Honors

The University awards degrees with honors to candidates who meet specified standards of academic excellence. In order to be considered for a degree with honors, a student must meet the following requirements:

1. Graduating seniors whose first matriculation at the University of Georgia occurred in September 1977 or thereafter will be recommended for graduation with honors on the basis of their *overall* grade point average for all college-level work

attempted. The overall grade point average or all-college average includes all work attempted at the University of Georgia as well as all college-level transfer work attempted prior to or subsequent to matriculation at the University. Respective standards are as follows:

HONORS DESIGNATION	REQUIRED OVERALL GPA
Summa cum laude	3.90
Magna cum laude	3.70
Cum laude	3.50

Only first baccalaureate degree candidates are eligible for graduation with honors.

2. Graduating seniors whose first matriculation at the University of Georgia occurred between September 1975 and summer 1977 will be recommended for graduation with honors on the basis of their *overall* grade point average for all college-level work attempted. The overall grade point average or all-college average includes all work attempted at the University of Georgia as well as all college-level transfer work attempted prior to or subsequent to matriculation at the University. Respective standards are as follows:

HONORS DESIGNATION	REQUIRED OVERALL GPA
Summa cum laude	3.90
Magna cum laude	3.60
Cum laude	3.30

Only first baccalaureate degree candidates are eligible for graduation with honors.

3. Graduating seniors whose first matriculation at the University of Georgia occurred prior to September 1975 will be recommended for graduation with honors on the basis of the grade point average and scholastic standards in effect at the time they first matriculated as listed in the 1973-75 and 1975-77 University Bulletin.
 - a. Minimum of 90 quarter hours in residence after reaching junior classification.
 - b. Based on all credit attempted in the quarter in which hours attempted equal a minimum of 90.
 - c. All hours attempted in the final quarter before graduation included.
 - d. Respective standards as follows:

Summa cum laude	3.90
Magna cum laude	3.60
Cum laude	3.30

In order to qualify for honors graduation, a student must have a minimum of 75 quarter hours in which a letter grade (A,B,C,D, or F) was assigned.

First Honor Graduate

Beginning with the August 1977 graduating class, each student completing his/her first baccalaureate degree with an overall grade point average of 4.0 will be designated a First Honor Graduate.

Presidential Scholar and Dean's List

The University encourages excellence in scholarship and gives recognition to students whose work is superior by publishing the Presidential Scholar and Dean's Lists from each school or college at the end of each quarter. To be named a presidential scholar, students must have achieved during the preceding quarter a grade point average of 4.00, earned at least 12 hours in courses numbered 100 or higher, and received no unsatisfactory or incomplete grades. To be named to the Dean's List, students must have achieved during the preceding quarter a grade point average greater than or equal to 3.50 but less than 4.00; earned at least 12 hours in courses numbered 100 or higher; and received no grades below a B, no unsatisfactory grades, and no incomplete grades.

Honor Fraternities and Societies

Several honor fraternities and societies at the University extend recognition to students on the basis of scholarship and good character. There are chapters of Phi Beta Kappa, Sigma Xi, Phi Kappa Phi, and many college, school, and departmental honor societies.

Honors Day

Honors Day was introduced to give public recognition to students who achieve high scholastic records. Undergraduate students who are in the first five percent of their classes, based on cumulative grade point averages, are included in the Honors Day program.

GRADUATION REQUIREMENTS

Candidates for degrees must show that they have met all general University requirements for such matters as registration and payment of fees and special requirements of the college or school in which they have been registered.

Changes in graduation requirements shall not be made retroactively unless there is clear and compelling reason for doing so. Graduation requirements will be determined as follows:

- a. The general university requirements stated in the Bulletin that is current at the time a student matriculates as an undergraduate or graduate student at the University will be the general University requirements which the student must meet for graduation.
- b. Requirements imposed by colleges or free-standing schools for graduation will be determined by the Bulletin that is current at the time a student transfers to or enters the college or free-standing school.
- c. Requirements for a major, a certificate program, or a minor will be determined by the Bulletin that is current at the time a student declares a major, a minor, or certificate program.
- d. The University, a college or school, a department, or a certificate program may permit students who matriculate at the University or who enter a college/school or major under one set of courses or graduation requirements to elect for the requirements that have been instituted since students matriculated at the University or entered a college/school or major, minor, or certificate program.
- e. Undergraduate students who have not been enrolled at the University for a period of five years or more may be subjected to different University, college or school, or department requirements than those which existed at the time of matriculation at the University or entry into a given college/school, major, minor, or certificate program.

Application for Graduation

Currently enrolled students pursuing undergraduate and professional degrees will have graduation applications generated automati-

cally based upon the attainment of a specified number of credit and residence hours as indicated below:

<i>School/College</i>	<i>Credit Hours</i>	<i>Residence Hours</i>
Arts and Sciences	157	57
Agricultural and Environmental Sciences	157	52
Education	162	57
Journalism	157	57
Family and Consumer Sciences	152	60
Social Work	147	57
Business	162	57
Forest Resources	157	57
Environmental Design	177	57
Pharmacy		
B.S. Phr.	179	57
Pharm. D.	57	
Veterinary Medicine	187	
Law	68	

Applications for graduation so generated will be created for three quarters or two semesters hence, to include the term during which the student is currently enrolled. For example, an Arts and Sciences student will have earned 157 hours, 57 hours of which are in residence at the end of a summer term. During the subsequent fall term, an automatic application will be generated for spring quarter graduation. A student earning 157 hours at the end of fall term will have an application created for subsequent summer graduation, winter for the following fall, and spring for the following winter. Students requesting a change in their anticipated graduation date should contact their dean.

Students for whom applications have been created will receive a notification from their deans' offices requesting that they schedule an appointment for degree program review. Students who fail to perform this obligation will forfeit any equity in the adjustment of errors or omissions made in their programs or graduating on schedule.

Independent Study grades and grade changes of last quarter seniors should be received by the registrar one calendar month prior to their graduation date. Students who register for their final quarter's work at another institution must delay their graduation date by one quarter to allow sufficient time for the Admissions Office to receive, evaluate, and record such credits to their academic record.

Commencement

The University holds one formal commencement each June. All students graduating during the academic year are invited to participate. All diplomas are mailed following graduation each quarter. Graduating students are responsible for maintaining a current permanent home address or informing the Registrar's Office of a diploma mailing address.

Prospective summer quarter graduates shall be listed in the June undergraduate commencement program of that calendar year as candidates for graduation without designation of honors status. These students may participate in the commencement ceremony but may not wear regalia associated with honors status. Summer quarter graduates will be listed as graduates in the undergraduate commencement program for the subsequent June graduation if they complete requirements for the degree. Any honors designation for which they qualify will be listed in that commencement program.

The University reserves the right to withhold the degree of any student who has completed all academic requirements when disciplinary charges are pending or when there is a pending disciplinary action equivalent to suspension or expulsion.

STUDENT EDUCATION RECORDS

The University of Georgia guarantees any student, regardless of age, who is or has been in attendance at the University the right of access to inspect and review any and all official records, files, documents, and other materials created during the period of enrollment which relate directly to him or her, subject only to certain specific exceptions. Each student is guaranteed an opportunity to challenge the accuracy of information contained in any file or record to which he or she may have access, including the right to a hearing if so requested.

With limited exceptions, including "directory information," no personally identifiable information from the education records of a student will be disclosed to any third party by any official or employee of the University without the written consent of the student or unless required by law. "Directory Information" includes the student's name, address, telephone listing, date and place of birth, major field of study, participation in officially recognized activities and sports, dates of

attendance, degrees and awards received and the most recent previous educational agency or institution attended by the student, as well as the weight and height of members of athletic teams. A student has the right to prohibit the release of his or her own "directory information" by so advising the Registrar in writing.

Each student also has the right to file a complaint directly with the United States Department of Education whenever the student believes that the rights afforded him or her by the University policy or the Family Educational Rights and Privacy Act have been violated.

Copies of the complete University policy statement on student education records may be obtained at the Registrar's Office.

Name Changes

The name carried on the permanent academic record is the name given on the application for admission and should be the complete legal name. The name will be changed by the Registrar upon request to reflect changes in marital status or legal name changes.

ACADEMIC PROBATION

University-wide regulations provide that students are placed on academic probation at the end of *any* quarter in which their UGA cumulative average is below 2.00. Students may remove themselves from academic probation by achieving a 2.00 UGA cumulative average. Transfer credits are not included in the computation of the UGA cumulative average.

Some schools and colleges within the University maintain academic standards specific to their degree requirements which may exceed University regulations. Students who fall below such standards should immediately contact the appropriate administrator in their respective dean's office for academic counseling and program evaluation.

Admission to Another College or School While on Probation

A student on probation or on first dismissal in one college or school within the University may not transfer to another college or school without the consent of the dean of the college to which admission is sought.

ACADEMIC DISMISSAL

Students are subject to the retention standards listed below based upon the date of their initial enrollment at the University of Georgia.

- I. Students whose first enrollment at the University occurred the summer quarter 1980, or thereafter, will be dismissed after two successive quarters of probation if their UGA cumulative average is below that required for a designated number of total hours attempted as follows:

Total Hours Attempted	Required Minimum UGA Cumulative Average
00-30	1.60
31-59	1.70
60-89	1.80
90-119	1.90
120 and above	2.00

- II. Students whose first enrollment at the University occurred prior to the summer quarter 1980 and who have been enrolled at the University for a minimum of three quarters will be dismissed if their UGA cumulative average is below that required for a designated number of total hours attempted, as follows:

Total Hours Attempted	Required Minimum UGA Cumulative Average
03-44	1.50
45-89	1.60
90-134	1.70
135-179	1.80
180-239	1.90
240 and above	2.00

- III. Students who are required by the institution to enroll in Academic Assistance courses are allowed three attempts to complete a program area (English, math, reading, and counseling). Students who have not met the criteria for completion after three attempts will be placed on first academic dismissal from the University regardless of their total hours attempted and UGA cumulative average.

The following policies are used to determine a quarter of probation, a quarter of enrollment, total hours attempted, and minimum enrollment requirements:

1. A probationary quarter is the term of enrollment subsequent to the term in which the student's UGA cumulative average fell below 2.00.

Grades earned in courses for which the student received transfer credit are not included in the computation of the UGA cumulative average.

2. Students will be considered enrolled for any quarter during which they receive a grade or grades other than W or V.
3. Total Hours Attempted include all hours attempted at the University plus all hours transferred to the University with the following exceptions:
 - a. Hours in courses with grades of I, W, V, NR, and ER are not counted.
 - b. Hours in courses numbered less than 100 are not counted, e.g., Academic Assistance courses, Regents' Remediation courses.
4. Students will not be subject to dismissal if they meet the applicable retention standards listed above at the end of their most recent quarter of enrollment.
5. If students do not meet the applicable retention standards listed above at the end of their most recent quarter of attendance, they may be continued on probation provided they were enrolled for a minimum of 10 quarter hours and earned a quarterly average of 2.30 or higher. The following policies apply in the computation of the 10 hour minimum enrollment requirement:

Hours in courses with grades of W or V are not counted in the 10 hour re-

- a. Courses numbered less than 100 are not counted.
- b. Courses that are graded A-F exclusively are received do not count toward the 10 hours.
- c. Students who receive a grade of W, V, I, S, U, NR, or ER are not counted toward the 10 hours.

First Dismissal

Upon receiving a first academic dismissal, students will be suspended from the University for a minimum of two quarters. At the end of the suspension, students must apply for readmission which may be granted at the discretion of the academic dean.

Second Dismissal

After a second academic dismissal, students will be suspended from the University for a minimum of one calendar year. At the end of the suspension, permission to return to the University can be granted only by appealing to the University Educational Affairs Committee.

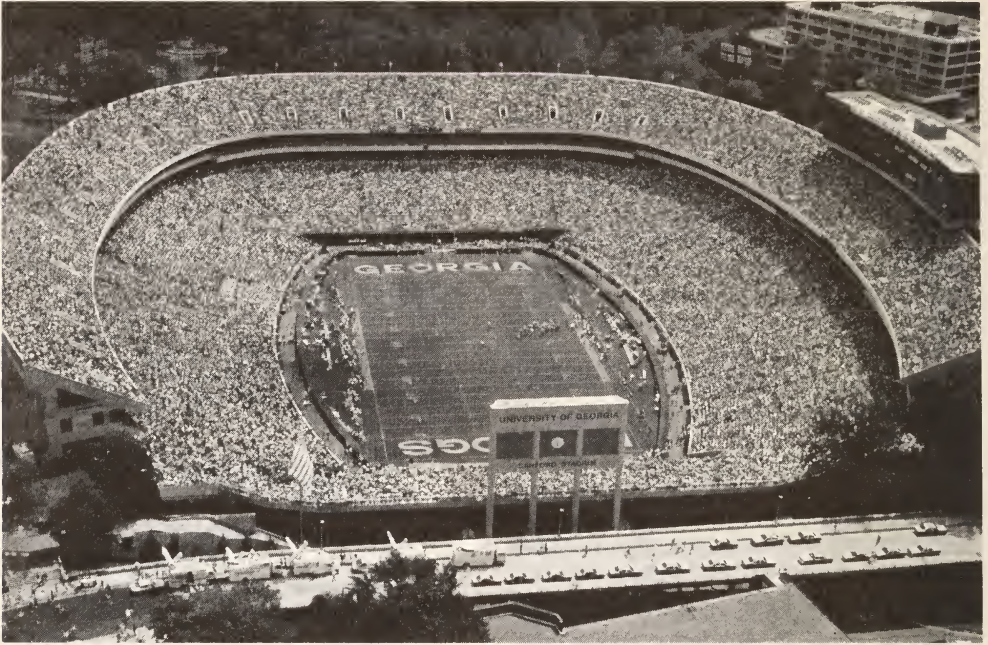
WITHDRAWAL FROM THE UNIVERSITY

No student is permitted to withdraw after registration for a term without notifying the

Office of Student Affairs, who shall notify the proper University officials. Veterans or their dependents receiving allowances under acts of Congress must notify the Veterans Education Benefits Office. Refunds will be based on the date of such notification.

A student against whom disciplinary charges are pending will not be permitted to withdraw from the University with a clear record until such charges shall have been resolved.

In general, a student voluntarily withdrawing may return later if scholastically eligible.



Student Services

Student Affairs

The University of Georgia and the Office of Student Affairs assume that students are responsible for their conduct, their participation in the educational opportunities of the University, and the control of their private lives. Institutional policies, regulations, procedures, programs, and services reflect this attitude and philosophy. The Office of Student Affairs of the University of Georgia provides services and programs that help students adjust to, understand, evaluate, and utilize available academic resources; plan, prepare for, and pursue their life work; learn to know, live with, appreciate, and enjoy others in harmony and with fulfillment and mutual respect; and maintain mental and physical health and strength as they integrate personal, professional, and social values.

Office of the Vice President for Student Affairs

The Office of the Vice President for Student Affairs is a focal point for student concerns in an effort to make the educational experience as meaningful as possible. Staff members work to maintain and improve communications and cooperation among students, faculty, and administrators and offer students general advisement, referrals, and information. Leadership, coordination, and budgetary supervision for the Division of Student Affairs are provided by the Vice President.

The Office of Student Affairs provides many programs and services designed to enhance a student's educational experience at the University of Georgia. Departmental staff members work directly with students and other members of the University community to make these services available. The Vice

President for Student Affairs has administrative responsibility for the following thirteen departments: Admissions, Career Planning and Placement, Counseling and Testing, Health Service, Housing, International Services and Programs, Judicial Programs, Minority Services and Programs, Recreational Sports, Registrar, Student Activities, Student Financial Aid, and Student Information Systems.

The Student Affairs Office collaborates with the College of Education in the training of graduate students and is the liaison between the Campus Ministry Association and the University community. The Office of Disability Services, the Student Affairs Development Program, and the National Student Exchange Program are also administered through this office, (706) 542-3564.

Campus Ministry Association

Students may participate in the religious programs of Athens churches and in student organizations sponsored by all major faiths, denominations, and inter/non-denominational organizations. Many of these maintain student religious centers and are members of the Campus Ministry Association. These include: Baptist Student Union, B'nai B'rith Hillel Foundation (Jewish Student Center), Bulldog Christian Fellowship, Campus Crusade for Christ, Campus View Church of Christ, Catholic Center, Chi Alpha Christian Fellowship, Christian Campus Fellowship, Christian Science Organization (CSO), The Church of Jesus Christ of Latter-Day Saints' Institute of Religion, Episcopal University Center, Lutheran Chapel, Methodist Center (Wesley Foundation), Presbyterian Center, and Worldwide Discipleship Association, Inc. Religious Affairs Liaison: 201 Academic Building, (706) 542-3564.

Office of Disability Services

The purpose of Disability Services is to ensure that students with disabilities have equal access to all programs and activities offered at the University of Georgia. The office seeks to eliminate both attitudinal and architectural barriers that exist on campus and serves as an advocate for students with disabilities, but also encourages students to develop independence and responsibility as they participate in university life.

Disability Services provides services to students who have either a physical or mental impairment which substantially limits one or more major life activities. Examples of these disabilities are: cerebral palsy, hearing impairments, psychological disorders, quadriplegia, acquired brain injuries, cardiac disease, deafness and blindness. Students who have a verifiable disability qualify for services. To receive services, students must provide current documentation of their disability from a qualified health professional.

Services may include the following: academic accommodations, priority preregistration, weekly appointments with a DS counselor, faculty consultation, transportation services, accessible housing, orientation to campus, interpreter services, individual and group counseling, notetaker services, parking services, taped textbooks, academic advising, reader services, education and outreach, and information and referral. We also provide state-of-the-art adaptive computer equipment and other assistive devices specifically designed for people with disabilities. Major equipment includes: Kurzweil scanners, TTY, assistive listening devices, screen enlargement software, Braille printers, Braille dictionary, voice synthesis, and Macintosh and IBM computers equipped with voice-recognition dictation software.

Disability Services is centrally located in Clark Howell Hall, First Floor. Office hours are from 8 to 5. For more information, call (706) 542-8719.

National Student Exchange

The University of Georgia belongs to the National Student Exchange Consortium, which provides exchanges for students to over 100 public colleges and universities throughout the United States and its territories. Students on NSE exchange attend the host campus for one quarter/semester up to

a full academic year, while paying UGA tuition and fees. There are only a few eligibility requirements, and the deadline for applying for the next year is the first of March.

NSE encourages students to experience new life and learning styles, appreciate differing cultural perspectives, learn more about themselves and others, and broaden their educational background through specialized courses or unique programs that may not be available on the home campus.

For more information, contact the Office of Student Affairs, 201 Academic Building, (706) 542-3564.

Undergraduate Admissions and Orientation

The Admissions Office processes and reviews applications for undergraduate freshmen and transfer admission and readmission. This office also coordinates the orientation programs for all new undergraduate students. Admissions counselors are available to discuss with currently enrolled students transferring college credits received at another college or university. For more information, contact the Admissions Office, 212 Terrell Hall, (706) 542-2112.

Career Planning and Placement Center

The Career Planning and Placement Center assists UGA students, including postdoctoral candidates, alumni, faculty, and staff in developing their full career potential through planning and appropriate work experiences. Specifically, the Center assists students seeking part-time and summer employment; assists students and others wanting to learn more about careers and career change; teaches skills necessary in today's competitive job market; provides cooperative education, internships, and other experiential education opportunities; and assists graduating students and alumni who are seeking full-time employment or entrance into graduate or professional school.

Although not an employment agency, the Center helps develop tools required for an effective job search, including interview skills and sound search strategies. In addition,

students may conduct interviews in the Center with representatives of employing organizations. Opportunities for suitable employment are often referred to the attention of students and alumni. Because the Center is a conduit between the campus and the world of work, it can advise candidates about employment trends and current opportunities.

To gain maximum benefit, students, alumni, and others should familiarize themselves with, and use, the wide variety of services offered by the Career Planning and Placement Center. Students should contact the Center very early in their university careers.

Career Planning

To assist students, alumni, and other interested parties, individual appointments may be scheduled for assistance in the career planning process. Many seminars are conducted daily covering general and specific job search topics. In addition to the regularly scheduled seminars, outreach programs are available for presentation for classes, organization meetings, and the like. Special Career Day programs are sponsored throughout the year for students in all majors and all levels—freshmen through alumni.

Career Planning Course (ECP 399)

Students may register for a credit course, ECP 399, Career Development for Life Planning, any quarter they are enrolled. This two to three hour academic credit course provides opportunities for students to identify interests, needs, and abilities; to observe work activities; and to develop job-hunting skills.

Career Information Library

An important part of career planning is having access to information about careers. The materials found in the Center's Career Information Library will provide an excellent base of knowledge for students and alumni seeking this critical information. This information is available during regular business hours, and with special permission, may be checked out for over-night use.

Cooperative Education/Internships

Cooperative Education (Co-op) is a structured educational plan alternating or com-

bining periods of work with periods of academic study. An internship provides a one-time (usually one quarter) opportunity for a student to utilize his or her academic training in a work setting. Both programs offer students an opportunity to gain practical work experience. These experiences also help students clarify career goals as they relate to academic endeavors.

Student Employment

Frequently students, or spouses, need to secure employment while in school or during their stay in Athens. With this in mind, the Center provides Student Employment service. A number of local employers list part-time job opportunities with the Center. In addition, a number of employers list opportunities for seasonal and/or summer employment. This service is available all year round. Students and spouses may use this service by visiting the Center. No appointment is necessary.

Career Placement

This service assists all students who are seeking suitable employment as the completion of their academic program draws nigh. For students to realize the full benefit of this service, they should register and begin the process at least twelve months prior to the month in which they will receive their degree. On-campus interviewing with employers from business, industry, education, government, and non-profit organizations is available, as well as resume referrals, mock interviews, and job vacancy announcements. Students are encouraged to participate in all special efforts by the Center.

Clark Howell Hall, (706) 542-3375

Counseling and Testing Center

The Counseling and Testing Center, located in Clark Howell Hall, provides a number of services to the University community, including career exploration services, group programs and workshops, short-term personal counseling, consultation/outreach services, national and University-wide test administration, and classroom examination scoring and analysis services. The Center's services are primarily provided by a staff of psychologists and professional counselors.

COUNSELING SERVICES

Career Services

Comprehensive career exploration services are available for assistance in choosing a major and with decisions regarding a career direction. The **Career Orientation Seminar (COS)**, which is required to gain access to the variety of service options, lasts approximately one hour. Seminars are offered at different times throughout the quarter. The **Career Information Center** contains resources with information on numerous careers, a number of career reference guides, and two computerized career information systems ("SIGI"-Plus" and "DISCOVER"). Opportunities for interest testing/assessment are available in conjunction with career workshops or individual career counseling.

Group Programs and Workshops

Each quarter the Center offers a variety of group programs and workshops advertised in the campus newspaper and by way of fliers circulated throughout the campus. Therapy and support groups on topics such as family issues, interpersonal effectiveness, relationship issues, and dealing with diversity issues are also offered as a part of the Center's services. These groups meet throughout a quarter and may continue to meet for the academic year. Skill building workshops on such topics as assertiveness training, self-confidence, relationship skills, and stress and anxiety management are also generally offered. These workshops usually have 6-10 participants and meet once a week for 4-6 weeks.

Personal Counseling Services

Individual, couples, and group counseling services are available to help students deal with personal and career concerns. *All* counseling services are provided on a confidential basis. Appointments are provided after the student completes an information packet regarding the services requested. Although every effort is made to schedule appointments quickly, the waiting period for appointments will vary. Initial appointments are generally scheduled within one to two weeks of the original request for services. When an individual's concerns or needs for counseling services are determined to be better

served through community resources, appropriate referrals will be made. Individuals with questions may call or come by the Center between the hours of 8:15 a.m. and 4:45 p.m., Monday through Friday.

Outreach and Consultation Services

The Center staff also offers outreach programs and consultation services for the University community. Students, faculty, and staff who are interested in working with Center staff on a program or consultation for their residents, class, department, fraternity/sorority, club, or agency are encouraged to discuss their needs with the Center's outreach and consultation coordinator.

TESTING SERVICES

University-wide Testing Programs

The Counseling and Testing Center is responsible for the administration of many University-wide testing programs. These include the Regents' Testing Program, U.S. and Georgia Constitution and History tests, Freshmen Orientation testing, proficiency and entrance tests for many UGA schools and colleges, advanced placement tests, and Independent Study exams.

Testing is usually available Monday-Friday between the hours of 8:30 a.m. and 3:00 p.m. on a walk-in basis, but the Testing Center is occasionally closed for group test administrations. (Generally no testing for which a fee is charged begins after 3:00 p.m.) Appointments are *required* for ISAT and Independent Study testing. Test dates and registration instructions for the group administrations of these programs are included in the OASIS (schedule of classes) each quarter. Further information regarding testing may be obtained by contacting the Center's Testing Information line at 542-TEST (8378).

National Testing Programs

The Center also administers numerous national testing programs. Examples include the GRE, GMAT, MAT, CLEP, LSAT, TOEFL, SAT, and GED. Information and registration materials for these and other testing programs are available at the Center. As an additional service, selected computer scanning, scoring, and analysis services are available for faculty, staff, and graduate students.

First Floor, South Wing of Clark Howell Hall, (706) 542-3183; 542-TEST (8378), for Testing Information.

University Health Service

Before their arrival on campus, students *must* complete and return to the University Health Service the health history form and the mandatory immunization record form. Students may not register for classes without documentation for the immunization requirements for new students established by the Board of Regents. Students with special problems or handicaps should have their physicians advise the Health Service of any anticipated needs or medical requests before arrival on campus.

The University Health Service provides primary health care on an outpatient basis to students of the University of Georgia and their spouses. The Health Service is accredited by the Joint Commission on Accreditation of Healthcare Organizations.

During fall, winter, and spring quarters outpatient care is available on a daily basis. Over the summer term these services are available Monday-Saturday. In general, students are seen on an appointment basis to reduce waiting time. Students with urgent health care problems may be seen on a walk-in basis, or they may call ahead for a same-day appointment. Appointments may be made by calling 542-2778 (APPT).

Outpatient clinics include an acute care clinic, medical clinic, mental health clinic, sports medicine clinic, women's clinic, dermatology clinic, allergy-immunization clinic, travel clinic, and dental clinic. Pharmacy, laboratory, and x-ray services are available at any time the outpatient clinics are open. Physical therapy services are also provided on an outpatient basis.

The prepaid student health fee, supplemented by nominal fee-for-service charges, entitles students to a wide range of health care services. A fee-for-service schedule is applicable for student spouses and for students who otherwise may be fee-exempt. The health fee supports an excellent staff of health professionals: physicians, physicians' assistants, nurse practitioners, registered nurses, psychologists, and others. The health fees also support a modern health care facility.

Supplemental student insurance is available to provide accident and sickness coverage. This policy has been designed to meet the needs of students and families at a minimum cost. Students may enroll in this plan at the beginning of the school year or at the beginning of each quarter for the remainder of the year. It is very important that students not covered by parents or other health insurance be enrolled in the supplemental insurance plan.

A health education program is staffed by professionals in the field of health promotion. Educational programs are provided on a variety of health-related topics. Time is available for private consultation as well as for specific program requests. The health education program encourages healthy choices by increasing health awareness and teaching responsibility for personal health and well-being.

Medical information contained in student medical records is strictly confidential and may not be released without expressed written permission from the patient or upon court order.

Gilbert Health Center, (706) 542-1162.

Housing

RESIDENCE HALLS

General Information

Approximately 6,000 students are housed in 17 residence halls, geographically and administratively divided into two residential areas—the Georgian and the Colonial Residence Halls—on the University of Georgia campus. These residential communities are designed for comfortable living, optimal convenience, and a positive contribution to the educational experience of the residents. Each residence hall features a modern, comfortable environment in which all residents can benefit and take pride. Within each residential area, attractive lounges, computer labs, study and meeting areas, TV rooms, coin-operated laundromats, recreational facilities, and mail facilities are provided. Rooms are furnished with single beds, chests of drawers, desks and chairs, and cable TV and telephone service. Bath facilities are centrally located and shared by students on each floor in most halls. The combination of

physical facilities, staff, and student interest contributes to a stimulating environment in University housing.

Through the residence hall living units, students have an opportunity to participate in social, educational, and recreational programs and activities designed to enhance their personal, scholastic, and social development.

Housing Contract and Application

Applications for residence halls are mailed to freshmen with their official notices of acceptance and to new senior division students on request. The application and application fee must be returned to the Housing Office in accordance with the accompanying instructions.

The residence hall contract is for the academic year. All students are urged to be familiar with the terms and conditions of the contract prior to signing. Although binding for the fall, winter, and spring quarters, provisions are made for mid-year terminations required by academic course programs such as student teaching, internships, and co-ops.

To apply for housing accommodations, applicants must submit an application and a non-refundable \$25 application fee to the Department of University Housing.

Students who decide not to enroll at the University after making application for housing should contact the Housing office to cancel their application.

Housing Assignment

Residence hall assignments are made based on the date the completed housing application and application fee are received in the University Housing Office. Students will receive their academic year contracts and notifications of assignments as early as possible before the quarter for which application has been made. A signed residence hall contract, accompanied by a check for the rent for the first quarter, should be forwarded to the University Housing Office by the date specified on the contract.

Every effort is made to honor hall, roommate, and visitation preferences as space permits. Roommate preference will be honored if both applicants request each other in writing and a double room vacancy exists. Students who do not state a preference for a specific person as a roommate will be

assigned a roommate without regard to race, age, color, creed, religion, or national origin.

Opening and Closing of Residence Halls

University residence halls typically open at 10:00 a.m. on the day prior to the first day of registration and close at 10:00 a.m. on the day after the last officially scheduled examination. Non-graduating residents may remain in the halls at the end of the quarter for 12 hours after their last scheduled examination or until 10:00 a.m. on the day after the last officially scheduled examination as per the official University calendar, whichever is earlier. Room accommodations will be provided for graduating seniors until immediately following graduation exercises. During official holidays within a quarter and between quarter breaks, the University reserves the right to close certain halls and require students electing to remain on campus to move temporarily to another hall.

The regular quarterly room rent does not include housing rates for housing between quarter breaks. The University reserves the right to charge extra rent when housing is provided during such times and to make changes in fees and other charges at the beginning of any quarter without previous notice.

Responsibility for Property

Resident students are held responsible for any damages to their rooms and furnishings. Damages will be assessed by the University and the student billed for repairs or replacements. Students should inform University officials of any damages which exist at the time they occupy their rooms.

Although precaution is taken to maintain adequate security, the University cannot assume responsibility for loss or damage to student possessions. Students or their parents are encouraged to carry appropriate insurance to cover such losses.

FAMILY HOUSING

Applications may be obtained from the Family Housing Office. To qualify as and to continue to be a resident, students must be married, or be single students with one or more dependents occupying the apartment at least 20 days per month. Either husband, wife, or single parent must be registered in a

degree program at the University of Georgia, Athens campus, for the quarter in which housing is requested. Graduate students must be enrolled for a minimum of 5 hours; undergraduate students for 12 hours. Post doctoral students and faculty members are not eligible for Family Housing until such time that all full-time student requests are filled (short-term basis only).

Assignments

Assignments are made from a waiting list established according to the date applications are received in the Family Housing Office with a \$25.00 application fee.

Deposits and Refunds

An application fee of \$25.00 is required with the application. An additional \$30.00 is due upon check-in. The total of \$55.00 becomes a security deposit and is refundable at the end of occupancy if the lease agreement and all financial obligations are fulfilled. The University reserves the right to use all or any part of the deposit to defray cost of cleaning the unit, repair of damages, replacement of equipment, or payment of any unpaid Family Housing rents/charges. The \$25.00 application fee is forfeited in those cases if the application is canceled or an apartment assignment is not accepted.

Information

For residence halls and general information:

Department of University Housing
(706) 542-1421
FAX (706) 542-8595
Russell Hall

The University of Georgia
Athens, Georgia 30602-5575

For on-campus family housing:

Student Family Housing Office
(706) 542-1473
FAX (706) 542-8402
710 East Campus Road
The University of Georgia
Athens, Georgia 30602-4622

International Services and Programs

The Office of International Services and Programs counsels and advises international

students and exchange visitors in the areas of immigration matters, financial concerns, housing information, and personal problems. In order to assist the international student in adjusting to the University and local community, the office sends prearrival information to newly accepted students and conducts a comprehensive orientation program.

Special programs and activities designed to promote international understanding and cultural exchange, both on and off campus, are planned and coordinated by the office. Activities include the weekly International Coffee Hour, Community Friend Program, International Exhibit Day, International Talent Night, and the International Speakers Bureau. The office also advises 23 active international student organizations which host various cross-cultural programs for the University and the Athens community and act as a support network for new international students. Valuable information about the University and the community is provided through a bimonthly newsletter and orientation handbook.

The Office of International Services and Programs advises students and faculty on work, study and travel abroad opportunities. The Study Abroad division offers individual and group advising, opportunities to meet with representatives from other universities within the U.S. and from abroad to learn about their study abroad programs. The office provides opportunities for students to talk with other students who have attended study or work abroad programs. A large annual event is the Study Abroad Fair held in the fall. Over 30 representatives of institutions, colleges, universities, and other agencies that offer opportunities abroad attend this fair each year. The office also maintains a library of information on overseas study, travel, and work opportunities; distributes the UGA Study Abroad Credit Approval Form, which serves as an official indicator to the Student Financial Aid Office that the student is attending an overseas study program that has been approved by UGA; and the office issues the International Student Identity Cards, which entitle college students to receive discounts and benefits while traveling abroad.

For more information, contact International Services and Programs, 210 Memorial Hall, (706) 542-1557.

Judicial Programs

The Office of Judicial Programs provides the basis of support for the University's judicial system, strives to inspire trust and confidence in the University's rules and judicial system, and encourages the incorporation of standards of acceptable behavior into a lasting, individualized value system. In accomplishing this task, the office supervises the Student Judiciary and the Defender-Advocate Society. Both organizations help to ensure that violations of University regulations will be adjudicated in a fair and impartial manner.

Furthermore, in order to maximize the positive aspects of defining the limits on acceptable behavior, students charged with violating University conduct regulations are provided individual counseling before and after the adjudication of their case. The staff also provides advice and assistance in the resolution of specific legal concerns and aids in the development of written policies designed to govern the day-to-day functions of both the Division of Student Affairs and the University in areas which involve student life.

Any person may file a complaint if he or she feels a University Conduct Regulation has been violated. A student, faculty member, or staff member who has information regarding what may be a regulation infraction should contact the Office of Judicial Programs. The staff will offer advice and give assistance on properly filing a complaint if this becomes necessary.

300 Academic Building, (706) 542-1131.

Regulations

The University maintains a code of regulations that is printed in the Student Handbook covering individual conduct and student organization activities. A separate handbook outlines traffic and parking regulations. All students are expected to know and observe these rules and regulations. To adjudicate alleged violations of these regulations, a University Judicial System, also described in the Student Handbook, was established in 1969. A booklet outlining the procedures followed in disciplinary hearings is available in the Office of Judicial Programs.

Minority Services and Programs

The mission of the Office of Minority Services and Programs is to enhance the university environment by promoting minority student leadership and academic achievement, to celebrate the contributions and heritage of UGA's diverse student body and to encourage the full participation of African American, American, Hispanic American, Asian American, and Native American students, faculty, and staff in campus life.

The goals of the Office of Minority Services and Programs are leadership development, education, academic success, and diversity.

The office specifically advises the following student organizations:

The Black Affairs Council (B.A.C.) is an organization dedicated to assisting the University in meeting the needs of the African American student population. The organizational mission is twofold: (1) to identify specific needs, problems, or concerns to the University administration and (2) develop and implement strategies to address identified needs.

Pamoja Dancers is an Afrocentric troupe that provides an outlet for non-dance majors to express themselves through dance. Pamoja is open to any student interested in promoting dance from an African American perspective. Concerts are held throughout the school year.

Black Theatrical Ensemble (B.T.E.) is an African centered theatrical group for students interested in gaining experience and exposure to acting, directing, writing, and production of commercial as well as original plays and vignettes from a Black point of view. B.T.E. is open to any student seeking this form of expression.

Georgia's Black Educational Support Team (B.E.S.T.) assists and orients new and transfer students to campus life. The purpose of this program of peer helpers/friends is to help lessen the stress and strain of college life. The peer would also serve as an information source and referral agent for these students.

Asian American Student Association is a group devoted to promoting Asian history and culture on campus and in the community and to assist the academic success of its members.

Hispanic Student Association sponsors numerous activities to recruit and retain Hispanic students at UGA. HSA also contributes to the University's diversity by hosting an annual Hispanic Awareness Week and co-sponsoring activities with other student groups.

Nakami Precision Drill Team performs military drill and dance routines at a variety of campus and community events.

Caribbean Student Association sponsors activities that promote awareness of the history and culture of the Caribbean Islands.

The office also houses the *African American Cultural Center*, which sponsors a diverse offering of activities emphasizing African and African American culture.

To obtain additional information, contact the Office of Minority Services and Programs, 404 Memorial Hall, (706) 542-5773.

Registrar

Three departments exist within the Office of the Registrar for the convenience of students.

The *Registration and Scheduling Office*, Memorial Hall, (706) 542-6911, assists faculty and students in the registration process and publishes the quarterly *Schedule of Classes*. The maintenance of the University course master files is also supervised by this office.

The *Records Services Office*, 105 Academic Building, (706) 542-4040, provides assistance to students with name and address changes, enrollment certifications, schedule adjustments, and transcript requests.

Service Representatives will respond to all in-person and telephone inquiries regarding student-related information as allowed by University, state or federal policies. Requests for transcripts must be in writing as required by the Family Educational Rights and Privacy Act of 1974. A notice of at least 24 hours is required. Standard request forms are available at the Records Services Office, or requests in letter form will be accepted. All transcripts cost \$2.00 each. An additional service charge of \$4.00 will be assessed for same-day service of transcripts. FAX transcripts are \$6.00 each (\$12.00 for overseas), which is in addition to the \$2.00 transcript fee and the \$4.00 same-day ser-

vice charge. (These charges are subject to change without prior notice.)

The *Data Entry and Processing Office*, Academic Building, (706) 542-4055, is responsible for the creation and maintenance of the permanent academic records of enrolled students. In response to information from the deans' offices this office processes class rolls, grade changes, grade reports, and graduation statistics.

Veterans' Certification

Veterans eligible for educational benefits and dependents of deceased or 100% disabled veterans eligible for educational benefits may apply for those benefits through the Veterans Education Benefits Office in the Office of the Registrar, 106 Academic Building, (706) 542-8772. To apply for VA educational benefits, veterans must bring a certified copy of their DD-214, and reservists must supply a copy of their Notification of Basic Eligibility, to the Veterans Education Benefits Office.

At the beginning of each term, enrolled veterans or dependents receiving benefits must submit a Veteran's Enrollment Form to the Veterans Education Benefits Office in order to maintain their eligibility for VA educational benefits. Veterans or dependents receiving compensation who withdraw from the University or who reduce their academic load are required to report such action promptly to the Veterans Education Benefits Office.

Information:

Registrar's Office: 105 Academic Building
(706) 542-4040.

Student Activities

The Department of Student Activities is a programming and service department and offers a wide variety of both to students and student organizations. It maintains files on all registered student organizations and offers programming and financial advisement to club officers. Personnel of the department advise the University Union and its eight program divisions—Committee for Black Cultural Programs, Cinematic Arts, Visual Arts, Ideas and Issues, Contemporary Concerts, Variety, Performing Arts, and Summer. They also advise the student radio station, WUOG-90.5 FM, the *Pandora* year-

book, Homecoming, fraternities and sororities, College Bowl, Georgia Allies, Leadership Development, Special Programs, and Communiversity—a coordinating agency for student community service projects. The department is responsible for the issuing of student identification cards.

Facilities available through the department in Memorial Hall and the Tate Student Center include a game room featuring table tennis and billiards, student lounges, a ballroom, meeting rooms, and club offices. Activities include pop concerts, film programs, lectures, debates, panel discussions, and special presentations.

Services provided by the Department of Student Activities include van rental, quick copy and full service printing, technical equipment rental, and a computer room.
325 Tate Student Center, (706) 542-7774.

Student Organizations

A large number of professional and honorary fraternities and sororities, honor societies, advocacy, international, recreational, and service groups exist on the University campus. A detailed listing of over 370 organizations is available from the Department of Student Activities in the Tate Student Center, (706) 542-1884.

Student Communications

Student communications include the independent student newspaper, *The Red & Black*. The *Pandora* (the yearbook) and WUOG-FM (the student radio station) are administered through the Department of Student Activities Program Office, (706) 542-6396.

Social Fraternities and Sororities

Fraternities and sororities offer a wide variety of programs and opportunities for their members, including scholarship, leadership, community service, athletics, and social activities. For more information, contact the Greek Life Office. 216 Memorial Hall, (706) 542-4612.

Fraternities

Alpha Epsilon Pi
Alpha Gamma Rho
Alpha Phi Alpha
Alpha Tau Omega
Beta Theta Pi
Chi Phi
Chi Psi
Kappa Alpha
Kappa Sigma
Lambda Chi Alpha
Omega Psi Phi
Phi Beta Sigma
Phi Delta Theta
Phi Gamma Delta
Phi Kappa Psi
Phi Kappa Tau
Phi Kappa Theta
Pi Kappa Alpha
Pi Kappa Phi
Sigma Alpha Epsilon
Sigma Chi
Sigma Nu
Sigma Pi
Tau Epsilon Phi
Tau Kappa Epsilon
Theta Chi

Sororities

Alpha Chi Omega
Alpha Delta Pi
Alpha Gamma Delta
Alpha Kappa Alpha
Alpha Omicron Pi
Chi Omega
Delta Delta Delta
Delta Gamma
Delta Phi Epsilon
Delta Sigma Theta
Delta Zeta
Gamma Phi Beta
Kappa Alpha Theta
Kappa Delta
Kappa Kappa Gamma
Phi Mu
Pi Beta Phi
Sigma Delta Tau
Sigma Gamma Rho
Sigma Kappa
Zeta Phi Beta
Zeta Tau Alpha

Recreational Sports

The University encourages interest in sports by affording students opportunities to be participants and spectators in a variety of intramural sports, outdoor recreation experiences, club sports and informal sports.

The intramural program includes flag football, volleyball, basketball, softball, golf, weightlifting, track, swimming, tennis, indoor soccer, and racquetball. The Georgia Outdoor Recreation Program offers backpacking, whitewater rafting, caving, horseback riding, and canoeing experiences, among others.

Club sports are student-run organizations which offer competition and instruction in their particular sport. Currently, students have organized rugby, soccer, Tae Kwon Do, lacrosse, waterski, and ultimate frisbee, among others.

Sports and recreation facilities available for student use include the new Ramsey Student Center For Physical Activities (4 gyms, swimming pools, weight training/conditioning room, racquetball and squash courts, multi-purpose and martial arts rooms, indoor track, climbing alcove), 37 acres of playing fields, 22 outdoor and 4 indoor tennis courts, the track, racquetball courts at the Coliseum,

the University golf course, Legion Pool, and the beach and beach house at Lake Herrick. Ramsey Student Center For Physical Activities, 330 River Road, (706) 542-5060

Student Financial Aid

Student financial aid is the assistance available to help students meet the difference between what they can afford to pay and what it actually costs to attend the University of Georgia. The amount a student and family can afford to contribute will be determined by the University of Georgia's Office of Student Financial Aid (OSFA), employing a uniform need analysis system in accordance with federal guidelines.

The process of establishing the amount of eligibility for financial assistance for a student is based on two major components: Cost of Attendance (reasonable comprehensive costs for an enrollment period), and Total Family Contribution (as determined by a need analysis system).

Aid Application Procedures

In January, the Office of Student Financial Aid begins distributing application packets for the upcoming academic year. By completing the packet, you will be considered for federal, state, and institutional aid, including the Federal Pell Grant, Federal Supplemental Educational Opportunity Grant, Federal Work-Study, HOPE Scholarship, Student Incentive Grant, Federal Direct Loans, and scholarships administered by the Office of Student Financial Aid.

General Eligibility Requirements

In general, to be considered for student financial aid, a student must:

- 1) be a United States citizen or eligible non-citizen of the United States; and,
- 2) have been accepted for admission to an approved degree-seeking program or Teacher Certification program by the Office of Undergraduate Admissions or the Office of Graduate Admissions; or be currently enrolled in an approved degree-seeking program or Teacher Certification Program (students whose degree program status changes should contact OSFA); and,
- 3) be making progress toward the completion of a course of study according to the

- "Satisfactory Academic Progress Policy for Student Financial Aid Recipients"; and,
- 4) not be in default on a Guaranteed Student/Federal Stafford Loan, Federal PLUS Loan, Federal Supplemental Loan, National Direct/Defense Student Loan, Federal Perkins Loan, Health Professions Loan, Income Contingent Loan or Federal Consolidation Loan received at any institution; and
 - 5) not owe a refund on a Federal Pell Grant, Federal Supplemental Educational Opportunity Grant, or Student Incentive Grant received while attending any institution.

How Your Established Financial Need Is Determined

Your Established Financial Need is the difference between the Cost of Attendance at the University of Georgia and the Total Family Contribution. Your Total Family Contribution is derived from a formula that subtracts the allowances (taxes and FICA paid) from the resources (parents' and student's income and assets, including non-taxable income such as Social Security), and then makes adjustments based on the number of people in the family and the number of family members in college. By subtracting the Total Family Contribution from the cost of attending the University of Georgia, need is established. Federal Work-Study, Federal Supplemental Educational Opportunity Grant, Student Incentive Grant, Regents' Scholarship, and Subsidized Federal Direct Loan are awarded based on Established Financial Need.

Verification of Application Information

If your application is selected for verification by the U.S. Department of Education, you will be asked to verify, at a minimum, the following: adjusted gross income, federal income taxes paid, untaxed income, household size, and number of family members in college.

If selected, you will be asked to submit to the Office of Student Financial Aid: a signed copy of your federal tax return and your parents' and/or spouse's return, if applicable. Do not send copies unless they are requested. The verification process must be completed before you will be considered for aid.

Student Financial Aid Policy

- A. Each year OSFA receives requests for more funds than are available. Although Federal Pell Grant, Federal Direct Loan, and Federal Direct PLUS Loan funds are available to eligible students year-round, other funds awarded by OSFA go to eligible students on a first-come, first-serve basis.
- B. Full-time for undergraduate students is 12 credit hours per quarter; half-time is 6 credit hours per quarter. Full-time for graduate students is 10 credit hours per quarter; half-time is 5 credit hours per quarter. In the summer quarter, full-time for undergraduate students is 10 credit hours per quarter; for graduate students, full-time is 8 credit hours per quarter.
- C. Irregular students, non-degree students, transient students, unclassified post-graduate, provisional, and post-baccalaureate students are not eligible for federal or state student financial aid. However, students enrolled in a Teacher Certification program are eligible to apply for a Federal Direct Loan or Federal Direct PLUS Loan. Students must request a "Teacher Certification Form" from OSFA. Teacher certification students must be enrolled at least 6 hours a quarter.
- D. Aid is awarded on an academic year basis. Dates to apply for summer aid will be announced by OSFA during the academic year. Students who plan to first apply for aid starting summer quarter must mail the FAFSA in time for it to reach the Federal Processor by the May deadline. No aid can be awarded if this deadline is missed.
- E. Only the first 45 attempted hours of non-degree credit coursework (including mandatory Academic Assistance) will be allowed in determining aid eligibility. Neither voluntary Academic Assistance nor audits will be considered in determining aid eligibility.
- F. All applicants should complete the FAFSA or Renewal Application. DO NOT submit the Student Aid Report (SAR) you receive to OSFA. The Federal Processor will electronically submit your application information to OSFA. This information will be used to determine your eligibility for aid which includes the Federal Pell Grant, Federal Work-Study, Federal Supplemental Educational Opportunity Grant, Federal Direct Loans, Federal Direct PLUS Loan, Student Incentive Grant, HOPE Scholarship, etc.
- G. If you receive a Federal Direct Loan or your parent receives a Federal Direct PLUS Loan, you must maintain at least half-time enrollment *at all times*. Dropping below half-time enrollment at any time will result in subsequent loan disbursements being cancelled. If you re-enroll at least half-time, you must contact OSFA to re-apply for the loan(s).
- H. If you enroll in In-Service Education courses, you *may* be eligible to receive aid if you are enrolled in a degree-seeking program. You must obtain a certification letter (available in OSFA) for each course.
- I. Any aid you receive or expect to receive from an outside source must be reported to OSFA, regardless of when you receive notification of the award. This includes scholarships, grants, loans, and assistantships or fee waivers. The receipt of such aid may result in a reduction, cancellation, and/or repayment of your need-based award(s).
- J. If you pre-register for classes, you should note the payment deadline on your fee invoice. Your schedule will be cancelled if you do not pay fees by the payment deadline on your fee invoice, or contact the Student Loans, Grants, and Scholarships Department in Business Services if you expected a deferment but do not have one. Pre-registered students who have been awarded student financial aid by the fee deferment date each quarter should have a deferment until the first day of class. Students who do not pre-register should contact the Student Loans, Grants, and Scholarships Department in Business Services.
- K. OSFA uses your *permanent* home address on file in the Registrar's Office. You may update this address during registration, or by completing a change of address form in the Registrar's Office in the Academic Building.
- L. OSFA reserves the right, on behalf of the University, to review and cancel awards at any time if you fail to meet the requirements of the Satisfactory Academic Progress Policy for Student Financial Aid Recipients or because of changes in your financial or academic status, academic program, resident status, enrollment status, etc. All student financial aid awards

are contingent upon the availability of funds.

M. Applications for each upcoming academic year are available in January. For priority processing, all required documents must be on file in OSFA by 1 March. Applications not on file by that date will be processed as time and funds permit. OSFA will begin processing completed applications for the academic year as soon as federal regulations are issued. Processing aid applications can take eight weeks or longer during peak processing time. Applications that are not complete by the following deadlines may not be processed by the beginning of that quarter: fall, 1 August; winter, 1 November; spring, 1 February; summer, 1 May. **If you have not completed the application process by the dates given, you should be prepared to pay all educational costs.** You should not expect to have student financial aid checks available if you have not returned your signed Award Letter to OSFA **AND** have not returned a correctly completed Federal Direct Loan Promissory Note to the University by the dates given above.

N. The U.S. Department of Education defines "professional student" as a student enrolled in a course of study beyond a Bachelor's degree; therefore, Bachelor's degree students enrolled in the Bachelor of Pharmacy, Forest Resources, Social Work, and Journalism are not professional students for the purpose of applying for student financial aid. However, PharmD and DVM students are considered professional students.

O. Students applying for Title IV aid as eligible noncitizens and whose citizenship status is not confirmed on their SAR, must provide OSFA with appropriate documentation (Alien Registration Receipt Card—Form I-151 or Form I-551, a passport, or I-94) showing that they are permanent residents or other eligible noncitizens. OSFA will then initiate a secondary confirmation with the Immigration and Naturalization Service (INS). This confirmation must be received before the student will be awarded any aid.

P. If your total gift aid (grants and scholarships) exceeds the total of your tuition, fees, books and supplies, you should consult your federal and state income tax

instructions when completing your income tax returns.

Q. OSFA will ask students receiving Veterans Benefits to provide documentation of their VA benefits before aid can be disbursed. These benefits are included in your overall aid package.

R. Your official UGA enrollment status is determined each term at the end of Phase III Registration (Drop/Add). If you enroll full-time and receive aid, and then drop to less than full-time during Phase III Registration, you may be asked to repay aid received.

S. You should use your full legal name when applying for aid. Do not use nicknames, abbreviations, or middle names as first names. The U.S. Department of Education requires that the name you use when applying for aid matches your name on Social Security Administration records. You will be asked to provide additional information if that is not the case.

T. Students who are studying abroad and who are regularly enrolled in a degree seeking program are eligible for aid. Aid will be awarded at the same level as provided for study on campus.

U. Students should read the "Fees and Financial Aid" section of each quarter's *Schedule of Classes* for details on how student financial aid is disbursed.

V. If the quarter(s) for which you are requesting aid have ended **AND** you are no longer enrolled, you will usually not be eligible for aid. If, however, you are involved in verification when the quarter(s) end, you **MAY** be eligible to receive aid when verification is complete. Contact OSFA if you have questions.

W. When completing the FAFSA, **ALL** items must be answered. In particular, failure to indicate housing status (#90), enrollment status (#25-28), and anticipated graduation date (#31) may delay your Award Letter.

Types of Aid

Grants, loans, Federal Work-Study, and a limited number of scholarships are available through this office to help defray educational expenses at the University of Georgia. Grants do not have to be repaid. Most loans must be repaid in cash. Federal Work-Study awards are earned during the period of enrollment. You must be enrolled at least half-time to

receive a Federal Direct Loan or Federal Direct PLUS Loan. You must be enrolled full-time to receive the Student Incentive Grant and Scholarship. Federal Pell Grants are available for less than full-time students depending on need. HOPE Scholarships are available for one or more hours of enrollment. All student aid will be awarded based on anticipated full-time enrollment unless otherwise noted on your Award Letter.

A. GRANTS/SCHOLARSHIPS

1. **Federal Pell Grant:** is designated for undergraduate students working toward a first bachelor's degree. The amount of your grant is determined by the Cost of Attendance, the Expected Family Contribution provided by the U.S. Department of Education, and your enrollment status. If you are enrolled full-time (12 or more credit hours) you will receive your full eligibility. If you are enrolled 9 to 11 credit hours, you will receive three-fourths of your eligibility. If you are enrolled 6 to 8 credit hours, you will receive one-half of your eligibility. If you are enrolled less than 6 credit hours, you will receive one-fourth of your eligibility.
2. **Federal Supplemental Educational Opportunity Grant (SEOG):** is designated for undergraduate students enrolled at least half-time. Eligibility is based on Established Financial Need, and funding is limited to students with full Federal Pell Grant eligibility.
3. **Student Incentive Grant (SIG):** is designated for undergraduate Georgia residents attending full-time. The minimum grant is \$1200 per academic year. Maximum eligibility is 12 quarters.
4. **Law Enforcement Personnel Dependents Grant (LEPD):** is designated for eligible Georgia residents who are dependent children of Georgia Law enforcement officers, prison guards, or firemen who were permanently disabled or killed in the line of duty. The amount of the grant is \$2000 per academic year. Eligible students should contact OSFA.
5. **Georgia Public Safety Memorial Grant:** is designated for the son or daughter of any Georgia public safety officer who is killed or permanently disabled in the line of duty. This new program, which is funded by the Geor-

gia Lottery for Education, covers the Cost of Attendance at a Georgia public post-secondary institution, minus other aid received, including the Law Enforcement Personnel Dependents Grant.

6. **HOPE Scholarship (Helping Outstanding Students Educationally):** is funded by Governor Zell Miller's Georgia Lottery for Education and is available to eligible Georgia high school graduates. Others are eligible to receive the HOPE Scholarship only as a renewal of their HOPE award. Full-time enrollment is not a requirement. The HOPE Scholarship will cover tuition, fees, and a \$100 per quarter book allowance. Grade point eligibility for entering freshmen is based on a high school GPA of 3.0 or better as determined by the high school and reported to the Georgia Student Finance Commission (GSFC). University of Georgia students currently receiving HOPE may renew the HOPE Scholarship based on UGA's certification of their grade point eligibility on coursework completed at UGA and completion of their financial aid application. Transfer students who received HOPE elsewhere will be evaluated on the basis of their transfer GPA. Students are eligible for up to 192 hours of attempted coursework, unless they are in an approved five year degree program (Landscape Architecture and Pharmacy). The HOPE Scholarship is reduced by the amount of Federal Pell Grant or other federal grants the student receives. Students receiving a full Pell Grant and SEOG are only eligible for the book allowance. For further details of the HOPE Scholarship Program, contact the GSFC at 1-800-546-HOPE.

B. LOAN PROGRAMS

The University of Georgia will be participating in the Federal Direct Loan Program. The lender for the students' loans and the lender for the Parents' loans will be the federal government. The U.S. Department of Education's William D. Ford Federal Direct Loan Program is a new way to borrow money to pay for school. The federal government will lend you the money while you attend UGA. The U.S.

Department of Education's Direct Loan Repayment Center will handle repayment of your loan(s) and you will be able to choose a repayment plan that fits your needs. If you have previously borrowed, you will now borrow from the federal government and when you leave school, you will be able to consolidate your previous loans directly with the U.S. Department of Education's Direct Loan Repayment Center and make one payment each month. Once you leave school, the point of contact for information about your loan(s) will be 1-800-4-FED-AID.

1. Federal Direct Loan:

- a. The subsidized Federal Direct Loan is need-based and the government pays the interest on this loan while the student is in school and during the six-month grace period. An unsubsidized Federal Direct Loan is non need-based and was created for borrowers who do not qualify for federal interest subsidies and thus the student either pays the interest while in school and during the six-month grace period or it is added to the balance of the loan. These are low-interest loans made to you by the University of Georgia as your lender.
- b. Having your eligibility for a Federal Direct Loan determined does not commit you to accepting a loan.
- c. Annual interest rates are variable for new borrowers. Contact your lender for specific details.
- d. Loan eligibility is based on Established Financial Need (subsidized) or replaces Expected Family Contribution (unsubsidized), and state/lender restrictions. Federal Direct Loan maximums are \$2625 per year in the freshman year, \$3500 per year in the sophomore year, \$5500 per year in the junior and senior years, with a \$23,000 cumulative total of subsidized and unsubsidized loans for all undergraduate study. Graduate students may borrow \$8500 per year. The cumulative total for undergraduate and graduate subsidized and unsubsidized Federal Direct Loans is \$138,500. The University of Georgia defines "per year" as a twelve month period.

- e. The borrower must pay an origination fee equal to four percent of the amount borrowed. This amount is deducted proportionately from each loan disbursement by the lender and is used to help reduce the cost of making these low-interest loans.
 - f. When the loan is approved, checks will be available to students at the beginning of each term. If your loan is approved for only one term (quarter or semester), you will receive half of your loan at the beginning of the term and the remainder at the midpoint of the term. If you have subsidized and unsubsidized loans, you will receive a single check for the loan each quarter.
 - g. Repayment for most loans begins six months after you leave school. You will sign a promissory note prior to receiving any subsidized and unsubsidized Federal Direct Loan check. This will specify your interest rate and the number of months (grace period) before your repayment begins. The amount of your monthly payment will be determined by the federal government and is based upon your cumulative loan amount and federal regulations.
 - h. First-time borrowers will be contacted by the Student Loans, Grants, and Scholarships Department in Business Services to satisfy entrance interview requirements.
 - i. If you are requesting a Federal Direct Loan (subsidized and/or unsubsidized), DO NOT complete a loan application. By completing a UGA Student Financial Aid Application Packet, you will provide enough information to generate a preprinted promissory note.
2. **Regents' Scholarship:** Designated for Georgia residents who are enrolled full-time and ranked academically in the upper 25% of their class and who have Established Financial Need. Maximum amount is \$750 per academic year. Repayment may be satisfied by working full-time in the State of Georgia one year for each \$1,000 received, or by making cash repayment with three percent interest per annum.

3. **Service Cancellable Loans:** Service-Cancellable Stafford Loans are made by the Georgia Student Finance Authority to Georgia residents who are preparing for professions in which there is a critical shortage in Georgia. You may cancel principal and interest payments by practicing in an approved Georgia location twelve months for each academic year of assistance. The approved critical fields at the University of Georgia are: Pharmacy, Veterinary Medicine, Gerontology, School Psychology, Special Education, Dietetics, Math Education, Science Education, Foreign Language Education, Middle Grades with a concentration in Math and/or Science.

4. **Federal Direct (PLUS) Loan:**

- a. These are educational loans for parents of dependent students. There is no income restriction.
- b. The interest rate is variable.
- c. Loan eligibility is based on the Cost of Attendance and other aid you may receive. Each year parents may borrow up to the Cost of Attendance minus any other aid received.
- d. PLUS repayment begins sixty days after the funds are disbursed. Under specific circumstances, a parent borrower may defer interest and/or principal payments of the loan while the student is attending school.
- e. Checks are made payable to the borrower unless the borrower authorizes disbursement to the student, and then the check will be made payable to the student. The Student Loans, Grants, and Scholarships Department in Business Services verifies the student's enrollment, endorses the check, and mails it to the borrower.

C. **FEDERAL WORK-STUDY**

1. **Federal Work-Study (FWS):** Eligibility for Federal Work-Study is based on Established Financial Need. Amounts range from \$500 to \$1000 per quarter. Students are assigned jobs located on campus and work schedules are made around the student's class schedule.

NOTE: Students who are not Georgia residents are reminded that there is an agency in most states offering grant assistance. If

you are interested in applying for state grant assistance but do not know how to contact the agency that serves your home state, you may telephone the Office of Student Financial Aid (706/542-6147) at the University of Georgia.

Satisfactory Academic Progress Policy for Student Financial Aid Recipients

The U.S. Department of Education mandates institutions of higher education to establish minimum standards of satisfactory academic progress for students receiving Federal aid. These same standards are maintained by the University of Georgia for students receiving institutional aid. The policy is included in the Student Financial Aid Application Packet.

Student Information Systems

Student Information Systems provides computer-based information system services to Student Affairs departments. This service involves: maintenance of existing computer-based systems; assisting and/or training user departments in obtaining various ad hoc or short-term reports; development of new "state of the art" user-oriented application systems for both the mainframe computer and various microcomputers; micro-mainframe interface assistance; data base planning; coordination and consultation.

158 Boyd Graduate Studies Research Center, (706) 542-6135.

Other Student Services and Activities

University Bookstore

The University Bookstore offers a bright, contemporary atmosphere featuring spacious aisles, uncrowded shelves and expedient check-out lanes. Designed to serve the students, faculty and staff of the University, the store maintains a complete stock of all course-related supplies and textbooks, new and used, as well as a large inventory of general reading books. Microcomputers from several prominent manufacturers are available to qualified buyers at special educa-

tional prices. Visitors to the store will also find a wide selection of University of Georgia fashion apparel and gift items, snacks, sundries and campus life accessories. Located next to the Tate Student Center and across from Sanford Stadium, the Bookstore is open from 8:00 a.m. until 5:00 p.m., Monday through Friday with extended hours for special occasions.

Food Service

The University operates four food service facilities for general student use: BOLTON HALL, OGLETHORPE HALL, SNELLING HALL, and the BULLDOG SNACK BAR in the Tate Student Center. The dining halls are located at easy-to-reach locations either by walking or by UGA bus. Two economical meal plans as well as meals on a cash basis are available at these facilities.

The 1995-96 rates for the two meal plan contracts are as follows:

	<i>Academic Year Contract</i>	<i>Payable in Quarterly Amounts</i>	<i>Daily Equivalent</i>
5 days unlimited meals (Monday-Friday)	\$1,596	\$532	\$9.61
7 days unlimited meals (Monday-Sunday lunch)*	\$1,776	\$592	\$7.66

*No evening meal on Sunday

The University Food Services Department offers a variety of special events during the academic year, including a Hawaiian Luau, Steak Night, International Celebration, special holiday dinners and ice cream srees. Meals are served in a pleasant atmosphere and with an unlimited seconds system of service. Food service in the Tate Student Center Bulldog Room, located on North campus, is operated on a cash basis only.

Campus Transit System

The Campus Transit System, funded by quarterly student transportation fees, provides bus service throughout the campus for students and employees. Frequent service connecting academic areas, parking, and residential areas is provided on six routes Monday through Friday between the hours of 7:00 a.m. and 6:00 p.m. In addition, three routes operate during the evening hours until 12:30 a.m. A map showing the routes, timetables, and bus stops is available on the

buses and at many locations throughout campus. Specially equipped vans provide transportation services for mobility-impaired students throughout the service area of the Campus Transit System. Through an agreement with the Athens-Clarke County Government, students with valid UGA ID also have access to the services provided by the Athens Transit System without payment of fares.

Parking Services Department

All motor vehicles parked on campus between 7:00 a.m. and 5:00 p.m., Monday through Friday are required to be registered with Parking Services and must display a windshield permit authorizing use of specific parking areas. Parking permits for students and employees are issued based on various eligibility requirements and user options. Parking fees are based on the type of permit issued. For housing students, in addition to the option of surface lot parking, a 900-car parking deck located near the high-rise dorm area offers the option of reserved parking.

A parking deck next to the Georgia Center for Continuing Education and pay-by-the-hour lots at the University Bookstore and Tate Student Center provide parking for visitors and University personnel.

Further information concerning parking locations, regulations, and permit types/fees can be obtained by visiting Parking Services or by calling 542-PARK (7275). The Parking Services Building is located in the commuter student parking lot near the Ramsey Student Center on River Road.

Student Counseling and Academic Advising

The University attempts to maintain a close personal association between student and faculty. Each instructor and academic dean has the responsibility of guiding students in problems of an academic nature. Other counseling is provided by the Counseling and Testing Center, the University Health Service's mental health clinic, and other Student Affairs personnel. The Psychology Clinic and the Speech and Hearing Clinic offer specialized services coordinated with the Office of Student Affairs. The Learning Disabilities Center, a part of the Department of Special Education in the College of Education, provides services to those who are multi-handicapped or have a learning disability.

Tutorial Services

Tutorial Services offers free tutoring to students in introductory math, sciences, English, and languages. All tutoring is done on an appointment basis and is primarily one-to-two, with some small group (three students) sessions. Tutors are students who have been selected on the basis of outstanding academic achievement, faculty recommendations, and ability to relate to other students.

Learning Disabilities Center

The University of Georgia Learning Disabilities Center houses two distinct components, the Learning Disorders Diagnostic Clinic, as well as the Learning Disabilities Service Program. The Learning Disabilities Center is nationally recognized for generating research pertaining to adults with learning disabilities, and its assistance program for college students with learning disabilities.

The Learning Disorders Clinic is funded by the Board of Regents of the University System of Georgia to provide assessment resources to students within the University System with learning problems due to a disability. Comprehensive standardized assessments are available to qualified students to provide recommendations regarding how to best maximize students' functioning in college and information related to requests for special accommodations and/or modifications. There is a fee attached to the diagnostic evaluation.

The Service Program of the Learning Disabilities Center was established to serve both students and faculty by promoting an understanding of learning disabilities, explaining students' needs and helping students arrange classroom modifications that will help them learn to their potential. To be eligible for services, students must be evaluated at the Learning Disorders Center and/or meet criteria established by the Board of Regents. Students should contact the Learning Disabilities Center at (706) 542-4589 for information on procedures necessary for becoming eligible for receiving learning disabilities services at the University of Georgia. Services available include one-on-one tutoring by learning disabilities specialists, early registration, consultation with faculty, textbooks on tape, notetakers, computer lab,

learning disabilities support group, and personal and academic counseling. Learning disabilities specialists address individual strengths and weaknesses in special courses and help with learning strategies. There is no cost attached to services.

Psychology Clinic

The Psychology Clinic, located in the Psychology Building, offers a wide range of psychological services to students, faculty, staff, and to the general community. These services include assessment of various psychological problems and treatment to alleviate these problems. Problems dealt with include depression, anxiety, intense fears, headaches, hypertension, chronic pain, eating disorders, interpersonal difficulties, marital problems and children's problems, among others. Appointments and/or information are available by calling the Psychology Clinic at 542-1173. Fees for service are made affordable through a sliding fee scale based on income.

Student Development Laboratory

The Student Development Laboratory in the College of Education offers a variety of personal developmental groups, workshops, and personal consultation opportunities for students, faculty, and staff. Staffed by graduate students in the Department of Counseling and Human Development Services, the activities are designed to encourage personal growth, focusing on such topics as "Study Skills," "Values Clarification" and "Assertiveness Training." Individual and group counseling opportunities are also available.

Art, Drama, and Music Activities

Art activities include exhibitions by students and faculty of the School of Art as well as occasional traveling exhibitions, slide lectures and informal critiques by visiting artists and various student field trips. Spring, summer, and fall sessions in Cortona, Italy are jointly operated by the School of Art and the School of Environmental Design.

All students are eligible to participate in the quarterly major productions of the University Theatre in the drama department. Outstanding professional companies also appear on the campus.

The School of Music presents weekly programs featuring faculty members, advanced students, and guest artists. Other music ac-

tivities include the Men's Glee Club, Women's Glee Club, University Chorus, Symphony Orchestra, and the University Band.



Special Services and Facilities

Special services and facilities of the University of Georgia include community education services, various institutes, the Georgia Center for Continuing Education, the University Press, Athletic Association, and Alumni Society. Some of these are described below.

The Georgia Center for Continuing Education

Associate Vice President for Services and Director: Edward G. Simpson, Jr., (706) 542-3451

The Georgia Center for Continuing Education seeks to serve the learning needs of adults and organizations and to provide leadership in developing the theory and practice of continuing education. One of the major functions of the University is to offer credit and non-credit continuing education programs on campus and throughout the state. The Center draws on the full resources of the University, working closely with the faculty and participating groups to evaluate its various programs and design new services such as those provided for individualized learning.

The Georgia Center building on campus provides, in addition to administrative offices for the program, lodging for approximately 300 adults, other conference facilities for up to 1800, three computer labs, as well as studios and production areas for video and WUGA-FM public radio. The Center also provides a variety of other media support services for continuing education and the service function of the University of Georgia, including satellite uplink and downlink communications.

DIVISION OF ACADEMIC CREDIT

Evening Classes

See page 40 in the Academic Information section for information about Evening Classes.

University System of Georgia Independent Study

See page 41 in the Academic Information section for information about University System of Georgia Independent Study.

Gwinnett University System Center

See page 42 in the Academic Information section for information about Gwinnett University System Center.

American Language Program

The University of Georgia's American Language Program, a department of the Division of Academic Credit of the Georgia Center for Continuing Education, teaches English as a second language to speakers of other languages seeking to improve their communicative skills. In courses offered by the American Language Program, students study English for cultural adaptation; for preparation for enrollment in universities or colleges whose primary language of instruction is English; or for pronunciation, fluency, and accent reduction for prospective international graduate teaching and laboratory assistants at the University of Georgia. Courses are designed on an intensive five-hour per day schedule to help students learn English in the shortest possible time.

Admission to the American Language Program is reserved for students who have completed secondary school studies and who can devote a majority of their time to learning English. To apply to the program, applicants submit a completed application form and additional supporting documentation. Admitted students receive a Form I-20 for acquiring an F-1 Student Visa to come to the United States. The University System of Georgia requires that all students, prior to registration, submit to the American Language Program office a completed Measles, Mumps and Rubella Certificate of Immunization. Admis-

sion to the American Language Program does not constitute admission to academic programs of the University of Georgia.

American Language Program faculty also teach two graduate academic credit courses specifically designed to prepare international graduate students to become University graduate teaching or laboratory assistants. Each course carries up to five hours of academic credit.

More information regarding the American Language Program may be obtained by calling (706) 542-4095 or by visiting the offices at 1260 South Lumpkin Street.

DIVISION OF INSTRUCTIONAL SERVICES

The Instructional Services Division plans and implements group and individualized instructional programs of the Georgia Center. Working with faculty from the University of Georgia, other institutions of higher education, and practitioners from diversified backgrounds, the Instructional Services Division staff designs and conducts needs assessments, designs educational programs in response to identified needs, develops marketing strategies, conducts continuing education programs, and conducts evaluations of the programs. For more information, call (706) 542-1275.

Community Learning Resources

Through three computer training laboratories, non-credit short courses, and independent study courses for professional certification, a wide variety of topics are available to the adult learner.

Computer training on Macintosh and DOS-based applications is available through workshops and seminars. Additionally, every quarter, over 80 different courses, ranging from Conversational Italian to Preparing for the GRE, are taught in the evening. Inquiries about any of these programs can be made to Community Learning Resources, Suite 191, Georgia Center, (706) 542-1756.

Governmental Training

Governmental Training provides continuing education opportunities for administrative, professional, technical, and elected officials and for citizens who serve on boards, commissions and committees in local and state government jurisdictions in Georgia and other

states. Major programming areas include financial management, management and leadership development, property tax assessment administration, construction codes enforcement, and elections administration. Inquiries should be made to Governmental Training, Suite 188, Georgia Center, (706) 542-1328.

Program and Conference Development

The Department for Program and Conference Development is involved extensively in the development, delivery, and assessment of non-credit instructional programming locally, statewide, regionally, and nationally within a broad range of academic disciplines and occupational competencies including Business Management and HRD, Communications, Education, Family and Consumer Sciences, Agriculture, Humanities and Social Sciences, and professional education in Law, Forestry, Pharmacy, and Veterinary Medicine. Instruction is delivered via workshops, conferences, seminars, video teleconferences, and certified job-related curricula.

Inquiries should be made to Suite 270, Georgia Center, (706) 542-2335.

DIVISION OF COMMUNICATION SERVICES

The Communication Services Division has responsibility for the Marketing, Educational Telecommunications (including WUGA-FM Radio) and Graphics/Printing functions for the Georgia Center. The Division develops, produces, and distributes educational media for adult learners at the Georgia Center for Continuing Education, around the state, and throughout the nation.

Affiliated with the Georgia Public Telecommunications Commission, the Division provides cultural and educational television productions for Georgia Public Television. Communication Services also operates WUGA-FM, the University of Georgia's public radio station, an affiliate of National Public Radio and Peach State Radio.

Through membership in national organizations, the Center has access to high quality teleconferences from more than 200 institutions of higher education. The Center is also a member of the Georgia Statewide Academic and Medical System—a two-way video instructional system that connects the Center with some 250 other sites in the state

for the purpose of information and instruction. With state-of-the-art satellite uplink capability, the Center can provide educational services to some 2,000 downlink sites in the state of Georgia and to the entire nation.

The Division delivers and markets a complex, comprehensive media program including not only television and radio, but print design and production as well as self-directed, interactive learning packages.

For information, contact the Division of Communication Services at (706) 542-3554.

DIVISION OF HOTEL AND OPERATING SERVICES

The Georgia Center's Division of Hotel and Operating Services provides lodging and food service primarily to adult students attending conferences. However, these services are also available to university guests, parents of students, and alumni. The Center's restaurants, "The Savannah Room" and "The Commons Cafe," are pleased to serve the public as may be on campus. Cultural and entertainment events in the performing arts are open to the public as are gourmet food events presented in connection with these programs.

For information, contact the Georgia Center at (706) 542-2600.

Centers and Institutes

Center for Advanced Ultrastructural Research

Director: Dr. Mark A. Farmer, 542-4080

The Center for Advanced Ultrastructural Research serves the University System by providing a repository of facilities and expertise to assist in pursuing research and instructional needs employing light, fluorescence, and electron microscopy. Facilities include two TEMs, one SEM, two confocal microscopes, X-ray microanalysis, and image processing and analysis workstations. Formal courses in electron microscopy are offered through the Division of Biological Sciences.

Center for Applied Isotope Studies

Director: Dr. John E. Noakes, 542-1395

The Center for Applied Isotope Studies is a multidisciplinary group dedicated to research and development in nuclear analytical methods and system technology. The primary

activities of the center are to work cooperatively with the academic, scientific, and industrial communities through programs of applied and basic research. Emphasis is placed on applied research, assisted by a unique array of nuclear analytical tools, directed toward the resolution of critical contemporary problems. One of the highest priorities of the CAIS is to direct its programs of research to address environmental problems and issues, focusing on the development of new analytical methods and systems technologies for scientific and industry application. A state-of-the-art service laboratory is maintained by the CAIS for radiocarbon dating, stable isotope measurements, trace element determinations, and low-level detection of radionuclides for environmental monitoring and assessment. The CAIS also serves as a reference center, available to UGA students and faculty, for research design in nuclear methods. The Center is located at the University's Research Park in the Center for Applied Isotope Studies Building.

Center for Archaeological Sciences

Director: Dr. Norman Herz, 542-2415

The Center for Archaeological Sciences promotes and coordinates research between the humanities—archaeology, anthropology, and art history—and the sciences—geology, geochemistry, chemistry, and biology. The center coordinates the research of University scholars in fields relating to archaeology and art history, facilitates collaboration with experts outside the University, serves as a resource center of laboratory equipment and technical support for archaeologists and art historians worldwide, and coordinates interdisciplinary undergraduate and graduate degree programs in the archaeological sciences.

Center for Asian Studies

Co-Directors: Dr. Thomas Ganschow, 542-2053; Dr. Shanta Ratnayaka, 542-5356

The Center for Asian Studies promotes and guides academic programs and exchanges on Asia for students and faculty. The Asian programs focus on language and area studies and involve faculty and course offerings from various units of the University. Specific activities include the following: (1) expanding and improving instructional programs in Asian languages (presently Chinese, Japa-

nese, and Korean) and area studies (presently East and North Asia) and promoting and facilitating more exchange and involvement of students and faculty with Asia through exchange agreements (presently China and Japan); (2) developing and arranging speakers' and visitors' programs of distinguished Asianists to address and exchange ideas with students, faculty, and community on Asian topics; (3) promoting and facilitating collaborative research activities and programs with Asian scholars and Asian research and educational institutions; (4) developing library, audio-visual, and related instructional and research materials and facilities; and (5) planning and applying for external funding for the expansion of Asian Studies at UGA.

Center for Audit Research

Director: Dr. Russell M. Barefield, 542-1616
The Center for Audit Research within the School of Accounting seeks to stimulate a continuing commitment to audit research that has practical implications. In the broad context of governmental, internal, and financial statement auditing, the center encourages practitioners and academicians jointly to explore implementation issues of audit research, and it disseminates research ideas and findings.

Center for Biological Resource Recovery

Director: Lars G. Ljungdahl, 542-7640
The Center for Biological Resource Recovery is comprised of investigators from the departments of Biochemistry, Botany, and Microbiology at the University and from the Richard B. Russell Agricultural Research Center. The Center is committed to extending the biotechnology required for the utilization of microorganisms as inexpensive and energy-efficient catalysts for converting our main renewable resource, biomass, to desired products such as fuel and industrial feedstock chemicals. Studies include the physiology, biochemistry, genetics, and ecology of bacteria and fungi that are important in agricultural and industrial processes involving fermentations, forestry, pulp and paper, agriculture, and other biochemical industries.

Complex Carbohydrate Research Center

Co-Directors: Dr. Peter Albersheim, 542-4404; Dr. Alan Davill, 542-4411

The Complex Carbohydrate Research Center (CCRC), a Department of Energy-funded Center for Plant and Microbial Complex Carbohydrates and the only National Institutes of Health Resource Center for Biomedical Carbohydrates in the country, studies the structure and function of complex carbohydrates from plants, microbes, and animals. CCRC scientists investigate the chemistry, physiology, and developmental and molecular biology of biologically important complex carbohydrates. The center's 45,000-square foot home on Riverbend Road is well-equipped for studying complex carbohydrates. CCRC scientists, representing a broad range of expertise, develop and use advanced analytical techniques, including mass spectrometry, nuclear magnetic resonance spectroscopy, computer graphics modeling, artificial neural networks, tissue culture, and recombinant genetics. The CCRC provides analytical services to scientists, offers four one-week hands-on extramural laboratory training courses each summer, and develops computer software to assist in the study of complex carbohydrates. CCRC personnel are presently engaged in over 100 collaborations with scientists in North America, Europe, and Asia. CCRC faculty hold joint appointments in the departments of biochemistry, chemistry, botany, and plant pathology; students can apply to conduct their graduate research or undergraduate projects with center faculty. Postdoctoral fellows and visiting scientists from around the world regularly come to the CCRC to gain expertise by working on research projects of interest. The center is supported by federal, state, and industrial funds and has an annual budget of about \$4 million.

Center for Computational Quantum Chemistry

Director: Dr. Henry F. Schaefer III, 542-2067
The Center for Computational Quantum Chemistry seeks to develop theoretical and computational methods through mathematical models for describing and understanding the movement and function of electrons in molecules and to apply the theoretical meth-

ods to significant problems of broad chemical interest. Some of the theoretical methods under development include the configuration interaction and coupled cluster methods and associated analytic gradient techniques. Additional theoretical work involves density functional theory, the evaluation of electron repulsion integrals, and the treatment of relativistic effects. Currently applications to several areas of chemistry are of special concern: (1) the potential energy hypersurfaces that govern elementary gas-phase chemical reactions, including systems pertinent to combustion; (2) fundamental problems in physical organic chemistry involving, for example, carbenes and other biradical species and systems such as the [n] paracyclophanes and [10] annulene; (3) organosilicon chemistry, specifically the prediction and understanding of the properties of silicon analogs of both common and unknown hydrocarbon compounds; (4) hydrogen bonding in systems as complicated as the guanine-cytosine base pair; (5) the study of molecular ions and ion clusters pertinent to atmospheric chemistry.

Center for Economic Education

Director: Dr. Elmer D. Williams, 542-7265
The Center for Economic Education, an ongoing program of the Department of Social Science Education, with assistance from the College of Business Administration, exists to increase the level of economic literacy in Georgia through the improvement of economics instruction in Georgia schools. The center provides in-service teacher training, develops instructional materials, and encourages innovation in economics education.

Center for Environmental Biotechnology

Director: Dr. Robert E. Hodson, 542-7849
The Center for Environmental Biotechnology, a part of the Institute of Ecology, is made up of an integrated team of scientists, staff and graduate students. The center has as major objectives to address basic questions in microbial ecology via a series of laboratory, field and modeling studies, to develop protocols for risk assessment and product advisement using bioengineered organisms, and to develop long-term linkages between university researchers and

industrial users of bioengineered microbes and products.

Fanning Leadership Center

Director: Melba Cooper, 542-1108

The Fanning Leadership Center's mission is to develop effective leaders for the betterment of Georgia communities. The center also develops and conducts leadership programs designed for potential, emerging, and established leaders at the local, state, and national levels. In collaboration with five other public service units and faculty from several schools and colleges on campus, the Fanning Leadership Center fosters a multidiscipline approach to leadership. The center serves as a central source of university-based knowledge and information about leadership.

Gerontology

The University of Georgia has a strong commitment to gerontology training. At present, training in gerontology is primarily at the graduate level although some opportunities for undergraduates are available. The Gerontology Center directs graduate training and awards a Graduate Certificate of Gerontology.

The Gerontology Center. The major purpose of the Gerontology Center is to coordinate and promote activities relating to aging throughout the University. The center's primary responsibilities are to coordinate graduate training and research, and to promote faculty development in gerontology. There is a Faculty of Gerontology associated with the Gerontology Center which consists of approximately 43 faculty members from 28 different academic departments on campus. Dr. Leonard W. Poon is the Gerontology Center Director, and Drs. Nancy Kropf and Everett Lee are the Assistant Directors.

Undergraduate Opportunities in Gerontology. There are opportunities for undergraduate students to enroll in courses and practica relating to the elderly. Those who wish to take one or more such courses may choose from:

FDN 500. Nutrition Related to the Human Life Cycle. 5 hours.

PSY 406. Psychology of Aging. 5 hours.

SOC 365. Social Gerontology. 5 hours.

SOC 466. Aging and Modernization:

Cross-Cultural Studies. 5 hours.

Interested students should contact their respective department heads, or Dr. Leonard W. Poon, Chairman of the Faculty of Gerontology and Director of the Gerontology Center (542-3954).

Center for the Study of Global Issues, GLOBIS

Coordinator: Dr. William O. Chittick, 542-6633
The Center for the Study of Global Issues, GLOBIS serves as a mechanism for coordinating and promoting instruction, service, and research in global studies. The focus of the center is on issues which are distinctly international, comparative, or transnational in character, such as the unfinished task of organizing a durable peace in a nuclear world, the growing pressures of expanding populations upon limited resources, and continuing threats to elemental human rights. One of the primary objectives of the center is to enrich the quality of training of undergraduates in global studies. The center administers the Certificate in Global Studies which is available to qualified undergraduate students throughout the University. The center also has a graduate level Certificate in Global Policy Studies.

Humanities Center

Director: Dr. Betty Jean Craige, 542-3966
The Humanities Center, through faculty grants and public programs, seeks to foster advanced humanistic research and to promote the exchange of ideas among scholars of different disciplines. At the end of the twentieth century, humanistic research is defined not so much by its subject matter as by its approach; humanistic research is characterized by a concern for the philosophical, social, ethical, legal, artistic, religious, and ideological implications of our knowledge of the world. Accordingly, humanistic research includes many kinds of scholarship, such as history, criticism, theory, interpretation, translation, close readings of texts, and interdisciplinary investigation.

Center for Insurance Education and Research

Director: Dr. Sandra G. Gustavson, 542-4290
The Center for Insurance Education and Research is designed to conduct research on questions of short- and long-term interest to the insurance community and to provide

periodic seminars and conferences on issues facing that industry. The center also sponsors continuing education programs for the insurance industry in Georgia and gives financial support to undergraduate and graduate students, as well as faculty of risk management and insurance.

Dean Rusk Center for International and Comparative Law

Director: Professor Thomas J. Schoenbaum, 542-5140

The Dean Rusk Center for International and Comparative Law was founded in 1977 as part of the School of Law to improve the effectiveness of relations among citizens, private sector entities, and government at the local, state, federal, and international levels. Using advanced electronic, information-processing techniques, the center's professional staff and part-time researchers mobilize university, business, and governmental resources to develop theoretical and practical approaches to improve the efficiency of governance, trade, and investment. On occasion the center also helps implement the approaches by providing the private and public sectors with essential manpower and information. In the past the Dean Rusk Center has developed several major initiatives for federal action concerning North American cooperation and overseas trade regulation and representation. It has also analyzed new approaches for expanding Georgia agricultural exports. The center publishes research reports, holds conferences, and sponsors research for Georgia citizens that cover fiscal and monetary policy, international arrangements, and domestic affairs.

James M. Cox Center for International Mass Communication Training and Research

Director: Dr. Albert L. Hester, 542-5023
The Center for International Mass Communication Training and Research serves to facilitate international mass communication training and research programs in which scholars from the United States and foreign countries, students, and mass communication professionals can cooperate. The center helps to coordinate efforts to improve the state of knowledge in the field and to encourage practical training, education, and service projects.

Center for International Trade and Security

Co-Directors: Dr. Gary K. Bertsch, 542-2985; Dr. Martin J. Hillenbrand, 542-2985

The Center for International Trade and Security is an interdisciplinary and interuniversity research, teaching, and service project designed to promote more informed trade and security policies and further national and state economic and security interests. Its primary function is to study and produce policy-relevant research on U.S. and Western alliance trade policy vis-a-vis Eastern Europe, the former Soviet Union, and Asia. The center encourages and coordinates collaborative research, teaching, and service related activities within the university, the state, nation, and international community.

Center for Latin American and Caribbean Studies

Contact Person: Dr. L. Harlan Davis, Office of International Development, 542-7887

The Center for Latin American and Caribbean Studies coordinates interdisciplinary research, curriculum offerings, and public programs which deal with Latin America and the Caribbean. Through colloquia, conferences, and an undergraduate certificate program, the center seeks to bring together faculty from all colleges and schools in the university currently engaged in work related to this region of the world. The Office of International Development provides programmatic and administrative support to the center.

Center for Management Excellence

Director: Dr. Robert D. Gatewood, 542-3700
The Center for Management Excellence has as its overall goal managerial and organizational productivity increases for Georgia, the Southeast, and the nation through the improvement of human performance in organizations. Functioning as a part of the Department of Management, the center's overriding purpose is to focus on the human element in productivity and performance. Program emphasis is also on computer assisted managerial decision making (Decision Support Systems and Group Decision Support Systems).

Center for Marketing Studies

Director: Dr. Malcolm A. McNiven, 542-3540
The Center for Marketing Studies, established in 1986, seeks to advance professional marketing education and to identify and develop new programs and methods which will better serve the marketing community's needs for education and information. The Master of Marketing Research Program, a nationally recognized graduate program, is administered by the center which is part of the Terry College of Business. The center also works to maintain and strengthen relations with the business community.

Center for Metalloenzyme Studies (CMS)

Co-Directors: Dr. Michael K. Johnson, 542-1949; Dr. Robert A. Scott, 542-1949

The Center for Metalloenzyme Studies (CMS) was established to encourage cooperative research on related biochemical problems by gathering basic knowledge about the working of metalloenzymes that catalyze a variety of life-supporting reactions like nitrogen fixation, sulfur metabolism, carbon monoxide metabolism, and hydrogen production. Using the latest technologies and state-of-the-art analytical equipment, faculty researchers and postdoctorate and graduate students are able to teach and train in genetics, enzymology, fermentation technology, and anaerobic techniques.

Center for Plant Cellular and Molecular Biology

Director: Dr. Susan R. Wessler, 542-3732
The Center for Plant Cellular and Molecular Biology is designed to foster and support interactions between those members of the University of Georgia research community who share a common interest in molecular aspects of plant growth and development. While members of the center carry out individual research programs, the center provides a base for joint and cooperative projects. It also provides a cohesive, broadly based training program for those interested in the molecular aspects of plant science.

Poultry Diagnostic and Research Center

Director: Dr. S.H. Kleven, 542-5644

The Poultry Diagnostic and Research Center carries out basic and applied research programs on the diseases which are of economic importance to the poultry industry of Georgia. Diagnostic, laboratory, and consultative services are provided to individuals and groups in all phases of poultry production.

Center for Private Enterprise

Director: Dr. Dwight R. Lee, 542-1311

The Center for Private Enterprise has as its major mission the furtherance of understanding of the principles of private enterprise. The center engages in research studies that demonstrate the benefits of economic decisions made in a competitive environment and in teaching undergraduate and graduate students the principles of private enterprise, the theoretical underpinnings of market economies, and other appropriate subjects. In addition to its teaching research functions, the center also carries on an active service program involving public lectures and seminars dealing with the private enterprise system.

Center for Remote Sensing and Mapping Science

Director: Dr. Roy A. Welch, 542-2359

The Center for Remote Sensing and Mapping Science (CRMS) undertakes research and training in the fields of remote sensing, geographic information systems (GIS), photogrammetry, digital image processing, and computer graphics, particularly as applied to the physical and biological sciences. Typical research topics include quantitative methodologies for measuring soil erosion from agricultural lands by photogrammetric techniques, mapping environmental disturbances from aerial photographs and satellite images, development of integrated image processing/GIS software and advanced technologies for monitoring the earth's surface from digital image data. Close associations are maintained with remote sensing organizations and scientists in Canada, Europe, South America, and Asia. The CRMS provides technical assistance to universities and to local, state, and federal agencies.

Center for Simulational Physics

Director: Dr. David P. Landau, 542-2908

The Center for Simulational Physics functions as a center for research and training in simulational science with emphasis on the use of high performance computing within a distributed, heterogeneous environment. Because of this focus, close interaction with the University Computing and Networking Services is maintained, and collaborative research programs with major institutions in the United States and Europe are developed. Specially designed courses and a weekly seminar series and annual workshop are organized. The center's staff consists of research and adjunct professors, visiting research scientists, and postdoctoral associates.

Small Business Development Center

Director: Henry H. Logan, Jr., 542-5760

The Small Business Development Center is an innovative, university-based extension effort which provides management and technical assistance to small businesses and prospective entrepreneurs. The SBDC offers its services through its statewide network of district centers. Supported by the University System of Georgia and the U.S. Small Business Administration, the SBDC provides free consulting services, continuing education programs at minimal cost, and business research.

Special SBDC units are involved with other business-related activities including: producing studies on local economic development; collecting and disseminating business data; assisting new start-up businesses by providing centralized office space and services; providing export assistance to small and medium-sized Georgia firms; and promoting small business development and retention in rural communities.

Institute for African American Studies

Director: Dr. R. Baxter Miller, 542-5197

The Institute for African American Studies provides a central focus for the study of the impact of African American contributions upon human culture.

The Institute is dedicated to the production of creative research on the achievements of African Americans and to exciting instruction for a diverse community of thinkers. In addition, the Institute serves as a cultural repository and resource for the citizenry of Georgia.

The Institute offers a certificate upon completion of four courses offered by the Institute, plus an additional two courses approved by the Institute's Director. For further information, contact the Director of the Institute for African American Studies.

Institute for Behavioral Research

Director: Dr. Rex Forehand, 542-1806

The Institute for Behavioral Research is a multidisciplinary research organization. Its purpose is to encourage a pooling of the expertise of faculty members and graduate students from such areas as Arts and Sciences, Business, Education, and Family and Consumer Sciences. The institute is composed of the Survey Research Center, Center for Family Research, Center for Research on Deviance and Behavioral Health, and Cognitive Studies Group.

Institute of Community and Area Development (ICAD)

Director: Dr. Joseph W. Whorton, Jr., 542-3350

The Institute of Community and Area Development (ICAD), a service unit of the University of Georgia, has worked for over 30 years helping communities statewide anticipate and plan for growth and its impending changes. Using the resources of the University and working closely with state agencies, local government, and community leaders, ICAD offers a comprehensive work program focusing on growth as it relates to the quality of life of Georgia's citizens. ICAD incorporates the expertise of faculty members from sixteen academic disciplines, each of whom is also skilled and experienced in group process and decision making. Assisting community organizations, local government groups, legislative committees and state agencies, ICAD also offers research and consultation in areas such as community investment, creative problem solving, natural resource management, recreation technical assistance, human resource development, and regional planning and development. ICAD also publishes mono-

graphs, reports, manuals, videos, and books designed to aid community developers and public policy officials.

Institute of Continuing Judicial Education of Georgia

Director: Mr. Richard D. Reaves, 542-7491
The Institute of Continuing Judicial Education of Georgia, housed at the University of Georgia School of Law, plans and conducts more than 50 seminars each year for the basic professional development and continuing education of judges and other personnel of the Georgia court system. It supports participation by selected personnel of the judicial branch in programs conducted by national training agencies. This past year its programs reached more than 3,000 judges and court support personnel.

Institute of Continuing Legal Education in Georgia

Executive Director: Mr. Barney L. Brannen, Jr., 369-5664

The Institute's administrative staff is housed in the historic Lumpkin House on Prince Avenue in Athens, Georgia, with the print shop staff in the A.G. Cleveland Building directly behind the Lumpkin House. The Institute was organized in 1965, and is a consortium of the Law Schools of Georgia, Emory, Mercer, and Georgia State Universities and the State Bar of Georgia. Approximately 149 programs in over 50 areas of the law are conducted each year with an approximate attendance of 18,500 (includes attendance at video replays of ICLE seminars). Two of these programs are held in Athens at the Georgia Center. The other seminars are conducted in cities throughout Georgia. The video replay network makes programs available to the majority of Georgia attorneys with a minimum of travel. The Institute has video tapes available to law firms, local bar associations and colleges to assist attorneys in getting their 12 hours of mandatory training each year. Approximately 1200 registrants take advantage of this program. More than 12 specialized seminars are transmitted to Atlanta live via satellite. These programs are co-sponsored with national CLE providers such as the American Bar Association and Practising Law Institute. More than 260 persons attend these co-sponsored programs. The Institute print shop prepares more than 130 publications per year.

Institute of Ecology

Director: Dr. Gary W. Barrett, 542-2968

The Institute of Ecology supports and encourages cross-disciplinary research and public service activities in ecology involving faculty, undergraduates, and graduate students from a variety of departments, schools, and research sites. The Institute, long known for its international research reputation, now also functions as a new academic unit in the Franklin College of Arts and Sciences. The Institute has a long-standing and highly productive relationship with the Savannah River Ecology Laboratory in Aiken, S.C. Long-term collaborative research takes place at the U.S. Forest Service's Coweeta Hydrological Laboratory in Franklin, N.C.; this research is supported by the National Science Foundation and administered by faculty in the Institute of Ecology. The Institute is presently developing research and academic relationships with the Joseph W. Jones Ecological Research Center, Ichauway, in southwest Georgia. The Institute supports research in marine and freshwater ecology, radiation ecology, ecological toxicology, evolutionary ecology, conservation biology, landscape ecology, restoration ecology, agroecosystem ecology, and resource management. Public service programs include workshops and special studies performed for government agencies and private industry as well as teacher workshops and presentations at local schools.

Carl Vinson Institute of Government

Director: Mr. Melvin B. Hill, Jr. 542-2736

The Vinson Institute is responsible for conducting an interdisciplinary program designed to improve the knowledge and skills of elected and appointed Georgia state and local government officials and others. With expertise in government, public administration, public law, public finance, environmental protection, public management, and personnel administration, Institute faculty formulate and conduct over 850 training programs and conferences each year, offer technical assistance and consulting to public officials, and engage in an extensive research and publications program. A program in citizen education offers teachers, students, and citizens of all ages a variety of services that promote better understanding of governmental structure and processes. The Vinson In-

stitute also cooperates with the Department of Political Science in the administration of the Master of Public Administration degree.

Institute of Higher Education

Director: Dr. Cameron Fincher, 542-3464

The Institute of Higher Education has been organized to work with other educational agencies and organizations in the development of higher education. The Institute provides a diversity of services to two-year and four-year colleges in the state and surrounding region, cooperates with other institutions in statewide, regional, and national studies, and participates in numerous planning, development, assessment, and evaluation projects.

School of Marine Programs

Director: Dr. Edward Chin, 542-7671

The School of Marine Programs, established by the University in 1992, is responsible for the coordination and general management of the Department of Marine Sciences, Marine Institute, Marine Extension Service, and the Georgia Sea Grant College Program.

In January 1993, the Franklin College of Arts and Sciences activated a new **Department of Marine Sciences** within the School of Marine Programs. The Department of Marine Sciences currently offers undergraduate courses in marine biological, chemical, and physical science. Students have access to the extensive field and laboratory facilities of the School of Marine Programs in Athens and at Sapelo Island, Skidaway Island, and Brunswick on the Georgia coast. At the time of this writing, the Franklin College of Arts and Sciences is considering a proposal to offer an undergraduate major leading to the B.S. in Marine Sciences.

The **Marine Institute**, located on Sapelo Island, was established in 1953 and serves as a research facility for resident staff and for campus-based faculty members. Research has centered mainly on basic marsh ecology to provide an understanding of energy flow, cycling of minerals and nutrients through the marshes, and factors regulating the metabolism of the salt marsh ecosystem.

The **Marine Extension Service** addresses problems related to the state's marine resources and provides an outreach program in marine environmental education to students, including K-12, college, post-

graduates, and the general public. The Marine Resources Center on Skidaway Island is the major marine education facility for schools and colleges in the state. At the Brunswick Extension Station, specialists work directly with the fishing and seafood processing industries to solve problems of resource management and utilization.

The **Georgia Sea Grant College Program**, part of the National Sea Grant College Program, was established in 1971. In an approach roughly analogous to that of the Land Grant System in working with agriculture, Sea Grant promotes the wise use of marine resources through a coordinated program of research, education, and advisory services. The University of Georgia was designated as the nation's fifteenth Sea Grant College in 1980.

Institute for Natural Products Research

Director: Dr. S. William Pelletier, 542-5800
The Institute for Natural Products Research carries out a broad range of research on naturally occurring substances of plant origin, with particular attention to plant species of Georgia and the Southeast. Projects involve research on alkaloids, terpenes, anti-tumor agents, phytoalexins; the development of new synthetic methods; and the application of modern spectroscopic methods to structure elucidation problems. Research involves the isolation and elucidation of chemical structures of new compounds possibly useful as drugs for the treatment of human disease. The institute serves as a training center for visiting faculty and for postdoctorate and graduate students who are working in natural products research.

James M. Cox, Jr. Institute for Newspaper Management Studies

Director: Prof. Conrad C. Fink, 542-5031
The James M. Cox, Jr. Institute for Newspaper Management Studies, founded in 1990, is designed to assist undergraduate and graduate students in learning management skills, as well as journalistic techniques, necessary for efficient, profitable and socially responsible operation of newspapers in today's complex society. The institute also funds research projects with direct application to management and strategic problems confronting the newspaper industry.

Other University Activities

Athletic Association

The University of Georgia conducts a broad program of intercollegiate athletics which includes 19 sports (9 men, 10 women). The University is a member of the Southeastern Conference and the National Collegiate Athletic Association, and abides strictly by the regulations and policies of these groups. Although the faculty has general control of internal policies of the University relating to all phases of intercollegiate athletics, the University of Georgia Athletic Association has been created to facilitate the handling of the business and financial side of the intercollegiate program.

Georgia Alumni Society

Since its founding in 1834, the Georgia Alumni Society has had the same basic purpose—to support and strengthen the University of Georgia through a variety of activities.

The day-to-day business of the Society is administered by the Office of Alumni Relations which is located within the Frank D. Rose Alumni House on South Campus.

Students are invited to visit the Alumni House and to become involved with the Society's activities.

Georgia Museum of Art

The Georgia Museum of Art was established in 1945 when Alfred H. Holbrook donated his collection of 100 American paintings to the University of Georgia. The museum opened in the basement of the university library in 1948 on north campus, and took over the entire building in the early 1950s when a new library was constructed. The new museum will open on River Road as part of the Performing and Visual Arts Center in April of 1996.

In the years since Holbrook's original gift marked the founding of the museum, the permanent collection has grown by gift and acquisition to more than 6,500 works of art. These works include 19th- and 20th-century American paintings, a Kress Study Collection of Italian Renaissance paintings, and an extensive collection of prints and drawings by American, European, and Oriental masters.

The museum presents a schedule of changing exhibitions organized by the staff from the permanent collection and private and public collections as well as special traveling exhibitions from throughout the United States. Lectures, gallery talks, film series, family days, and other events are scheduled to complement these exhibitions. Museum tours and special viewing of works in the permanent collection are available for university classes by request.

The Georgia Museum of Art was designated the State's Official Art Museum by the 1982 Session of the Georgia General Assembly. Partial support for the exhibitions and programs at the Georgia Museum of Art is provided by the Georgia Council for the Arts through the appropriations of the Georgia General Assembly and the National Endowment for the Arts. The museum is open to the public 9 a.m.-5 p.m., Monday through Saturday, and 1-5 p.m. on Sunday. Admission is free.

The Museum Shop, which offers an array of art-related gift items, cards, posters, and books is open Monday through Saturday, 11 a.m.-4 p.m. and Sunday, 1:30-4 p.m.

Georgia Repertory Theatre

The Georgia Repertory Theatre is a fully professional repertory theatre company established as a resident theatre which presents a spring season in Athens. Presented in cooperation with Actors Equity Association, the professional actors organization, the Georgia Repertory Theatre presents new plays by established American playwrights.

The Georgia Repertory Theatre provides students and the University community and visitors with the opportunity to see the highest level professional theatre.

Oak Ridge Associated Universities

Since 1948, students and faculty of the University of Georgia have benefitted from its membership in Oak Ridge Associated Universities (ORAU), a consortium of colleges and universities and a management and operating contractor for the U.S. Department of Energy (DOE) located in Oak Ridge, Tennessee. ORAU works with its member institutions to help their students and faculty gain access to federal research facilities throughout the country; to keep its members

informed about opportunities for fellowship, scholarship, and research appointments; and to organize research alliances among its members.

Through the Oak Ridge Institute for Sciences and Education, the DOE facility that ORAU manages, undergraduates, graduates, postgraduates, as well as faculty enjoy access to a multitude of opportunities for study and research. Students can participate in programs covering a wide variety of disciplines including business, earth sciences, epidemiology, engineering, physics, pharmacology, ocean sciences, biomedical sciences, nuclear chemistry, and mathematics. Appointment and program length range from one month to four years. Many of these programs are especially designed to increase the numbers of underrepresented minority students pursuing degrees in science- and engineering-related disciplines. A comprehensive listing of these programs and other opportunities, their disciplines, and details on locations and benefits can be found in the *Resource Guide* and the *Minority Research and Education Programs* brochure, which are available by calling the contacts below.

ORAU's office for University, Industry, and Government Alliances (UIGA) seeks opportunities for collaborative research and development alliances among ORAU's members, private industry, and major federal facilities. Other UIGA activities include the sponsorship of conferences and workshops, the Visiting Scholars program, and the Junior Faculty Enhancement Awards. A copy of *Especially for Members*, which details UIGA's programs, is available from the contacts below.

For more information about ORAU and its programs, contact Dr. Robert L. Anderson, ORAU Council member, at 706-542-5988; or contact Ann H. Patton, ORAU Corporate Secretary, at 615-576-3306.

Office of Instructional Development (OID)

Director: Dr. Ronald D. Simpson, 542-1355
Associate Director: Dr. William K. Jackson, 542-1355

Associate Director: Dr. Jay Harriman, 542-1582

OID is a unit within Academic Affairs devoted to the the advancement of instruction at the University. OID is advised by a faculty com-

mittee and reports directly to the Vice President for Academic Affairs. The central mission of OID is to provide campus-wide leadership on matters relating to instruction. OID coordinates over 30 programs for faculty, administrators, and graduate teaching assistants, including **instructional development and instructional technology programs** (Instructional Improvement Grants Program, Instructional Technology Grants Program, Instructional Development Lab, ILSOC, Large Class Interest Group, and instructional consultation for faculty); **faculty development programs** (Lilly Teaching Fellows Program, Senior Teaching Fellows Program, Teaching Improvement Process, Teaching and Learning Group, Colloquium for New Faculty, and noon seminars); **Graduate Teaching and Lab Assistant support services** (GSC777-level III, GTA Mentoring Program, Workshop for GTAs, GTA Teaching Awards, and TA Advisory Committee); and, **publications** (*Keys to Professional and Personal Development for Faculty*, *Teaching at UGA*, *GTA Newsletter*, *GTA Handbook*, *IIG & ITG Summaries*).

OID's Instructional Resources Center offers facilities design for media technology; training and support for technology-enhanced classrooms; the University Cablevision system; media collections including the WSB TV newsfilm archives, and educational films and videos; creative production services in multimedia, video, audio, graphics, and photography; AV equipment checkout and delivery; and, a variety of other media services.

Office of International Development

The Office of International Development encourages a broader vision and understanding of the increasingly interdependent world and global economy. The Office compiles and maintains information on all faculty and staff with international experience. In addition, International Development systematically identifies opportunities with governments, development banks, and foundations to facilitate faculty involvement in international collaborative research, technology transfer, and exchange relationships with colleagues abroad, particularly in the developing nations. When faculty participate in these opportunities, the office provides assistance in proposal writing and packaging to foster these activities of mutual benefit to UGA and its international partners.

The Office of International Development also serves as a clearinghouse for all international activities planned or underway at the University. The office has spearheaded UGA involvement in highly successful projects in Burkina Faso, Brazil, and Mexico, among many others. International Development facilitates advanced long-term training for scores of foreign students and organizes development programs for faculty and staff at UGA. The Office of International Development's community outreach takes the form of educational programs such as presentations, lectures, and co-sponsorship of international conferences.

The Office of International Development offers several services to the University community:

- Identifies and publicizes international development projects
- Links faculty with requests for technical assistance from donor organizations
- Assists in preparing proposals to international donor organizations
- Serves as liaison with international sponsoring agencies and foundations
- Organizes training programs for international students
- Assists students sponsored by federal and international agencies
- Administers language courses for faculty and staff
- Provides administrative support for Area Studies Centers
- Coordinates and monitors UGA international agreements

University of Georgia Foundation

The University of Georgia Foundation was organized in 1937 under the sponsorship of the Alumni Society and its officers. The Foundation is a private, non-profit corporation under the laws of the state of Georgia and has a board of trustees, consisting of alumni and friends of the University.

The purposes of the Foundation are to strengthen its financial resources by encouraging gifts to the University, and to receive, hold, and administer such gifts in accordance with the instructions of the donors.

Information regarding the Foundation may be obtained by writing to the Vice President for Development and University Relations, The University of Georgia, Athens, Georgia 30602.

University of Georgia Press

The University of Georgia Press was established in 1938 as the book-publishing arm of the University of Georgia. Since then it has published over 1,000 books in a variety of disciplines by authors from the University of Georgia and institutions throughout the world. The press publishes between 70 and 80 books per year for the benefit of both scholars and educated laypersons.

For further information or a list of publications by the press, contact the marketing department of the University of Georgia Press, Athens, Georgia 30602.

University of Georgia Research Foundation, Inc.

The University of Georgia Research Foundation, Inc. was incorporated under the laws of the State of Georgia as a nonprofit corporation on November 17, 1978.

In a Memorandum of Understanding dated February 26, 1979, the Board of Regents of

the University System of Georgia authorized the Research Foundation to serve as the official grantee of all contracts, grants, and gifts for the conduct of sponsored research at the University of Georgia. In turn, the Research Foundation subcontracts with the University.

The Research Foundation was also organized to assist in the transfer of technology developed through the University of Georgia's research programs or by University personnel to the benefit of the University of Georgia and the general public. It works with inventors to obtain appropriate protection for their discoveries, including patents, plant patents, copyrights, trademarks, and plant variety protection certificates. It then works with industry to license the discoveries for commercial development.

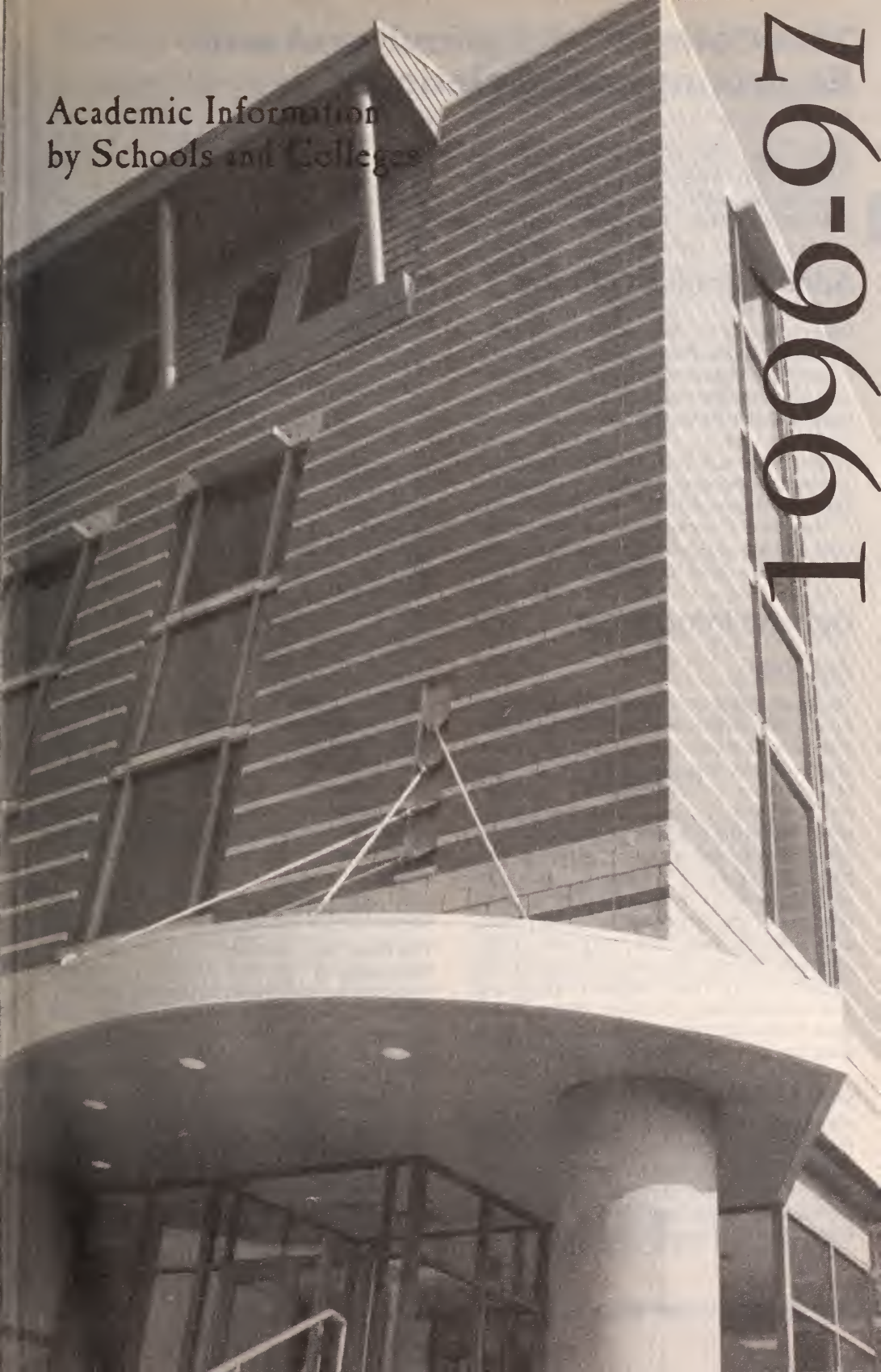
Additional information about the Research Foundation may be obtained from the Office of the Vice President for Research, Boyd Graduate Studies Research Center, The University of Georgia, Athens, Georgia 30602.





Academic Information
by Schools and Colleges

1996-97



The College of Agricultural and Environmental Sciences

Conner Hall, (706) 542-1611

FAX: (706) 542-2130

E-mail: against@uga.cc.uga.edu

World Wide Web: <http://www.uga.edu/~aacaes>

Administrative Officers

Gale A. Buchanan, B.S., M.S., Ph.D., *Dean and Director of the College of Agricultural and Environmental Sciences and Interim Associate Dean for Research*

Ivery D. Clifton, B.S., M.S., Ph.D., *Associate Dean*

F. Wen Williams, B.S., M.S., Ph.D., *Associate Dean for Academic Affairs*

James M. Allison, Sr., B.S.A.E., M.S., Ph.D., *Associate Director for Academic Affairs*

Carl Wayne Jordan, B.S., M.S., Ph.D., *Associate Dean for Extension*

General Information

PURPOSE

The goal of the College of Agricultural and Environmental Sciences instruction program is to educate students in the agricultural and environmental sciences to meet the needs of agriculture and environmental protection on a regional, national, and international level. Few of the graduates from the College enter farm production careers. More than half pursue careers in business, with both agricultural and non-agricultural firms. Other graduates are employed in government, environmental protection, education, management, finance, research, processing, and manufacturing. The College of Agricultural and Environmental Sciences offers 22 degree programs that prepare students for a wide variety of career opportunities.

ORGANIZATION

The College of Agricultural and Environmental Sciences is organized to administer its three missions: teaching, research, and service. The Dean and Director has overall administrative responsibility. The Associate Dean for Academic Affairs administers the

teaching program, the Associate Dean for Research administers the research program of the Agricultural Experiment Stations, and the Associate Dean for Extension administers the public service program of the Cooperative Extension Service. Most of the teaching faculty also have research responsibilities in the Agricultural Experiment Stations.

FACILITIES

Administrative offices for the College are located in Conner Hall on South Campus. All courses offered by the College are taught in buildings, laboratories, and greenhouses on South Campus. Several research farms, as well as plant and animal laboratories, are an integral part of the instruction program.

The Science Library and the University Computer Center are also conveniently located on South Campus. Many courses taught in various departments of the College require use of microcomputers and terminals which access University computers. Three microcomputer and word processing laboratories are located in College of Agricultural and Environmental Sciences classroom buildings for use by students and faculty.

ELECTRONIC ACCESS

The materials contained in this bulletin for the College of Agricultural and Environmental Sciences are available on the Internet under the University of Georgia Gopher and the World Wide Web. To obtain Gopher access:

- (1) At the Gopher prompt, enter *Gopher.UGA.EDU*
- (2) Select *Other*
- (3) At the next menu select *Agricultural and Environmental Sciences, College of*
- (4) Select *Academic Affairs, CAES*
- (5) Within this menu many menus associated with the instructional programs within the College can be selected.

Student Services

ACADEMIC ADVISING

All undergraduate students in the College of Agricultural and Environmental Sciences are assigned an academic advisor by the head of the department in which the student will major. New students meet with advisors during orientation sessions and permanent advisors are designated shortly after classes begin. Unspecified and pre-veterinary students will be assigned during new student orientation to an academic department in which they will be advised.

Special Programs

THE HONORS PROGRAM

The College of Agricultural and Environmental Sciences participates in the programs for superior students including the Honors Program. Admission of beginning freshmen is by invitation. Students who are not invited as entering freshmen but who have a cumulative average of 3.5 or better and less than 45 hours may request admission to the program. Students transferring from other universities or colleges with a cumulative average of 3.5 should write directly to the director of the Honors Program and request an interview. Students interested in this program should consult the section "Honors Program" in the Academic Information section of this bulletin.

CERTIFICATE IN INTERNATIONAL AGRICULTURE

Undergraduate students in Agricultural and Environmental Sciences may focus their degree programs on the special problems of international agriculture and trade relationships. The Certificate in International Agriculture is designed to add a global dimension to all programs in the College.

To obtain a Certificate in International Agriculture, students include courses in foreign language, geography, economic development, and international marketing. Careful planning will allow most students to qualify for the Certificate in International Agriculture by taking these courses as general electives while meeting degree requirements. Admission to the program and further information may be obtained from the Office of Academic Affairs, 102 Conner Hall.

CERTIFICATE IN ENVIRONMENTAL ETHICS

The Environmental Ethics Certificate Program trains students to make decisions about environmental problems that involve competing values. Students benefit from viewing environmental issues from an interdisciplinary perspective. The undergraduate program, established in 1994, parallels the 12-year-old graduate program, and complements the University's environmental literacy requirement. The certificate program is the only one of its kind in the United States.

The certificate is awarded to undergraduate students who successfully complete at least 28 hours of undergraduate course work, including 11 credit hours in core courses (one 5-hour course in ecology, one 5-hour course in ethics, and one 1-hour course in environmental ethics seminar), 12 hours in approved elective courses, and 5 hours for an approved research paper in environmental ethics.

To be eligible for admission to the program, an undergraduate student must have completed at least three quarters of full-time enrollment (must be a rising sophomore). The program is an interdisciplinary one and is not associated with any particular college or school. For further information, contact the coordinator, Peter G. Hartel, Department of Crop and Soil Sciences, 542-0898.

Degrees Offered

The College of Agricultural and Environmental Sciences offers four undergraduate degrees: the Bachelor of Science in Agriculture (B.S.A.) with a specified major, the Bachelor of Science in Agricultural Engineering (B.S.A.E.), the Bachelor of Science in Biological Engineering (B.S.B.E.), and the Bachelor of Science in Environmental Health (B.S.E.H.).

GRADUATE STUDY

The College of Agricultural and Environmental Sciences offers graduate programs leading to the Master of Science (M.S.) degree in agricultural economics, agricultural engineering, agronomy, animal science, dairy science, food science, horticulture, plant pathology, and poultry science. Additional degrees offered are the Master of Agricultural Economics (M.A.E.), the Master of

Agricultural Extension (M.A.Ext.), and the Master of Plant Protection and Pest Management (M.P.P.P.M.).

The Ph.D. degree is offered in agricultural economics, agronomy, biological and agricultural engineering, food science, horticulture, plant pathology, and poultry science. In addition, there are interdisciplinary programs in animal nutrition and animal sciences (physiology, nutrition, and genetics) and plant sciences.

Advanced Placement

Advanced placement examinations are given to freshmen during orientation sessions. In addition, students who enter with acceptable scores on the advanced placement tests of the College Board may be granted credit or exemptions for college-level courses. Freshmen can exempt courses in biology, chemistry, English, family and consumer sciences, foreign languages, history, mathematics, physics, political science, and psychology. Students are encouraged to take tests for possible exemption of elementary courses in these areas.

Transfer Students

Students transferring from other units of the University System will be given full credit for all courses completed with satisfactory grades, except those technical courses specifically offered to satisfy requirements for a two-year terminal program. Students should consult the programs of study in the College of Agricultural and Environmental Sciences described below to determine freshman-sophomore course requirements for each major. Any portion of the core curriculum which has not been completed during the freshman and sophomore years will be completed during the junior and senior years.

General Core Curriculum

The core curriculum for the freshman and sophomore years provides general education in basic science courses as well as introductory courses in agricultural science. This allows a flexible choice of agricultural and non-agricultural electives. By the time they have completed the core curriculum,

students should have selected their major field of study.

Courses under Areas I, II, and III are generally standardized throughout the College. For specific Area IV requirements, consult the departmental listings which follow.

HOURS

AREA I HUMANITIES/FINE ARTS	20
ENG 101 and 102 or 105H	10
SPC 108 or 218H	5

Choose from the following:

ART 200, 211H, 287, 288, 289;
CLC 120, 121, 150, 205H, 206H,
207H; any 100- or 200-level foreign
language; CML 221, 222,
225H, 226H; DAN 201; DRA 200,
210H, 212; ENG 231G, 232G,
233G, 234G, 235H, 236H, 237H;
LIN 210; MUS 202, 210H; PHY
100, 102, 202H, 214H; REL 115,
116, 225H

5

AREA II MATHEMATICS AND NATURAL SCIENCES	20
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CHM 111 and 111L, 112 and 112L, or,
depending on intended major,
CHM 121 and 121L, 122 and 122L
MAT 116 or 253 or 253T or 254 or
254T

10

5

PCS 101 or, depending on intended
major, PCS 127-127L, 128-128L,
or 137-137L

5

Students should check department/
major listings to determine the
appropriate sequence in chemistry
and the specific requirements
for mathematics and physics.

AREA III SOCIAL SCIENCES	20
HIS 251 or 252	5
POL 101 or 105H	5

Choose from the following as

appropriate for intended major:
AAE 258; ANT 102, 212H; ECN
106, 107, 116H, 117H; GGY 101,
215H; HIS 111, 121, 122, 215H,
216H, 217H, 251, 252, 253H,
254H; PHY 101, 205H, 215H; PSY
101, 103H; SOC 104H, 105, 160;
SOS 104

10

AREA IV COURSES RELATED TO MAJOR	30
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BIO 103-103L or 107-107L or BOT
121-121L

5

100- and 200-level courses in the
following areas, in accordance
with the Academic Discipline

Guidelines, depending upon selected major: accounting, agricultural economics, agriculture, animal and dairy science, anthropology, biological sciences, cellular biology, chemistry, computer science, crop and soil science, ecology, economics, education, engineering, engineering technology, food science, foreign language, forest resources, geography, geology, horticulture, journalism, legal studies, management, mathematics, physics, poultry science, sociology, statistics

25

BASIC PHYSICAL EDUCATION—2 hours

ENVIRONMENTAL LITERACY

Prior to graduation, all undergraduate students entering the College of Agricultural and Environmental Sciences Fall Quarter 1993 or later must take one or more courses to promote their awareness of environmental issues. To meet this requirement, students must complete one of the options listed below.

Option I

Take one of the following courses to meet requirements for environmental literacy:

- ANT 102, Introduction to Anthropology
- ECL 100-100L, Ecological Basis of Environmental Issues
- ECL(ANT/IDS) 307, Environment and Humans
- EHS 306, Introduction to Environmental Health Science
- GGY 200-200L, Resources, Society, and the Environment
- GGY 410, Conservation Ecology and Resource Management

Option II

Take one course or course sequence from each of the following lists:

List A

- BOT 121-121L, Elementary Botany
- BOT 122-122L, Elementary Botany
- BOT 477-477L, Community Ecology
- CSS 201-201L, Crop Science
- CSS 305-305L, Principles of Soils
- CSS 440, Crop Ecology
- ECL(BIO) 350, Ecology
- GGY 104, Earth Science Survey

- GGY(BOT) 413, Plant Ecology and Biogeography
- GGY 417, Animal Geography
- GLY 115-115L, Earth Processes and Environments
- HOR 304, Environmental Horticulture
- PAT 353-353L, Elementary Plant Pathology

List B

- AAE 306, Principles of Resource Economics
- AAE 465, Environmental Economics
- AAE 480-480L, Water Resource Economics
- AAE 493, Environmental Law and Governmental Regulation
- AGR(ETH) 419, Agricultural Ethics
- ANT 479, Human Adaptation
- GGY 101, Introduction to Human Geography
- HIS 483, History of Famine and Food Systems in Africa
- PHY(ETH) 418, Environmental Ethics
- SOC 240, Environmental Sociology
- SOC(ANT/POL) 440, Socio-Political Ecology

Option III

- Complete the following sequence:
- GLY 115-115L, Earth Processes and Environments
 - GLY 116-116L, The Earth Through Time

Option IV

- B.S.A.E. and B.S.B.E. degree candidates must take all five courses from the following list:
- EGR 190, Engineering Orientation
 - EGR 250, Introduction to Biological Engineering
 - EGR 292, Engineering Design Methodology
 - EGR 295, Engineering Economics
 - EGR 392, Senior Seminar

Academic Departments, Majors, and Minors

The College offers 22 majors under the following academic departments:

- Agricultural and Applied Economics
 - Agribusiness*
 - Agricultural Economics*
 - Environmental Economics and Management*

Agricultural Communications
Agricultural Communications

Agricultural Education
Agricultural Education

Animal and Dairy Science
Animal Science
Dairy Science

Biological and Agricultural Engineering
Agricultural Engineering
Agricultural Technology Management
Biological Engineering

Crop and Soil Sciences
Crop Science
Environmental Soil Science
Turfgrass Management

Food Science and Technology
Environmental Health Science
Food Science

Horticulture
Horticulture
Landscape and Grounds Management
Turfgrass Management

Plant Pathology
Plant Pathology
Plant Protection and Pest Management

Poultry Science
Animal Health/Pre-Veterinary Programs
 (may be advised in another selected department)
Biological Science
Poultry Science

All undergraduate students are provided an opportunity to pursue a minor area of study while completing course requirements for a major. Officially approved minors, which are noted on student transcripts on completion of course requirements, specify that 20 to 29 credit hours of upper division courses be earned in an area of study different from the major.

The College of Agricultural and Environmental Sciences offers minors in the disciplines of agribusiness, agricultural economics, animal science, crop science, dairy science, environmental soil science, food science, horticulture, plant pathology, poultry science, and turfgrass management. Courses taken for the minor should be coordinated through the department offering the minor.

Majors

Following is an explanation of majors offered by the departments of the College of Agricultural and Environmental Sciences and re-

lated departments. The requirements outlined within each program are suggestive rather than definite. The major for each student is an individual program, arranged in consultation with faculty in the department in which the major is taken. The following programs include the courses which the majority of students will use to satisfy requirements for the specified major.

AGRIBUSINESS

The agribusiness major prepares students for professional careers in agribusiness marketing, management, and finance. Agribusinesses process and market food and fiber products, supply inputs to agricultural production, and manage agricultural production. Agribusiness majors learn economic principles and strategies for agribusiness marketing and management. Students take courses in agribusiness management, marketing, accounting, economic theory, communications, mathematics, computers, and agriculture. Students learn decision-making skills for agribusiness management, finance, marketing, sales, processing, manufacturing, transportation, and international trade. The agribusiness degree provides career flexibility for students planning to work in private industry or government.

Practical Experiences

Agribusiness students develop management and financial strategies using case study data and microcomputer programs. Students forecast market prices, develop strategies for marketing new agribusiness products, and participate in case studies. Students develop communication skills for more effective agribusiness management. The agribusiness program is enriched by student participation in internships and cooperative projects with agribusiness companies and government agencies.

Career Opportunities

The agribusiness program is designed to place students in businesses supplying inputs to agricultural production, processing and transportation, in businesses engaged in food and fiber marketing, and in agencies that service and regulate agribusiness industries. Agribusiness majors develop skills to start their own businesses. Agribusiness

accounts for 15 percent of the nation's total economic activity. The University of Georgia's agribusiness program is expected to play a major role in meeting the agribusiness education needs of the state, region, and nation.

Freshman and Sophomore Years

See Area I in *General Core Curriculum* and/or consult department.

	HOURS
AREA II MATHEMATICS AND NATURAL SCIENCES	20
CHM 111 and 111L, 112 and 112L	10
MAT 116	5
PCS 101	5
AREA III SOCIAL SCIENCES	20
AAE 258 or ECN 106	5
HIS 251 or 252	5
POL 101 or 105H	5
Social science elective—see General Core Curriculum	5
AREA IV COURSES RELATED TO MAJOR	30
ACC 110	5
BIO 103-103L or BOT 121-121L	5
ECN 107	5
MAT 207, 253 or 253T	5
MAT 244, 254 or 254T	5
STA 200	5
<i>Junior and Senior Years</i>	
Major (C grade or better required): AAE 303-303L or CS 101-101L; AAE 304 or 310; AAE 340, 358- 358L, 369, 391 and 498; ACC 111	40
Major Electives (C grade or better required): Select from AAE 301, 303-303L, 304, 306, 310, 351, 404-404L, 405, 451, 476, 493, 496; AAE(FIN) 487; ECN(FIN) 326	20
Technical Agriculture: ADS 201-201L or PS 202-202L; CSS 201-201L or HOR 200; plus 5 hours from a specified list of courses in ADS, CSS, EGR, EHS, ENT, ET, FRS, FS, GEN, HOR, PAT, PS	15
Communications: Select from a foreign language; ENG 359 or higher; JRL 301 or higher; MAN 201; MKT 562, 563, 564; PHY 110; SPC 240 or higher	10
Electives	5

At least 20 hours of coursework must be 400-level or above.

Minor in Agribusiness: Contact the department for requirements.

AGRICULTURAL COMMUNICATIONS

Students considering the agricultural communications major should have aptitude both in science and in marketing and communication skills. Students take agriculture, science, and economics courses in the College of Agricultural and Environmental Sciences and journalism courses in the College of Journalism and Mass Communication. Upon completion of the program, students receive the Bachelor of Science in Agriculture (B.S.A.) degree.

Most courses taken in junior colleges transfer to the major, but students who take their entire coursework at the University generally find it easier to complete the requirements for the major within four years. A minimum overall grade point average of 2.5 is required for transfer admission into the program.

Practical Experiences

Agricultural communications majors are encouraged to take an internship working in some aspect of agricultural communications: advertising, public relations, newspapers, magazines, or broadcasting. Students receive credit for the internship.

Career Opportunities

In today's economic environment, there is a need for people with communication skills who also understand scientific agriculture. Every land-grant university employs a staff of journalists to communicate its research, extension, and teaching programs. Several branches of the federal government—USDA, Department of State, Department of the Interior—employ agricultural journalists, as do similar departments in state governments. There are several hundred agriculture-related publications in the United States. Agribusiness, chemical and machinery companies, advertising agencies, and agriculture associations employ people who are trained in writing, advertising, broadcasting, and public relations.

Graduate training in agricultural journalism is offered by many universities.

Freshman and Sophomore Years

See Areas I, II, and III in *General Core Curriculum* and/or consult department.

	HOURS
AREA IV COURSES RELATED TO MAJOR	30
AAE 258 or ECN 106	5
BIO 103-103L or BOT 121-121L	5
CS 101-101L	5
GGY 200-200L	5
SOC 160	5
Approved Electives	5

Junior and Senior Years

Agriculture courses selected with advisor's approval (C grade or better required). 45

Journalism Courses (C grade required) 40

Selected from: 25

Advertising: JRL 310, 311, 312, 313, 341

Journalism: JRL 341, 351, 530, 532, 558

Public Relations: JRL 341, 351, 352, 385, 532

Telecommunications: JRL 301, 302, 341, 383, 384

Journalism electives related to major area 15

Electives 5

AGRICULTURAL ECONOMICS

Agricultural economics applies economic principles to food and fiber production, natural resource management, community and regional economic development, environmental policy, and international trade. Students take courses in economic theory, econometrics, statistics, accounting, technical agriculture, and the physical and biological sciences. A flexible offering of electives allows students to tailor the agricultural economics major to meet their particular interests and career objectives. Agricultural economics provides a strong theoretical background for those entering graduate schools in agricultural economics, economics, and professional schools in law and business administration.

Practical Experiences

Agricultural economics students develop analytical methods to study resource allocation problems in agriculture, natural resources, and rural development. Students receive hands-on experience in price analysis, operations research, public program analysis, economic development, economic research, and public administration. Students are well-grounded in economic theory and conduct economic analysis through the use of microcomputers and case studies.

Career Opportunities

Agricultural economics prepares students for careers in applied economics, resource management, public program analysis, economic forecasting, and economic research. Agricultural economics graduates are now working in commercial agriculture, food and fiber industries, resource and environmental management agencies, economic development agencies, state and local governments, and international trade organizations. Position responsibilities include resource management, finance, administration, economic research, and policy analysis with private, non-profit, and public agencies at the state and federal levels. Job opportunities are expanding for graduates with skills in applied economics.

Freshman and Sophomore Years

See Area I in *General Core Curriculum* and/or consult department.

	HOURS
AREA II MATHEMATICS AND NATURAL SCIENCES	20
CHM 111 and 111L, 112 and 112L	10
MAT 116	5
PCS 101	5
AREA III SOCIAL SCIENCES	20
AAE 258 or ECN 106	5
HIS 251 or 252	5
POL 101 or 105H	5
Social science elective—see General Core Curriculum	5
AREA IV COURSES RELATED TO MAJOR	30
AAE 211 or ACC 110	5
BIO 103-103L or BOT 121-121L	5
ECN 107	5
MAT 207, 253 or 253T	5

MAT 244, 254 or 254T 5
STA 200 5

Junior and Senior Years

Major (C grade or better required):
AAE 304 or 310, 306, 340, 358-
358L, 361, 369 30

Major Electives (C grade or better
required): Selected from a list of
specified courses in AAE, ECN,
EHS, ENG, FIN, FRS, GGY, INS,
LS, MAN, MAT, MKT, MS, POL,
RE, REC, SOC, STA (15 hours
must be in AAE) 20

Major Related: ECN 406 and 10 hours
from a list of specified courses in
ADS, CSS, EGR, EHS, ENT, ET,
FRS, FS, GEN, HOR, PAT,
PS 15

Electives 25

At least 20 hours of coursework must be
400-level or above.

Minor in Agricultural Economics: Contact
the department for requirements.

AGRICULTURAL EDUCATION

Career Opportunities

The courses offered in agricultural education prepare students for teaching positions in secondary school agriculture programs and related professional jobs in agriculture. Students majoring in agricultural education develop a broad background in the agricultural sciences and upon satisfactory completion of the program are qualified for certification by the State Department of Education as teachers of agriculture. Graduates are also eligible for teacher certification in most states in the U.S. and in all other states, with minimal additional requirements. The agricultural education program is carried on in cooperation with the College of Education through its Department of Occupational Studies.

In addition to the opportunities for teaching agriculture, graduates of this program are employed in the Cooperative Extension Service and in many other leadership positions in the fields of agriculture and education. Such positions capitalize on the technical and professional skills of these graduates for application in various selling, promotional, administrative, research, and educational leadership projects.

Early Experience

Students majoring in agricultural education and any students considering an agricultural education major are encouraged to take EAG 345—School Practicum in Agricultural Education (1 credit hour). This course allows students to visit and observe in agriculture classes at selected high schools. Thirty contact hours in the school are required for credit. The School Practicum helps students to better understand the job of teaching agriculture and to better utilize their college program in preparation for the job. The course is also very useful in helping students decide whether or not an agricultural education major is right for them.

Introductory Course

All agricultural education majors are required to enroll in EAG 334. This course, which is offered only spring quarters, helps students understand program principles and philosophy, and how to use demographic data to design and implement community-based agricultural education. Students apply for admission to teacher education during the course.

Admission to Teacher Education

Prior to enrolling in the professional sequence 335, 336, and 546, students must comply with Regents' requirements for admission to Teacher Education. Specifically, the following requirements must be met:

- Completion of at least one quarter in residence at UGA
- A minimum of 2.5 GPA on UGA resident course work (2.5 on all course work if a student holds a bachelors degree in another major)
- Satisfactory completion of ENG 101 and 102
- Grade of C or better in Introduction to Education course (EFN 203 or other approved course)
- Passing scores on the Regents' Test
- Demonstration of oral language competency (SPC 108 or 218H or equivalent or advisor's clearance)

Applications for admission to Teacher Education are due in the Agricultural Education office one month before the quarter in which the first professional course is taken.

Apprentice Teaching (Student Teaching)

During winter quarter of the senior year, each student does apprentice teaching in a selected off-campus school for which 15 quarter hours of credit are given. A cadre of over 50 experienced teachers of agriculture located in schools throughout Georgia have been prepared to supervise apprentice teachers on a daily basis. This system of training enables the student to deal firsthand with the problems of teaching agriculture. The apprentice is also under the careful supervision of the University Agricultural Education faculty.

Freshman and Sophomore Years

See Areas I, II, and III in *General Core Curriculum* and/or consult department.

	HOURS
AREA IV COURSES RELATED TO MAJOR	30
BIO 103-103L, 104-104L or 107-107L, 108-108L	10
EFN 203	5
EPY 204	5
Any approved 100- or 200-level courses in the College of Agricultural and Environmental Sciences	10
<i>Junior and Senior Years</i>	
Professional* Courses: EAG 334, 335(TE), 336(TE), 546(TE)	28
Support Courses: AAE 301 or 304; CSS 305-305L; ENT 374-374L; ET 303 and 307; PAT 353-353L	26
Agricultural Science Electives: Approved courses selected from the following areas: AAE, ADS, BCH, CSS, ET, FRS, FS, GEN, HOR, or PS	26
Special Requirements: EAG 345 and 400; EOS 555 or SPE 300	10

* (TE) following a course number indicates that the student must be formally admitted to Teacher Education before registering for the course.

AGRICULTURAL ENGINEERING

The agricultural engineering curriculum at the University of Georgia is basically a general engineering program which leads to the degree Bachelor of Science in Agricultural Engineering. This versatile engineering program combines the principles of mechanical, electrical, and civil engineering to prepare men and women for professional careers in both agricultural and non-agricultural industries. Activities in these careers may involve design of machinery and equipment (mechanical); structural and environmental design (civil); water and soil management (civil); processing, manufacturing, and quality measurement (mechanical, chemical, and electrical); and controls, energy use, microelectronics, and electric machines and equipment (electrical).

The four-year professional engineering curriculum—Bachelor of Science in Agricultural Engineering—provides a general engineering degree that includes the basic sciences, humanities, social sciences, engineering sciences and courses in engineering design and analysis. All students complete courses in the basic engineering sciences such as statics, dynamics, strength of materials, fluid mechanics, electric circuits, heat transfer, and thermodynamics. They also complete intermediate engineering science and design courses in engineering mechanisms, electrical systems and controls, electronics, processing, structural design, water and soil engineering, environmental control, surveying and graphics (CAD). Twenty-five credit hours are selected by students during their junior and senior years to develop a desired *engineering emphasis* in one of the following areas: (1) Design and Environmental Management of Structures, (2) Electrical and Electronic Systems, (3) Materials Processing, (4) Mechanical Systems, (5) Water and Soil Resource Management. The development of both technical and communication skills is stressed throughout the program. The program establishes an interrelationship between the engineering profession and society.

The curriculum in agricultural engineering is fully accredited by ABET (Accreditation Board for Engineering and Technology, Inc.) and graduating seniors must complete the FE (Fundamentals of Engineering) examination prior to graduation. Successful completion of this exam qualifies the student

for EIT (Engineer in Training) registration which is a prerequisite for the PE (Professional Engineer) registration.

An engineering co-op program is available for students who wish to complement their educational program with practical on-the-job experiences.

Students transferring into Agricultural Engineering must have an overall grade point average of 2.5 or higher. All students must earn a grade of C or better in all required mathematics and physics courses and EGR 109, 121, 190, 215, 350, 351, 355, 356, 373, 374, 383, 387, and 392.

Career Opportunities

The general engineering nature of the agricultural engineering program enables graduates to take advantage of employment opportunities related to agricultural, civil, mechanical, electrical, and food engineering. The versatility of this degree program provides a broad spectrum of career alternatives in engineering design, development, testing, process control, and management. Typical employers of graduates are involved in food processing (e.g., General Foods, Gold Kist, Proctor & Gamble); electrical, electronics, and communications (e.g., Southern Bell, General Electric, Logic Technologies, Westinghouse); environmental engineering (e.g., CH²M Hill, USGS, EPA); mechanical equipment (e.g., Carrier Transicold, John Deere, FMC); utilities (e.g., Georgia Power Co., Jackson EMC, Duke Power Co.); paper production (e.g., Georgia Pacific, Weyerhaeuser); construction and consultants (e.g., Golder and Associates, Haliburton); textiles (e.g., Milliken Industries); and federal, city, and state agencies (e.g., Warner Robins Air Logistics Center, USDA-SCS).

Freshman and Sophomore Years

	HOURS
AREA I HUMANITIES AND FINE ARTS	20
ENG 101 and 102 or 105H	10
SPC 108 or 218H	5
Choose from the following: CML 221, 222; ENG 231G, 232G, 233G, 234G	5
AREA II MATHEMATICS AND NATURAL SCIENCES	20
CHM 121 and 121L, 122 and 122L	10

MAT 253	5
PCS 137-137L	5

AREA III SOCIAL SCIENCES 20

HIS 251 or 252	5
POL 101 or 105H	5

Electives (must include either a second course in political science or a two-course sequence in another social science such as psychology, sociology, or philosophy. Refer to General Core Curriculum for other social science course sequences)

10

AREA IV COURSES RELATED TO MAJOR 30

BIO 103-103L or BOT 121-121L	5
EGR 109, 121, 190, 295	10
MAT 254, 255	10
PCS 138-138L	5
EGR 215, 250	8

Junior and Senior Years

EGR 292, 325, 350, 351, 355, 356, 365, 371, 373, 374, 381, 382, 383, 387, 392, 441, 492AB	72
MAT 358	5

Areas of Emphasis in Design and Environmental Management of Structures, Electrical and Electronic Systems, Materials Processing, Mechanical Systems, Water and Soil Resource Management: Contact the department for requirements.

AGRICULTURAL TECHNOLOGY MANAGEMENT

The agricultural technology management curriculum leads to the degree of Bachelor of Science in Agriculture. The curriculum is administered by the Department of Biological and Agricultural Engineering and emphasizes engineering technology, scientific concepts, and business and management principles. The program stresses the application of managerial concepts to modern technology. Graduates from the technology program are functional managers of agricultural and industrial operations.

Students majoring in agricultural technology management complete engineering technology courses in electric power and equipment, electronic instrumentation, structures and environments, water management, surveying, materials handling, processing operations, and engineering graphics (including CAD). In addition, each student may

choose to develop a greater understanding of science, business, or technology by selecting 33 credit hours of electives based upon his or her interest. Science courses are traditionally in the areas of animal science, dairy science, poultry science, horticulture, agronomy, and agricultural economics. Business electives emphasize management, marketing, accounting, finance, and economics. Technology course work focuses upon engineering technology courses in the areas of electrical machines and controls, mechanical energy conversion, hydraulic systems, machinery management, and wood and metal technology.

Graduates of the agricultural technology management program serve as a vital link between the engineers who design new technology and the business world which utilizes it. Rapid advances in technology demand that managers be technically competent. Employers rely on graduates of this program to communicate engineering technology concepts and apply business management principles to technical operations. Understanding engineering concepts and management principles is paramount for profitable business endeavors.

Graduates of agricultural technology management find employment with businesses related both directly and indirectly to the agricultural industry. The management of technology is required in all areas of production, manufacturing, distribution, and marketing for agricultural business and industry. Graduates pursue employment that emphasizes working with people, managing technology, and operating a successful business. These interests lead to employment with energy services, financial institutions, distribution and marketing firms, agri-industrial businesses, and management positions with processing plants, feed and fertilizer companies, and commercial farming operations.

All students must earn a grade of C or better in all required mathematics and physics courses prior to enrolling in junior or senior level ET courses.

Freshman and Sophomore Years

See Area I in *General Core Curriculum* and/or consult department.

AREA II MATHEMATICS AND NATURAL SCIENCES 20

CHM 121 and 121L, 122 and 122L	10
MAT 116	5
PCS 127-127L	5

AREA III SOCIAL SCIENCES 20

ECN 106 and 107	10
HIS 251 or 252	5
POL 101 or 105H	5

AREA IV COURSES RELATED TO MAJOR 30

ACC 110 and 111	10
BIO 103-103L or BOT 121-121L	5
LS 270	5
MAT 253	5
PCS 128-128L	5

Junior Year

A two-course sequence in a related field of agriculture (10 hours); EGR 109, 121; ENG 359; ET 328, 370, 380; MAN 351; MKT 360; MS 312-312L; approved elective (5 hours)	54
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Senior Year

AAE 369; EGR 392; ET 420, 430, and 440; electives (10 hours); approved electives (20 hours)	49
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Approved electives must be specified prior to the winter quarter of the junior year and are selected with the advisor's approval.

ANIMAL HEALTH

The degree program, the Bachelor of Science in Agriculture with a major in animal health, was begun in 1988. This program was designed, in close cooperation with the College of Veterinary Medicine, specifically for students entering veterinary school after three years of pre-veterinary study in the College of Agricultural and Environmental Sciences. Requirements for the degree may be met only after successfully completing the first year of study in the College of Veterinary Medicine.

Freshman and Sophomore Years

See Area I in *General Core Curriculum* and/or consult advisor.

HOURS

AREA II MATHEMATICS AND NATURAL SCIENCES 20

CHM 121 and 121L, 122 and 122L	10
MAT 116 or 253	5
PCS 127-127L or 137-137L	5

AREA III SOCIAL SCIENCES 20

AAE 258 or ECN 106	5
HIS 251 or 252	5
POL 101 or 105H	5
Elective (100- or 200-level)—see General Core Curriculum	5

AREA IV COURSES RELATED TO MAJOR 30

ADS 201-201L	5
BIO 107-107L, 108-108L	10
CHM 240 and 240L, 241 and 241L	10
PS 202-202L	5

Junior Year

Additional courses required for the B.S.A. in Animal Health:

ADS 330 or PS 375	4-5
BCH(BIO) 310	5
PCS 128-128L and 229-229L or 138-138L and 239-239L	10
PEB	2

Animal Production or Internship courses	8-10
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Select 10 hours from: BIO(CB) 330, 340; BIO(GN) 320 or GEN 358; CB 300-300L; MIB 350-350L; PS 372, 380-380L

	10
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Senior Year

Students who enter the College of Veterinary Medicine upon completion of the above requirements are eligible to receive the B.S.A. degree with a major in animal health after successfully completing the first year of study in the College of Veterinary Medicine. Alternatively, students may also use the senior year to complete requirements for a B.S.A. degree in an appropriate major in the College of Agricultural and Environmental Sciences. See pre-veterinary medicine programs on page 109.

ANIMAL SCIENCE

The animal science curriculum is designed to provide technical and applied instruction in the biological, physical, and economic aspects of beef, swine, sheep, and horse production. It includes the selection, breeding, nutrition, reproduction, growth, and management of livestock in the production

of meat and milk, or of horses as work or companion animals. Courses of a more basic nature may be emphasized by students who desire careers in science-related fields or who wish to pursue graduate or professional study. This major is highly recommended for persons wishing to enter a program of study in veterinary medicine.

Career Opportunities

The curriculum in animal science is designed to prepare students for careers as livestock producers, farm managers, animal science specialists, county extension agents, vocational agriculture teachers, or research technicians. Students are also qualified for careers in agribusiness with meat companies, feed manufacturers, breed associations, animal health companies, livestock marketing organizations, livestock equipment and supply companies, livestock publications, or related fields.

Freshman and Sophomore Years

See Area I in *General Core Curriculum* and/or consult department.

HOURS

AREA II MATHEMATICS AND NATURAL SCIENCES 20

CHM 121 and 121L, 122 and 122L	10
MAT 116	5
PCS 101 or 127-127L	5

AREA III SOCIAL SCIENCES 20

AAE 258 or ECN 106	5
HIS 251 or 252	5
POL 101 or 105H	5
Elective (100- or 200-level)—see General Core Curriculum	5

AREA IV COURSES RELATED TO MAJOR 30

ADS 200-200L, 201-201L	7
BIO 103-103L, 104-104L or 107-107L, 108-108L	10
CHM 240 and 240L or 261 and 261L	5
CSS 201-201L	5
Elective approved by advisor	3

Junior and Senior Years

ADS 311, 320, 330, 331, 333, 340, 342, 381, 382, 391A; ADS(FS) 365-365L; VPH 310	42
Select 2 from ADS 360-360L, 361-361L, 362, 363	8
Electives	40

Electives will be chosen with the assistance of an advisor depending on student's interest in beef cattle, swine, horses, production, education, science, pre-veterinary medicine, agribusiness, meat industry, and training (equine).

Areas of Emphasis in Business and Industry, Industry Information, Meat Science, Science/Pre-Veterinary: Contact the department for requirements.

Minor in Animal Science: Contact the department for requirements.

BIOLOGICAL ENGINEERING

The Bachelor of Science in Biological Engineering degree program provides students with an excellent professional engineering education in complementary biological and engineering sciences so they may develop as experts, scholars, and entrepreneurs capable of implementing new ideas and technologies in the complex biologically-based industries.

The program meets highly promising and critically important needs for engineering systems in the rapidly advancing field of biotechnology. Recent discoveries in biological sciences are providing promising ways to beneficially manipulate biological systems ranging from individual cells to entire ecosystems for the purpose of increasing the quality, quantity, and cost effectiveness of food and other useful substances produced. Studies and surveys have identified needs and opportunities for engineering personnel in biomanufacturing, bioprocessing, and biocontrols. One report predicts that up to 2,500 additional biological engineers will be needed each year for the next ten years. Graduates of this program will meet the critical needs of the developing biologically-based industrial and manufacturing sector in the United States.

The four-year professional engineering program provides the student with a balance of basic sciences, humanities, social sciences, engineering sciences, biological sciences, and courses in engineering design and analysis. All students complete biological science courses in biology, organic chemistry, microbiology, and biochemistry with an option to select additional courses in genetics, cell biology, zoology, or botany. Engineering science courses required are statics, fluid mechanics, strength of materials, electrical

circuits, heat transfer, and thermodynamics. Students also take biological engineering courses in mass transfer, physical properties of biological materials, design of biological processes, biomechanical system design, and bioprocess monitoring and control.

Three areas of engineering emphasis are provided: 1) Biomechanics, 2) Bioprocessing, and 3) Environmental. These emphasis areas allow the student to tailor coursework toward an area of their primary interest. The development of both technical and communication skills is stressed throughout the program. Students are encouraged to participate in professional activities through local and national organizations.

An engineering co-op program is available for students who wish to complement their educational program with practical on-the-job experiences.

Students transferring into Biological Engineering must have an overall grade point average of 2.5 or higher. All students must earn a grade of C or better in all required mathematics and physics courses and EGR 109, 190, 215, 350, 355, 356, 373, 374, 383, and 392.

Career Opportunities

Employment demand for engineers remains among the most favorable of all the professions. A particularly rapid increase in demand has occurred in the food and agricultural products industries due to the recent development of processes and tools in biotechnology. Biological engineers will be essential to the solution of many process-development needs if the results from the efforts of life scientists are to be successfully transferred to full-scale production. Solving problems in biocatalysis, heat and mass transfer, efficient energy conversion and product recovery in biological processes requires an integration of the engineering and biological science disciplines.

The estimated number of job openings for biological engineers is about 2,500 per year for the next ten years. These positions include protein engineering, industrial fermentation, cell culture process engineering, filtration engineering, pilot plant scale-up, and others. A B.S. degree in Biological Engineering will meet the educational qualifications for each of these positions. Graduates will also be highly qualified for employment

in more traditional engineering positions such as in the pharmaceutical, environmental, or chemical industries.

Freshman and Sophomore Years

See Area III in *General Core Curriculum* and/or consult department.

	HOURS
AREA I HUMANITIES AND FINE ARTS	20
ENG 101 and 102 or 105H	5
SPC 108 or 218H	5
Choose from the following: CML 221, 222; ENG 231G, 232G, 233G, 234G	5

AREA II MATHEMATICS AND NATURAL SCIENCES	20
CHM 121 and 121L, 122 and 122L	10
MAT 253	5
PCS 137-137L	5

AREA IV COURSES RELATED TO MAJOR	30
BIO 103-103L or 107-107L and BIO 104-104L or 108-108L	10
EGR 215	5
MAT 254, 255	10
PCS 138-138L	5

Junior and Senior Years

BCH(BIO) 310	5
CHM 240, 240L	5
EGR 109, 190, 250, 292, 295, 350, 355, 356, 373, 374, 380, 383, 392, 420 or 430, 490, 492AB	61
MAT 358	5
MIB 350-350L	5

Areas of Emphasis in Biomechanics, Bioprocessing, Environmental: Contact the department for requirements.

BIOLOGICAL SCIENCE

This major provides preparation for graduate or professional study as well as for employment in business, industry, or government. Both basic and applied courses in the biological sciences are included in this curriculum.

Freshman and Sophomore Years

See Areas I and III in *General Core Curriculum* and/or consult department.

HOURS

AREA II MATHEMATICS AND NATURAL SCIENCES	20
CHM 121 and 121L, 122 and 122L	10
MAT 116	5
PCS 127-127L	5

AREA IV COURSES RELATED TO MAJOR	30
BIO 107-107L, 108-108L	10
PCS 128-128L	5
Select from: AAE 211, 258; ADS 200-200L, 201-201L, 230; CHM 123 and 123L, 280 and 280L; CS 201-201L; ECL 100-100L; MAT 253, 253T; PCS 229-229L; PS 202-202L; STA 200	15

Junior and Senior Years

Required courses:	20
BCH(BIO) 310	5
BIO 370; BIO(CB) 330, 340, 380; BIO(GN) 460; ECL(BIO) 350 (any two)	10
BIO(GN) 320 or GEN 358	5
Upper division courses in the College of Agricultural and Environmental Sciences	25
Special requirements: CHM 240 and 240L, 241 and 241L; MIB 350-350L	15
With assistance of advisor, select 10 hours from the following courses: ADS 330, 331, 340; BIO 311, 371; BIO(CB) 331; BIO(GN) 321; CB 300-300L, 370-370L, 473; ECL (BIO) 351; ENT 374-374L; MAR 345-345L; PAT 353-353L; PS 375, 380-380L, 406-406L; VPH 310	10
Electives	20

CROP SCIENCE

Crop science is the study of plants which are used to produce food and fiber for humans and feed for animals. Modern crop science includes basic and applied courses in a diversity of study areas. The crop science major allows students flexibility in preparing for careers. Careful course selection in the first two years permits students to choose from numerous electives during their junior and senior years. Elective courses in genetics, chemistry, computer science, animal sciences, botany, economics, business, engineering, entomology, plant pathology, and other areas broaden the scope of education.

Practical Experiences

Many courses in the crop science major include laboratories in which students obtain experience related to their coursework. Internships provide practical experience in crop sciences, and students may arrange to receive course credits for internships. Part-time or full-time internships may be arranged with experiment stations, businesses, industries, or government agencies. Scientists in the Department of Crop and Soil Sciences offer work-study opportunities to students to assist in research. A special problems course in crop and soil science awards academic credit for experience in research. Leadership training is provided through the Agronomy Club and other campus activities.

Career Opportunities

Career opportunities for crop science graduates are diverse. Employment opportunities are found in agribusiness sales and service, education, financial institutions, government service, and farming. Specific areas of employment are agricultural business manager, agricultural chemical sales and promotion, agricultural extension agent, agricultural missionary, farmer, farm manager, international agriculturalist, herbicide specialist, industrial agronomist, and research technician.

Qualified graduates may elect to study for the M.S. or Ph.D. at the University of Georgia or at other universities. Undergraduate training in crop science provides a background in basic and applied sciences for graduate training in agricultural and related plant science fields.

Freshman and Sophomore Years

See Areas I and III in *General Core Curriculum* and/or consult department.

	HOURS
AREA II MATHEMATICS AND NATURAL SCIENCES	20
CHM 121 and 121L, 122 and 122L	10
MAT 116 or 253 or 253T	5
PCS 127-127L or 137-137L	5
AREA IV COURSES RELATED TO MAJOR	30
BIO 103-103L, 104-104L or 107-107L, 108-108L or BOT 121-121L, 122-122L	10
CHM 240 and 240L or 261 and 261L	5

CS 101-101L or 201-201L	5
CSS 201-201L	5
STA 200	5

Junior and Senior Years

Major courses: BOT 380-380L; CSS 305-305L, 330, 427 (2 hours), 434-434L, 459-459L; ENT 374-374L; GEN 358; PAT 353-353L	42
Electives related to major (choose 15 hours): CSS 369-369L, 391, 399, 404, 426, 435-435L, 440, 454-454L, 460; CSS(EGR) 458; CSS(MIB) 461-461L	15
Suggested electives (choose 10 hours): ADS 201-201L, 330, 331; BCH(BIO) 310; BOT 431, 465-465L, 483-483L; BOT(GGY) 476; CHM 241 and 241L, 280 and 280L, 395; GN 420; MAN 351; MAT 253 or 253T, 254 or 254T; MIB 350-350L; or other courses approved by advisor	10
Electives	23

Minor in Crop Science: Contact the department for requirements.

DAIRY SCIENCE

The thriving dairy industry in Georgia is an important segment of the agricultural economy. The modern industry requires personnel trained in business, economics, and management as well as the traditional dairy science courses. Courses of a more basic nature may be emphasized by students who desire careers in science-related fields or who wish to pursue graduate or professional study. This major is highly recommended for persons planning to enter a program of study in veterinary medicine.

Career Opportunities

The curriculum in dairy science prepares the student for a career in dairy farm operation as a manager or owner; in sales of equipment or feed; in field services with processing plants, feed manufacturers, breed associations, and marketing agencies; in college research and teaching; as county extension agents, vocational agriculture teachers, or research technicians.

Freshman and Sophomore Years

See Area I in *General Core Curriculum* and/or consult department.

HOURS

AREA II MATHEMATICS AND NATURAL SCIENCES 20

CHM 121 and 121L, 122 and 122L	10
MAT 116	5
PCS 101 or 127-127L	5

AREA III SOCIAL SCIENCES 20

AAE 258 or ECN 106	5
HIS 251 or 252	5
POL 101 or 105H	5
Elective (100- or 200-level)—see General Core Curriculum	5

AREA IV COURSES RELATED TO MAJOR 30

ADS 200-200L, 201-201L	7
BIO 103-103L, 104-104L or 107-107L, 108-108L	10
CHM 240 and 240L or 261 and 261L	5
CSS 201-201L	5
Elective approved by advisor	3

Junior and Senior Years

ADS 311, 326, 330, 331, 333, 340, 342, 362, 381, 382, 391A; VPH 310	41
Select one from ADS 360-360L, 361-361L, 363	4
Electives	45

Electives will be chosen with the assistance of an advisor depending on student's interest in production, education, science, pre-veterinary medicine, or agribusiness.

Minor in Dairy Science: Contact the department for requirements.

ENVIRONMENTAL ECONOMICS AND MANAGEMENT

The environmental economics and management major prepares students for public and private positions in natural and environmental resource analysis and management. EEM majors are trained to understand and appreciate the non-economic aspects of resource and environmental problems, including social, ecologic, physical, and legal considerations. EEM majors can serve effectively as members of interdisciplinary teams involved in resource and environmental management, planning, and analysis. An EEM major is designed for individuals who desire to "make a difference" when it comes to wise, efficient, and productive management of public and private natural and environmental resources.

Practical Experiences

As EEM majors, students will receive strong training in economic theory, resource economics, environmental economics, and quantitative decision-making techniques. Students will learn how to apply theory and techniques to "real world" resource and environmental problems. As part of the core curriculum, students take courses in physical science, ecology, environmental health, management, and law. These and other courses provide students with the background necessary to work effectively with the variety of professionals from many fields involved in resource and environmental management.

Under the guidance of a faculty advisor, students may choose to specialize in a particular area of natural and environmental resource management, including water resource management, conservation, regional or community development, or management of public or private resources.

As part of the degree program, students may participate in practical internships with public or private resource and environmental management organizations and firms.

Career Opportunities

The linkages between economic activity and natural and environmental resources will be a major local, national, and global issue of concern in the coming decades. Natural resource and environmental problems create a demand for individuals who can offer alternative solutions to these problems. Government job opportunities currently include management, planning, and analysis positions with federal, state, and local government agencies. Private company opportunities include similar positions with utility companies, banks, consulting firms, and resource management companies. An EEM major also provides an excellent foundation for work on an advanced degree in natural resource and environmental management. An advanced degree may lead to a teaching, research, or public service career at a college or university, law school, or a position with a private research company.

Freshman and Sophomore Years

See Area I in *General Core Curriculum* and/or consult department.

HOURS

AREA II MATHEMATICS AND NATURAL SCIENCES 20

CHM 121 and 121L, 122 and 122L	10
MAT 116	5
PCS 101	5

AREA III SOCIAL SCIENCES 20

AAE 258 or ECN 106	5
HIS 251 or 252	5
POL 101 or 105H	5
Elective (100- or 200-level)—see General Core Curriculum	5

AREA IV COURSES RELATED TO MAJOR 30

BIO 107-107L	5
MAT 207, 253, or 253T	5
MAT 244, 254, or 254T	5
STA 200	5
Approved electives	10

Junior and Senior Years

Major (C grade or better required):
 AAE 306, 358-358L, 465; AAE 361-361L or FRS 471-471L; AAE 493 or FRS 582; CSS 305-305L or CSS(FRS) 306-306L; ECL (BIO) 350; EHS 306; ENG 359 or MAN 201 45

Major Related Electives (C grade or better required): Select from a list of specified courses in AAE, AGR(ETH), ANT, CSS, ECL(ANT/IDS), ECN, EGR, EHS, ET, FIN, FIN(ECN), FRS, GGY, LAR, LAR(BOT), MAN, MKT, MS, PHY, PHY(ETH), POL, RE, RE(LS), REC, SOC, STA 30
 Electives 15

At least 20 hours of coursework must be 400-level or above.

quality control, industrial hygiene, occupational health and safety, and a variety of other activities by a significant number of agencies and commercial concerns.

The need for environmental health scientists in Georgia is increasing and employment, promotional, and professional opportunities for academically qualified personnel are increasing proportionately. The demand for trained environmental health scientists, however, is not restricted to the state of Georgia. Due to the limited availability of college training programs for this field, numerous other states rely upon the resources of the University of Georgia for graduates in this subject matter area. Students successfully completing the program of study receive the Bachelor of Science in Environmental Health (B.S.E.H.) degree. Students may pursue their interests in the areas of environmental protection, industrial hygiene, or public health. The degree program is nationally accredited and is the only undergraduate environmental health program in Georgia.

The program outlined below is inter-departmental in nature and utilizes the available courses and special facilities of many departments. It should be emphasized that the first two years of the program can be completed at most junior colleges. A minimum 2.3 grade point average is required for students who transfer into the program. The decision for admission to the EHS program is made by an EHS faculty committee based on the student's qualifications and availability of space and resources.

Freshman and Sophomore Years

See Area I in *General Core Curriculum* and/or consult department.

HOURS

AREA II MATHEMATICS AND NATURAL SCIENCES 20

CHM 121 and 121L, 122 and 122L	10
MAT 116	5
PCS 127-127L	5

AREA III SOCIAL SCIENCES 20

AAE 258, ECN 106, or ECN 107	5
HIS 251 or 252	5
POL 101	5
PSY 101 or SOC 105	5

ENVIRONMENTAL HEALTH SCIENCE

Environmental health scientists are in demand by private industries, consulting firms, governmental agencies, and institutions. A wide range of opportunities for employment exist in the specialized programs within corporate environmental and occupational health departments, public health agencies, solid and hazardous waste management, general sanitation engineering, and pollution control. Environmental health scientists are employed in programs of water and air pollution control,

AREA IV COURSES RELATED TO MAJOR		30
BIO 107-107L, 108-108L	10	
CHM 240 and 240L, 241 and 241L	10	
PCS 128-128L	5	
STA 200	5	

Junior and Senior Years

Required courses:	45
CB 221-221L	5
EHS 201, 306, 380, 391A, 408, 415, 425, 449	30
MIB 350-350L	5
MMB 480	5

Special requirements: Environmental health science and closely related courses required with the approval of the advisor: BCH(BIO) 310; CHM 280 and 280L; CSS 305-305L; ECL(BIO) 350; EGR 448; EHS 326, 410-410L, 435-435L, 459-459L; ENT 365-365L; FRS 411; FS(EHS/MIB) 421-421L, 452-452L; GLY 422; HPB 445; MMB 422-422L 30

Electives	25
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ENVIRONMENTAL SOIL SCIENCE

Environmental soil scientists are in demand by governmental agencies, private industry, consulting firms and institutions. Opportunities for employment exist in various specialized programs within public agencies, such as the Environmental Protection Agency and the Soil Conservation Service, in such areas as land disposal of hazardous and other industrial and agricultural wastes, water pollution control, and soil conservation. The need for environmental scientists in Georgia and the nation is increasing rapidly with a proportional increase in employment, promotional, and professional opportunities for academically qualified personnel.

Freshman and Sophomore Years

See Areas I and III in *General Core Curriculum* and/or consult department.

HOURS

AREA II MATHEMATICS AND NATURAL SCIENCES		20
CHM 121 and 121L, 122 and 122L	10	
MAT 253 or 253T	5	
PCS 127-127L	5	

AREA IV COURSES RELATED TO MAJOR		30
BIO 107-107L, 108-108L or BOT 121-121L, 122-122L	10	
CHM 240 and 240L, 241 and 241L	10	
GLY 125-125L	5	
STA 200	5	

Junior and Senior Years

Required courses: CHM 123 and 123L, 280 and 280L; CSS 305-305L, 391, 427, 451, 460, 467; CSS(MIB) 461-461L; EHS 415; MIB 350-350L	51
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Electives related to major: CSS 454-454L, 468; CSS(EGR) 458; EGR 330; EHS 449; HOR(CSS) 437 12-15

Choose from the following science electives: AGR(ETH) 419; BCH (BIO) 310; CHM 381 and 381L, 395; CS 201-201L; CSS 201-201L, 399, 434-434L, 459-459L; ECL(BIO) 350; EHS 306, 459-459L; ENT 463-463L; ET 210, 328; FRS 411; GGY 410, 418; GLY 320, 321, 405, 422; PCS 128-128L; SOC 240; TMI 315 12-15

Electives	9-15
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Minor in Environmental Soil Science:
Contact the department for requirements.

FOOD SCIENCE

The value of the food processing industry is about a hundred billion dollars in the United States alone, a value that is approximately four times larger than the next largest manufacturing industry. There is a constant demand for college graduates, both men and women, with training in food science and technology. This demand is created by the high percentage of foods marketed in processed form rather than as fresh or raw products. Improvements and new developments are the lifeblood of the American competitive system. Consequently, the food and related industries, such as the packaging industry, employ many food technologists.

Curriculum

The Department of Food Science and Technology offers both undergraduate and graduate instruction designed to give basic and technical training in preparation for work in such industries as meat and poultry pro-

cessing, canning, freezing, pickling, preserving, and the preparation and preservation of specialty food products. Superior students are encouraged to undertake graduate study since great opportunities are now open to food scientists with advanced degrees.

Career Opportunities

Opportunities open to graduates in the food or allied industries include research; development and production work; technical sales within the food industry or in closely related areas such as the container and equipment manufacturing fields; extension work; research work in experimental stations or in other branches of government; food consulting and promotional work with public or private utilities.

Freshman and Sophomore Years

See Areas I and III in *General Core Curriculum* and/or consult department.

	HOURS
AREA II MATHEMATICS AND NATURAL SCIENCES	20
CHM 111 and 111L*, 112* and 112L* or 121 and 121L, 122 and 122L	10
MAT 116*, 253, or 253T	5
PCS 101* or 127-127L	5
AREA IV COURSES RELATED TO MAJOR	30
BIO 103-103L, 104-104L	10
CHM 240 and 240L or 261* and 261L*	5
STA 200	5
Electives	10

Junior and Senior Years

Required courses: FS 315, 367, 409-409L, 414-414L, 415-415L, 458-458L, 459-459L; FS(MIB/ADS) 407-407L; MIB 350-350L	37
Major electives: These courses are selected based on the interests of students. See advisor for approval.	35
Electives	28

Minor in Food Science: Contact the department for requirements.

*These courses may be used when approved by advisor.

HORTICULTURE

The Horticulture Department offers majors leading to the B.S.A. degree for students interested in all aspects of horticulture including landscape and grounds management and turfgrass. Students may select from three majors within the department. The horticulture major provides the education necessary for a career in production, sales, etc. of horticultural commodities (fruits, vegetables, indoor and outdoor ornamental plants, turfgrasses, and flowers). The landscape and grounds management major prepares students for careers in landscape and lawn installation and maintenance. The turfgrass management major prepares students for careers in golf course, sports, and residential turfgrass management.

The horticulture curriculum is designed to instruct and educate students in the application of basic principles to the propagation, culture, production, and postharvest physiology of ornamental plants, turfgrasses, fruits, vegetables, and flowers. The curriculum has the flexibility to allow a student to select courses in turf management (the culture and management of turfgrasses on golf courses, recreational areas, and home lawns); floriculture/woody ornamentals (including the use of plants indoors for aesthetic, therapeutic, as well as pollution abatement purposes); and fruit and vegetable production and management.

Career Opportunities

A student who carefully selects his/her courses and successfully completes the curriculum can achieve the education and academic requirements necessary to enter any one or more of the following fields: management, production, marketing, or postharvest handling of vegetables, fruits, flowers, ornamental plants, or turfgrasses; salesperson and/or technical advisor with a commercial firm; field advisor or manager of greenhouses, parks, arboretums, botanical gardens, garden centers, and golf courses; teacher in high schools or technical schools; horticultural journalist; agricultural extension agent or governmental employee. A student may select a curriculum for entrance into graduate school, which prepares for a career in horticultural research and/or teaching at the college or university level.

Curriculum

The curriculum is designed with considerable flexibility so that the student can achieve a B.S.A. degree with emphasis on any area of horticulture. Through the judicious selection of electives, students can broaden their background in business administration, management, education, journalism, or any of the physical or biological sciences.

Freshman and Sophomore Years

See Areas I and III in *General Core Curriculum* and/or consult department.

HOURS

AREA II MATHEMATICS AND NATURAL SCIENCES	20
CHM 111 and 111L, 112 and 112L or 121 and 121L, 122 and 122L	10
MAT 116	5
PCS 101, 127-127L, or 128-128L	5

AREA IV COURSES RELATED TO MAJOR **30**

AAE 211 or ACC 116	5
BIO 103-103L, 104-104L or BOT 121-121L, 122-122L	10
Electives	15

Junior and Senior Years

Required courses: BOT 380-380L or HOR 304; CSS 305-305L, 434-434L; ENT 374-374L; HOR 301, 302, 362, 370A, 400, 411, 421; PAT 353-353L	52
Electives approved by advisor	38

Minor in Horticulture: Contact the department for requirements.

LANDSCAPE AND GROUNDS MANAGEMENT

More than ever, people desire attractive, functional environments for indoor and outdoor activities. The landscape and grounds management curriculum is designed to educate students in the application of basic principles to the installation and management of environmentally sound landscapes, grounds, and interiorscapes. These functions include wetlands reclamation, replacement, and enhancement; minimization of the impact of agricultural chemicals on the environment; landscape waste management; and water quality and conservation in the home

landscape and grounds, on the golf course, at amusement parks, commercial buildings and offices, and outdoor athletic facilities. A graduate with the landscape and grounds management major will have the education necessary for employment in this growing and prosperous profession.

Career Opportunities

Well-managed, environmentally sound landscapes are showing increased demand in the '90s. *Money Magazine* (June 1990) predicts the landscape maintenance industry to be one of the 25 "fast track careers" of the '90s. The commercial landscape industry of Georgia is one of the largest in the southeast with billings in excess of \$350 million. An education in landscape and grounds management will provide the skills to own a landscape contracting or grounds management business or to work at the management level in established firms. Graduates may even work for world renown amusement parks such as Disney World, beautiful public gardens such as Callaway Gardens, a world renown golf course such as Augusta National, or well-known athletic facilities such as Sanford Stadium. Opportunities are also available in sales, government, agricultural extension, and other agencies. A B.S.A. in landscape and grounds management allows continuation of education in graduate school which could lead to a research and/or teaching career at a major university or in industry. Opportunities abound for skilled landscape professionals.

Curriculum

The curriculum is designed to prepare a student with all of the skills necessary to be a landscape professional and to continue education in graduate school if desired. Through the judicious selection of electives, students may broaden their education into the biological or physical sciences, business administration, management, vocational education, or other areas of interest.

Freshman and Sophomore Years

See Areas I and III in *General Core Curriculum* and/or consult department.

HOURS

AREA II MATHEMATICS AND NATURAL SCIENCES 20

CHM 111 and 111L, 112 and 112L or 121 and 121L, 122 and 122L	10
MAT 116	5
PCS 101, 127-127L, or 128-128L	5

AREA IV COURSES RELATED TO MAJOR 30

AAE 211	5
BIO 103-103L and 104-104L or BOT 121-121L and 122-122L	10
ET 210	5
Electives	10

Junior and Senior Years

Required courses: AAE 304 or 310, 398; BOT 380-380L or HOR 304; CSS 305-305L, 369-369L, 434-434L; ENT 374-374L; HOR 350, 362, 370AB, 400, 409, 411, 421; PAT 353-353L	74
Electives approved by advisor	16

PLANT PATHOLOGY

A student in the Department of Plant Pathology may major in either plant pathology or plant protection and pest management. The student choosing the plant pathology major concentrates study in both the science and art of plant pathology. This includes basic training in the study of plant diseases with choices of specialization in fungal, viral, bacterial, and nematode diseases, or disease control. The plant protection and pest management major is designed to give the student multidisciplinary training essential for the recognition, management, and control of major plant pests, mainly disease organisms, insects, and weeds, with the minimum use of pesticides. This program also emphasizes the use of economics, computer science, and farm management.

The programs of study in either plant pathology or plant protection and pest management are broad enough to provide the training in the basic sciences that will enable graduates to take advantage of a variety of opportunities in agriculture and related industries and also to leave open the option of continued study for advanced degrees in graduate school. They are flexible enough to permit the student to explore a variety of special fields according to his or her interests. Following introductory courses, students may choose among advanced courses

in genetics, plant breeding, nematology, bacteriology, mycology, virology, crops pathology, and disease diagnosis and control.

Freshman and Sophomore Years

See Areas I and III in *General Core Curriculum* and/or consult department.

HOURS

AREA II MATHEMATICS AND NATURAL SCIENCES 20

CHM 121 and 121L, 122 and 122L	10
MAT 116	5
PCS 101	5

AREA IV COURSES RELATED TO MAJOR 30

BIO 103-103L, 104-104L or BOT 121-121L, 122-122L	10
Electives (approved by advisor)	20

Junior and Senior Years

Required courses (C grade or better required): PAT 353-353L, 406 ABC, 428-428L; PAT(BOT) 420-420L	21
Science Requirements: BOT 380-380L; CHM 240 and 240L, 241 and 241L; CSS 305-305L; ENT 374-374L; GEN 358 and MIB 350-350L	35
Science selections: Any three from AAE 258; BCH(BIO) 310; BOT 465-465L; CHM 123 and 123L; CSS 404, 434-434L; CSS(MIB) 461-461L	15
Electives related to major	10
Electives	9

Minor in Plant Pathology: Contact the department for requirements.

PLANT PROTECTION AND PEST MANAGEMENT

Freshman and Sophomore Years

See Areas I and III in *General Core Curriculum* and/or consult department.

HOURS

AREA II MATHEMATICS AND NATURAL SCIENCES 20

CHM 121 and 121L, 122 and 122L	10
MAT 116	5
PCS 101	5

AREA IV COURSES RELATED TO MAJOR **30**

BIO 103-103L, 104-104L or BOT 121-121L, 122-122L	10
Electives (approved by advisor)	20
<i>Junior and Senior Years</i>	
Required courses (C grade or better required): CSS 434-434L; ENT 374-374L; PAT 353-353L and 428-428L	20
Science requirements: AAE 258; BOT 380-380L; CHM 261 and 261L; CSS 201-201L, 305-305L; GEN 358; MIB 350-350L and STA 200 or equivalent courses	40
Electives related to major	20
Electives	10

POULTRY SCIENCE

Poultry is Georgia's largest agricultural industry. The agribusiness complex related to poultry in Georgia is a multi-million dollar industry and is the largest employer in the agricultural sector. Students who major in poultry science have excellent opportunities for employment and career advancement.

All students in the Department of Poultry Science are encouraged to obtain a well-rounded education in the humanities and social sciences as well as the biological, chemical, and physical sciences. They receive a minimum of 36 quarter credit hours of poultry science dealing with production, management, breeding, nutrition, anatomy and physiology, processing, and diseases. To complete their program of study, poultry science students may elect additional courses in either agribusiness or science. Fundamental education in agricultural business, marketing, finance, and management prepares students for entering the dynamic poultry industry in a wide variety of positions. In-depth courses in biological and agricultural sciences prepare students who aspire to careers in teaching, research, and development for entering graduate or professional schools.

Freshman and Sophomore Years

See Areas I and III in *General Core Curriculum* and/or consult department.

HOURS

AREA II MATHEMATICS AND NATURAL SCIENCES **20**

CHM 111 and 111L, 112 and 112L, or 121 and 121L, 122 and 122L (see advisor)	10
MAT 116	5
PCS 101 or 127-127L (see advisor)	5

AREA IV COURSES RELATED TO MAJOR **30**

BIO 103-103L, 104-104L or 107-107L, 108-108L (see advisor)	10
CHM 240 and 240L or 261 and 261L (see advisor)	5
PS 202-202L	5
A beginning microbiology course with laboratory	5
Electives	5

Junior and Senior Years

Major: AM 373; PS 360, 371, 372, 375, 379, 380-380L; PS(FS) 386	36
Special requirements: Elect 25 hours from major-related courses with the assistance of an advisor	25
Upper-division courses to be chosen with the assistance of an advisor dependent upon the student's interest	10
Electives	19

Minor in Poultry Science: Contact the department for requirements.

PRE-VETERINARY MEDICINE PROGRAMS

Most students pursuing a pre-veterinary medicine program of study choose the Animal Health major described on page 98. However, pre-veterinary medicine study may also be completed by enrollment in several other related majors such as Animal Science, Biological Science, Dairy Science, Environmental Health Science, or Poultry Science.

Admission to the University of Georgia College of Veterinary Medicine requires a rigorous program of undergraduate study in the basic sciences. Students are encouraged to plan their program of undergraduate study carefully so that they will receive a Bachelor of Science in Agriculture whether or not they are later admitted to the College of Veterinary Medicine.

The College of Veterinary Medicine has a limited enrollment policy and selects for admission only about one-half of its applicants. Selection of the best qualified applicants for admission is the responsibility of a faculty committee within the College. The committee considers applicants who have met the minimum academic requirements including at least three years of study, or its equivalent, at an accredited college.

Students normally apply for admission to the College of Veterinary Medicine during their third year of study in the College of Agricultural and Environmental Sciences pre-veterinary medicine program.

Students not admitted to Veterinary Medicine may continue their study in the College of Agricultural and Environmental Sciences for a fourth year to complete the requirements for the B.S.A. degree in any major they choose. Several degree programs within the College are compatible with the pre-veterinary medicine program.

The program of study outlined below will meet the dual objectives of completing the requirements for admission to the College of Veterinary Medicine and the requirements for a Bachelor of Science degree in the College of Agricultural and Environmental Sciences. Students should contact the Associate Dean for Academic Affairs, College of Veterinary Medicine, for a more detailed description of requirements for admission to that college.

Freshman and Sophomore Years

See Areas I and III in *General Core Curriculum* and/or consult a pre-veterinary medicine advisor.

	HOURS
AREA II MATHEMATICS AND NATURAL SCIENCES	20
CHM 121 and 121L, 122 and 122L	10
MAT 116	5
PCS 127-127L	5
AREA IV COURSES RELATED TO MAJOR	30
BIO 107-107L, 108-108L	10
CHM 240 and 240L, 241 and 241L	10
PCS 128-128L, 229-229L	10

<i>Junior Year</i>	47
Additional courses required for entrance into the College of Veterinary Medicine:	
BCH(BIO) 310	5
Advanced biological science: Select from BIO(CB) 330, 340; BIO(GN) 320; CB 300-300L; GEN 358; MIB 350-350L; PS 372, 380-380L	10
PEB	2
Courses to meet requirements for a selected major in the College of Agricultural and Environmental Sciences	30

Senior Year (if not previously admitted to the College of Veterinary Medicine)

Courses to meet the requirements for a selected major, chosen in consultation with advisor, to complete B.S.A. requirements.

TURFGRASS MANAGEMENT

Turfgrass management is the study of the science and culture of fine grasses that are used on golf courses, athletic fields, home lawns, and other areas requiring an attractive but functional groundcover. Increasing interest in outdoor recreational activities as well as aesthetically appealing landscaped areas has created a demand for professional turfgrass managers. The turfgrass management major at the University of Georgia is unique in that it is the only 4-year turf program in the United States that is jointly administered by two departments. The combined effort of the departments of Crop and Soil Sciences and Horticulture provide greater resources to students in terms of laboratories, teaching equipment, demonstration field plots, faculty expertise, and course offerings.

Career Opportunities

The turfgrass industry is one of the fastest growing industries in the United States. In Georgia, it is estimated at more than one billion dollars. Completion of the turfgrass management major will allow a student the opportunity to pursue a career in golf course, athletic field, park, school, and commercial grounds management. There are many openings in the relatively new chemical lawn care

industry as well as with sod production, lawn maintenance, and landscaping firms. Other opportunities include the need for well-trained individuals in the areas of turfgrass seed, chemical, and equipment sales and service. Some graduates have obtained employment in the irrigation design and installation segment of the industry, while others have found challenging careers in university research, private consulting, or with the Cooperative Extension Service. The current and future outlook for job availability is excellent. For example, two-thirds of the respondents of a recent nationwide survey of 4-year turf programs indicated between 2 to 4 jobs per graduating student. Almost 40 percent of the respondents also indicated that they expected job availability to increase over the next several years. In short, the future looks extremely bright for careers in turfgrass management.

Curriculum

The curriculum is designed for maximum flexibility that allows students the opportunity to select one of two paths depending on their interest and future goals. Both paths will enable students the ability to secure any of the jobs discussed above as well as to enter graduate school. Specifically, the curriculum educates students in the principles and applications of both applied and basic sciences necessary for the successful establishment and maintenance of fine turfgrass areas. Students completing the turfgrass management curriculum will be knowledgeable in all aspects of plant and soil science. Particular emphasis is placed on learning environmentally sound strategies for controlling common turfgrass pests such as weeds, insects, and diseases. A careful balance of applied and basic sciences with courses in economics, business management, and accounting combined with on-the-job training opportunities will prepare students for an exciting career in the turfgrass/landscape industry.

Freshman and Sophomore Years

See Areas I and III in *General Core Curriculum* and/or consult department.

	HOURS
AREA II MATHEMATICS AND NATURAL SCIENCES	20
CHM 121 and 121L, 122 and 122L	10
MAT 116	5
PCS 127-127L, 128-128L, 137-137L, or 138-138L	5
AREA IV COURSES RELATED TO MAJOR	30
AAE 211 or ACC 110	5
BIO 103-103L, 104-104L or BOT 121-121L, 122-122L	10
CHM 261 and 261L	5
CS 201-201L	5
CSS 201-201L or HOR 200	5

Junior and Senior Years

Required courses: BOT 380-380L; CSS 305-305L, 369-369L, 434-434L, 479; CSS(ENT) 327; CSS 459-459L or HOR 411; ENT 374-374L; GEN 358; HOR 370AB, 409; PAT 353-353L, 357-357L

63

Courses required for major in Crop and Soil Sciences

27

Required courses: CSS 311, 427

Choose 5 hours from the following: AAE, ACC, FIN, MAN

5

Choose at least 15 hours from the following: AAE 398; CSS 391, 399, 426, 435-435L, 440; ENT 463-463L; GGY 120-120L

15

Electives

3

Courses required for major in Horticulture

27

Required courses: AAE 398; ET 350, 360; HOR 304, 400

16

Electives

11

Minor in Turfgrass Management: Contact departments for requirements.

COURSES OF INSTRUCTION

Agricultural and Applied Economics (AAE)

The prefix AAE supersedes the prefix AEC. Students may not receive credit for a given numbered course taken under both the AAE and AEC designations.

Contact Person: Dr. Robert N. Shulstad, 542-2481

201.(AGR) Social Dynamics of Agriculture and Rural Economies. 5 hours.
See AGR 201. (Offered spring quarter.)

211. Agribusiness Accounting. 5 hours. Four lectures and one 2-hour lab period.
A survey of accounting for agribusiness firms with emphasis on financial statement preparation and analysis of accounting information for managerial purposes. Special emphasis is given to problems of income measurement and asset valuation for agricultural production firms. (Offered fall and winter quarters.)

258. Economics of Agriculture: Theory of the Firm. 5 hours.
Elementary principles of economics as applied to decision making in agricultural production and distribution, prices, interest and credit, demand and supply, and comparative advantage. (Offered every quarter.)

301. Farm Organization and Management. 5 hours.
Prerequisite: AAE 258 or permission of department.
A scientific approach to the study of individual farm programs for the purpose of determining methods to be used for increasing farm income. (Offered winter quarter.)

303-303L. Computer Applications in Agribusiness. 5 hours. Four lectures and one 2-hour lab period.
Applications of computer technology for the solution of management, record keeping, resource allocation, inventory control, financial and marketing problems. Computer applications based on agricultural economic principles will be emphasized. Hands-on computer assignments will be provided in lab sessions. (Offered winter quarter.)

304. Economics of Agricultural Marketing. 5 hours.
Prerequisite: AAE 258 or permission of department.

A general course in marketing farm products describing and analyzing marketing functions to have a comprehensive understanding of the principles of agricultural marketing. (Offered spring quarter.)

306. Principles of Resource Economics. 5 hours.
Prerequisite: AAE 258 or ECN 107.

Analysis of basic theoretical concepts and analytical tools necessary to evaluate resource use, allocation, and policy. Emphasis is placed upon theoretical applications to natural, rural, and agricultural resources which impact both public sector and private sector economic activities. (Offered fall and winter quarters.)

310. Food and Fiber Marketing. 5 hours.
Prerequisite: AAE 258

Foundation for understanding all basic concepts of marketing food and fiber and related services and for making essential marketing decisions; approaches food and fiber product marketing as being individual and organizational activities aimed at facilitating and expediting exchanges within a set of dynamic environmental factors. (Offered fall quarter.)

340. Introduction to Agricultural Policy. 5 hours.
Prerequisite: AAE 258 and ECN 107 or permission of department.

Domestic and international government policies affecting agriculture, agribusinesses, and rural economies. Policy alternatives aimed at solving economic and environmental problems of the food and agricultural sector are identified and evaluated. (Offered spring quarter.)

351. Agricultural Credit. 5 hours.
Prerequisite: AAE 258 or permission of department.

An application of the techniques and principles of finance of the farm firm and a study of needs, sources and problems associated with credit and capital use among individual farm business units.

358-358L. Intermediate Economic Principles. 5 hours. Four lectures and two 1-hour lab periods.
Not open to students with credit in AEC 458 or ECN 405.

Prerequisite: AAE 258 and MAT 244.
Competitive and imperfect markets in the allocation of consumer goods and input factors in the free enterprise economy. (Offered fall and spring quarters.)

361-361L. Applied Econometrics. 5 hours. Four lectures and one 2-hour lab period.
Not open to students with credit in AEC 461.
Prerequisite: AAE 358-358L and 303-303L or equivalent and STA 200.

Basic applied econometric analysis, including simple regression analysis, hypothesis testing,

model selection, and data collection techniques. Applications are an integral part of the course, with students using computers to solve problems common in agricultural and environmental sciences. (Offered winter quarter.)

369. Agribusiness Finance. 5 hours.

Not open to students with credit in AEC 469. Prerequisite: AAE 258 and 211 or ACC 110 or permission of department.

Financial concepts and analysis related to agribusiness firms, including analysis based on financial statements, business and financial risk, valuation, and capital budgeting. (Offered fall and winter quarters.)

391. Agribusiness Internship. 5 hours.

Prerequisite: Junior standing and permission of department.

This course provides educational experience in the economics of management of a farm or agribusiness firm. (Offered every quarter.)

392. Environmental Economics and Management Internship. 5 hours. Repeatable for maximum 10 hours credit.

Not open to students with credit in AAE 391. Educational experience gained while performing internship duties for a natural resource or environmental management agency, organization, or firm. (Offered every quarter.)

398. Introduction to Agribusiness Management. 5 hours.

Not open to students with credit in AAE 498. Prerequisite: AAE 211 and 258.

Managerial concepts, procedures, and techniques in agribusiness management. Techniques of organization, staffing, directing, and controlling functions of management. (Offered winter quarter.)

402. Advanced Farm Organization and Management. 5 hours.

Prerequisite: AAE 301 or permission of department.

Analysis of economic facts of individual farm plans and formation of economic models which postulate optimum allocation of land, labor, and capital as guides for maximum revenue.

404-404L. Quantitative Approaches to Agribusiness Management. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: AAE 303-303L and STA 200 or equivalent.

Agribusiness decision making and forecasting using probabilities and simulation. (Offered spring quarter.)

405. Agribusiness Law. 5 hours.

Not open to students with credit in AEC 305. Prerequisite: AAE 258 or equivalent.

A survey of legal principles as they apply to agribusiness, directed toward making students aware of rights and obligations of agribusiness firms. The materials should enable students to recognize and avoid legal problems, and effectively utilize legal counsel. (Offered winter quarter.)

421. Production Economics: Theory with Applications. 5 hours.

Prerequisite: AAE 358-358L.

The application of fundamental economic principles in determining efficient adjustments in agricultural resource use consistent with economic growth, and changing technology and economic conditions. (Offered fall quarter.)

451. Farm Appraisal. 5 hours.

Prerequisite: AAE 258 or permission of department.

An application of the methods of appraisal to farm property. A study of the factors influencing farm land and building values. Relationship of land use, soils, crops, livestock, buildings, and other factors to farm value. (Offered fall quarter.)

465. Environmental Economics. 5 hours.

Not open to students with credit in AAE 460. Prerequisite: (AAE 258 and 306) or permission of department. Corequisite: AAE 358-358L or permission of department.

Economic theory and methods applied to environmental problems and policies. Policies affecting individual and business decisions about environmental quality, policy formation and incentive-based solutions; alternatives for reform evaluated for political and economic acceptability. (Offered winter quarter.)

471. Rural Economic Development and Growth. 5 hours.

Prerequisite: AAE 258 or permission of department.

The relationship of inputs and outputs between agriculture and agricultural businesses; analysis of factors affecting development and economic growth in developing areas. (Offered winter quarter.)

476. Agricultural Prices. 5 hours.

Not open to students with credit in AEC 467. Prerequisite: AAE 358-358L or permission of department.

Price theory and statistical techniques in the analysis of agricultural commodities and food/fiber product price behavior. (Offered winter quarter.)

480-480L. Water Resource Economics. 5 hours. Four lectures and two 1-hour lab periods.

Prerequisite: AAE 258 or equivalent.

A study of the economic aspects of the use, supply, development and management of water resources with special emphasis on river basin and project planning, benefit-cost analyses, water

demands, and multiple use management of water resources. (Offered spring quarter.)

487. (FIN) Commodity Markets. 5 hours.

Prerequisite: Permission of department.

Development, functions, and importance of commodity markets, principles and mechanics of trading commodities on future markets. Includes study of speculation, hedging, and roles of commission houses, commodity exchanges, and clearing-houses. Analysis of technical and fundamental trading theories and use of future contracts as instruments for financing business activities. (Offered fall and winter quarters.)

493. Environmental Law and Governmental Regulation. 5 hours.

Prerequisite: AAE 258 or permission of department.

Introduction to regulatory theory, externalities and market failures, definition of key regulations affecting agribusiness, overview of local government law, and delineation of environmental laws relating to agriculture. Current environmental issues are related to statutory, administrative, and regulatory authorities. (Offered spring quarter.)

496. International Agricultural Trade Policy. 5 hours.

Prerequisite: AAE 304 and 358-358L or equivalent.

Basic international trade theory, its application to agricultural commodity trade, and the effects of international relations and agricultural policy on world trade. (Offered fall quarter.)

498. Agribusiness Management. 5 hours.

Prerequisite: AAE 304 or 310 and 211 or ACC 110.

Provides a broad overview of the basic skills needed to be an effective manager of an agribusiness and to help the student achieve perspective on applying and integrating these skills into a workable approach to management; provides a step-by-step approach to the application of basic practical management skills in marketing, demand analysis, forecasting, finance, plant operations, and personnel. (Offered spring quarter.)

499. Special Topics in Agricultural and Applied Economics. 1-5 hours. Repeatable for maximum 5 hours credit.

Prerequisite: Permission of department.

Special problems in agricultural, environmental, or other applied economics analysis, decision-making, and policy studies. (Offered every quarter.)

Animal and Dairy Science (ADS)

Contact Person: Dr. Robert S. Lowrey, 542-1852

The prefix ADS supersedes the prefixes AS and DS. Students may not receive credit for a given numbered course taken under both the ADS and the AS or DS designations.

200-200L. Practicum in Animal and Dairy Science. 2 hours.

Care and techniques of farm animal management, handling, movement, restraint, and facilities needed for efficient and profitable animal production. (Offered fall, winter, and spring quarters.)

201-201L. Introductory Animal and Dairy Science. 5 hours.

Prerequisite: Must be first course in animal science or have permission of department.

A study of basic principles of breeding, feeding and management of beef cattle, dairy cattle, sheep, swine and horses. (Offered fall, winter, and spring quarters.)

230. Companion Animal Care. 3 hours.

Prerequisite: BIO 104-104L or equivalent.

A practical guide to companion animal care with emphasis on nutrient requirements, digestion and absorption, commercial feeds, reproduction, diseases, parasites, behavior, and the animal role in human health and disease. (Offered spring quarter.)

263. Pleasure Horse Management. 3 hours. Not open to students with credit in ADS 363.

A broad perspective of pleasure horse management will be presented. Topics will include conformation, breeds, nutrition, reproduction, diseases, behavior, and current issues as they apply to the horse industry. (Offered fall quarter.)

311. Introduction to Genetics of Livestock Improvement. 4 hours.

Not open to students with credit in AS 310 or DS 310.

Prerequisite: ADS 201-201L and BIO 103-103L or GEN 358 or BIO(GN) 320.

A study of the basic principles of genetics and statistics as related to the genetic improvement of farm animals. (Offered winter quarter.)

318. Meats Judging I. 3 hours.

Not open to students with credit in FS 370.

Detailed consideration of factors involved in grading and evaluating beef, pork, and lamb carcasses and primal cuts. Terminology to describe carcasses of the same species to detect differences among carcasses of the same species will be stressed. (Offered fall quarter.)

319. Meats Judging II. 3 hours.

Not open to students with credit in FS 371. Students will receive extensive training in evaluating factors involved in selecting and grading carcasses and wholesale cuts of beef, pork and lamb. Terminology required to describe carcasses of the same species in order to detect differences among carcasses and primal cuts will be stressed. The meats judging team which will represent the University in intercollegiate Meats Judging Contests will be selected from this course. (Offered winter quarter.)

320. Growth and Evaluation of Livestock. 3 hours.

Evaluation of livestock for carcass composition and selection for the breeding herd. (Offered fall quarter.)

321. Livestock Evaluation and Selection. 3 hours.

Prerequisite: ADS 320 or permission of department.

A course which deals with the selection of livestock for the breeding herd and for slaughter. From the students in this course will be chosen the team to represent the University in the annual Spring Intercollegiate Livestock Judging Contests. (Offered winter quarter.)

322. Advanced Livestock Evaluation and Selection. 3 hours.

Prerequisite: ADS 321 or permission of department.

A continuation of ADS 321. From the students in this course will be chosen the team to represent the University in the annual Fall Intercollegiate Livestock Judging Contests. (Offered fall quarter.)

323-323L. Light Horse Evaluation and Selection. 3 hours.

Prerequisite: ADS 320 or 363.

Evaluation of horses relating to riding qualities and anatomical structure. (Offered winter quarter.)

325-325L. Advanced Horse Evaluation and Selection. 3 hours.

Prerequisite: ADS 323-323L.

An evaluation of conformation, performance, and performance records. Teams will be selected to compete in intercollegiate horse judging contests. (Offered fall quarter.)

326. Dairy Cattle Evaluation and Selection. 3 hours.

A study of the principles and practices concerned with the evaluation of type in dairy cattle, with special emphasis on show ring judging. (Offered winter quarter.)

327. Advanced Dairy Cattle Evaluation and Selection I. 2 hours.

Prerequisite: ADS 326 or permission of department.

A continuation of ADS 326. The University will be represented at national intercollegiate judging contests in the Fall by students chosen from this course. (Offered spring quarter.)

328. Advanced Dairy Cattle Evaluation and Selection II. 1 hour.

Prerequisite: ADS 327 or permission of department.

A continuation of ADS 326 and 327. The University will be represented at national intercollegiate judging contests in the Fall by students chosen from this course. (Offered fall quarter.)

330. Fundamentals of Animal Nutrition. 4 hours.

Prerequisite: ADS 333 or permission of department.

A study of the fundamental principles of animal nutrition. (Offered fall and winter quarters.)

331. Feeds and Feeding. 4 hours.

Prerequisite: ADS 330 or permission of department.

A study of the composition and properties of the important feedstuffs and the application of the basic principles of nutrition in the use of these feedstuffs in the scientific feeding of farm livestock. (Offered spring quarter.)

332. Animal Nutrition and Feeding. 5 hours.

Not open to students with credit in ADS 330 or 331.

A study of the fundamentals of animal nutrition followed by feed identification and ration formulation. This course is designed for non-animal science majors; however, it is not intended to meet the nutrition course requirement for pre-veterinary medicine. (Offered spring quarter.)

333. Animal Metabolism. 3 hours.

Prerequisite: CHM 261 and 261L or 240 and 240L.

Metabolic pathways associated with the assimilation of nutrients with application to the role of these pathways in the growth and performance in animals of economic importance. (Offered fall quarter.)

340. Physiology of Reproduction in Farm Animals. 4 hours.

Prerequisite: ADS 201-201L and BIO 103-103L or higher.

A study of the physiology of reproduction in farm animals. (Offered winter quarter.)

342. Physiology of Lactation in Farm Animals. 3 hours.

Prerequisite: VPH 310.

A comparative study of the anatomy, physiology and function of the mammary gland of farm animals. (Offered spring quarter.)

360-360L. Beef Cattle Production and Management. 4 hours.

Prerequisite: ADS 311, 331, and 340.

Animal and Dairy Science

A study of the breeding, feeding, and management of beef cattle. (Offered spring quarter.)

361-361L. Swine Production and Management. 4 hours.

Prerequisite: ADS 311, 331, and 340.

A study of the breeding, feeding, and management of swine. (Offered fall quarter.)

362. Dairy Cattle Production and Management. 4 hours.

Prerequisite: ADS 311, 331, and 340.

A study of the effects of environment and its interactions with physiology and inheritance upon performance of the cow and the cost of producing milk. This includes the effects of climate, health, sanitation, forage systems, housing, equipment and waste management. (Offered fall quarter.)

363. Horse Production and Management. 4 hours.

Prerequisite: ADS 311, 331, and 340.

A study of the breeding, feeding, and management of horses. (Offered winter quarter.)

364-364L. Sheep Production and Management. 3 hours.

Prerequisite: ADS 311, 331, and 340.

A study of the breeding, feeding, and management of sheep. (Offered winter quarter.)

365-365L. (FS) Meat and Animal Evaluation. 5 hours.

See FS 365-365L. (Offered fall and winter quarters.)

370AB. Special Problems in Animal and Dairy Science. 2-5 hours each.

Prerequisite: Permission of department.

Individual study, readings, and research projects in laboratories or on experimental farms involving animal or meat-related topics. (Offered every quarter.)

381. Animal and Dairy Science Orientation. 1 hour.

Areas of specialization, with programs of study, course offerings, career opportunities and leaders in related Animal and Dairy Science businesses. (Offered fall and winter quarters.)

382. Animal and Dairy Science Seminar. 1 hour.

Topical discussion of current problems and scientific work in the various fields of animal science. (Offered fall, winter, and spring quarters.)

391ABC. Internship in Animal and Dairy Science. 2-6 hours each.

Prerequisite: Permission of department. (Offered every quarter.)

401. Issues in Animal Agriculture. 4 hours. Three lectures and one 2-hour lab period.

Prerequisite: ADS 360-360L or 361-361L or 362 or 363 or 364-364L.

Impact of livestock production on society and the environment; role of animal products in the human diet; ecological aspects of animal production, animal welfare, media relations. (Offered winter quarter.)

403-403L. (FS) Dairy Processing. 5 hours.

See FS 403-403L.

407-407L. (FS/MIB) Food and Dairy Microbiology. 5 hours.

See FS 407-407L.

411-411L. Experimental Methods in Animal Biotechnology. 5 hours.

Prerequisite: BCH(BIO) 310 or MIB 350-350L or permission of department.

An introduction to laboratory methods in molecular biology stressing recombinant DNA techniques. Experiments will include recombination, cloning, restriction analysis techniques and optional experiments chosen by students. (Offered spring quarter.)

415. Microbial Ecology of the Rumen. 5 hours.

Prerequisite: BCH 402 or MIB 409 or permission of department.

A detailed analysis of the rumen microbial ecosystem that will examine the biochemistry, ecology, nutrition, physiology, and taxonomy of rumen microorganisms. The symbiotic relationship between rumen microorganisms and the nutrition of the ruminant animal will be emphasized. Manipulation of rumen fermentation to maximize host-animal production will also be covered. (Offered winter quarter of odd-numbered years.)

420. Livestock Merchandising. 3 hours.

Prerequisite: ADS 360-360L or 361-361L or 362 or 363.

A study of the principles and activities involved in successfully promoting and merchandising livestock. Course will feature presentations by industry leaders in the field of livestock merchandising. A livestock auction will be held at the conclusion of the course to allow for application of acquired knowledge. (Offered fall quarter.)

441-441L. Applied Animal Reproductive Management. 5 hours.

Prerequisite: ADS 311, 331 and 340 and 360-360L or 361-361L or 362 or 363.

This course deals with management of reproduction in farm animals for efficient livestock production. Application of reproductive management principles associated with artificial insemination, embryo transfer, pregnancy detection, semen

collection and reproductive record management will be covered. (Offered fall and spring quarters.)

450-450L. Operant Conditioning and Training of Horses. 5 hours. Three lectures and two 3-hour lab periods.

Prerequisite: ADS 363.

The principles of operant conditioning and application of these principles to training horses. (Offered spring quarter.)

465. Advanced Livestock and Dairy Production. 4 hours.

Prerequisite: ADS 360-360L or 361-361L or 362 or 363.

Principles of applying dairy and livestock farm management including personnel management, production methods, quality control, farm facility design, records, and business methods to livestock and dairy farm enterprises. (Offered spring quarter.)

Agricultural Communications (AGC)

Contact Person: Dr. F. W. Williams,
542-1611

391. Applied Agricultural Communications Internship. 5 hours.

Prerequisite: Permission of department and junior or senior standing.

Course provides experiential learning in agricultural communications. (Offered every quarter.)

Agriculture (AGR)

Contact Person: Dr. F. W. Williams,
542-1611

101. Orientation to Agriculture. 1 hour.

A course designed to aid agricultural freshmen and transfer students in making adjustments to college life at the University. (Offered fall, winter, and spring quarters.)

201.(AAE) Social Dynamics of Agriculture and Rural Economies. 5 hours.

Major concepts for understanding socioeconomic changes in agriculture and rural economies. Emphasis will be given to such topics as population, industrial, environmental, and technological change with special consideration to the social implications of economic trends and policies as they affect agriculture and rural economies. (Offered spring quarter.)

300. Agricultural Leadership and Organizational Skills. 3 hours.

Prerequisite: Junior or senior class standing.

Basic problem solving, group process and leadership techniques needed when working with agricultural procedures and related personnel on problems of a non-technical nature. (Offered winter quarter of odd-numbered years.)

315. Topics in International Agriculture. 1-3 hours. Repeatable for maximum 3 hours credit.

Prerequisite: Junior standing or permission of department.

Individual or group study through reading and/or research of selected topics in international agriculture. (Offered every quarter.)

391. International Agriculture Internship. 5 hours.

Prerequisite: Permission of school.

Placement with an international public or private organization in a foreign country. If located near a university, student may also enroll in a course. (Offered every quarter.)

419. (ETH) Agricultural Ethics. 2 hours.

Discussion of ethical issues in agriculture. Among the topics considered are obligations towards the land, animal rights, sustainability of world agricultural resources, and world hunger. (Offered spring quarter.)

497H. Directed Reading and/or Project. 5 hours.

Prerequisite: Senior standing.

This course affords Honors students of upper division standing the opportunity to engage in individual study, reading, or research projects under the direction of a project director. (Offered every quarter.)

499H. Honors Thesis. 5 hours.

Prerequisite: Senior standing and permission of school.

This course provides the opportunity for an Honors student to write an Honors thesis under the guidance of a faculty member. (Offered every quarter.)

Crop and Soil Sciences (CSS)

The prefix CSS supersedes the prefix AGY. Students may not receive credit for a given numbered course taken under both the CSS and the AGY designations.

Contact Person: Dr. Larry West, 542-0906

201-201L. Crop Science. 5 hours.

Prerequisite: BIO 104-104L or BOT 122-122L.

A fundamental course in crop science, including the major agricultural areas of the United States and emphasizing the crops of the Southeast. A study of the principles of production of agricultural

Crop and Soil Sciences

plants, including classification, morphology, reproduction, growth, and improvement. (Offered fall and winter quarters.)

305-305L. Principles of Soils. 5 hours.

Prerequisite: Two courses in freshman chemistry. Soil formation, physical, chemical, and biological properties of soils, commercial fertilizers, lime and organic matter; and soil management practices. (Offered fall, winter, and spring quarters.)

306-306L. (FRS) Soils and Hydrology. 5 hours.

Four lectures and one 2-hour lab period. Not open to students with credit in CSS 305-305L or FRS 311-311L.

Prerequisite: CHM 122 and 122L.

Soil formation, physical and chemical properties, soil-water interactions, hydrological processes, water balance in landscape, and soil and water quality. Emphasis on management of soil and water to minimize environmental contamination and maintain productivity. (Offered fall and spring quarters.)

311. Selected Topics in Turfgrass Management. 2 hours.

Turfgrass management systems and other related aspects of the turfgrass industry including career opportunities will be examined. Topics vary but include the use of turfgrass in our society, golf and athletic field design and construction, sod production, and the professional lawn care industry. (Offered winter quarter.)

327.(ENT) Weed and Insect Control in Turf. 2 hours.

Prerequisite: CSS 434-434L and ENT 374-374L and either CSS 311 or 369-369L or permission of department.

Weed and insect control for successful management of turfgrass. Characteristics of common turfgrass weeds and insects, proper use of herbicides and insecticides, control of grass and broadleaf weeds, and control of insects which feed on leaves, stems, and roots of turfgrasses. (Offered winter quarter of even-numbered years.)

330. Crop Management and Physiology. 5 hours.

Prerequisite: CSS 201-201L.

A study of crop growth and development. An emphasis will be placed on environmental stresses of crops and their relation to crop management. (Offered fall quarter.)

369-369L. Turfgrass Management. 5 hours.

Prerequisite: One course in biology or permission of department.

A study of turf grasses and growth requirements. The various operations, equipment, materials, and work program for the proper and efficient

maintenance and management of turf for golf courses and other specific uses. (Offered spring quarter.)

391. Agronomy Internship. 1-5 hours. Repeatable for maximum 5 hours credit.

Prerequisite: Three senior division agronomy courses and permission of department.

This course is designed to give interested and well-prepared students needed experiences in agronomic production, agribusiness, research, instruction and service organizations. (Offered every quarter.)

399. Special Problems in Agronomy. 1-5 hours. Repeatable for maximum 5 hours credit.

Prerequisite: Ten hours in agronomy courses 300 or higher and permission of department.

Research on agronomic problems conducted in laboratory, field or library; report required, directed by agronomy staff. (Offered every quarter.)

404. Plant Breeding. 5 hours.

Prerequisite: GEN 358.

Fundamental methods utilized in the science of plant breeding and the important role that breeding plays in crop and tree improvement. (Offered fall quarter.)

425-425L. (ENT/ET) Pesticide Management and Utilization. 5 hours.

See ENT 425-425L.

426. Forage Management and Utilization. 5 hours.

Prerequisite: CSS 201-201L.

Characteristics of forages; principles of forage establishment and management; relationships of forage chemistry and morphology to quality and utilization; principles of managing grazed pastures and of harvest and storage of forages. (Offered winter quarter.)

427. Agronomy Seminar. 1 hour, repeatable for maximum 3 hours credit.

Prerequisite: Junior or senior in College of Agricultural and Environmental Sciences. Two senior division courses in agronomy or allied field.

Seminar in topics related to farm crops and soils. Participation required for credit. Faculty participation encouraged. (Offered fall, winter, and spring quarters.)

434-434L. Principles of Chemical Weed Control. 5 hours.

Prerequisite: BOT 380-380L or equivalent, and CHM 261 and 261L.

A study of weeds and weed control methods in agronomic crops with emphasis on chemical weed control. Herbicides will be discussed with regard to chemical structure, selectivity, mode of action, and dissipation. (Offered fall quarter.)

435-435L. Weed Ecology and Biology. 3 hours.
Prerequisite: BIO 104-104L or BOT 122-122L.
A discussion of weed succession and development in crops, weed-crop interference, and reproduction of weedy species. Environmental and cultural effects on weed-crop interactions as well as systematic identification of weed seed, seedlings, and mature plants will be presented. (Offered fall quarter.)

437. (HOR) Heavy Metals in the Environment. 2 hours.
See HOR 437. (Offered winter quarter.)

440. Crop Ecology. 3 hours.
Prerequisite: CSS 201-201L and 305-305L or BOT 121-121L and CSS 305-305L.
World population and food production problems, origin, distribution and adaptation of crop plants as influenced by environment with emphasis on climatic factors. (Offered winter quarter.)

451. Contaminants in Soils. 5 hours.
Prerequisite: CSS 460 and 467 and CHM 123 and 123L and CHM 240 and 240L.
Adsorption-desorption, degradation-transformation, and transport processes affecting contaminants in soil and shallow groundwater. Integration of processes will be illustrated by studying various applications such as wetlands, landfills, septic systems, and leaching of agricultural chemicals. (Offered spring quarter.)

454-454L. Soil Morphology and Classification. 5 hours.
Prerequisite: CSS 305-305L and one other senior division course in geology, agronomy, chemistry, or forestry approved by department.
Morphological characteristics of soils, factors influencing these characteristics and classification of soils of the U.S. Several full-day field trips will be required at the student's expense (total cost about \$35). (Offered spring quarter.)

458. (EGR) Soil Erosion and Conservation. 5 hours.
Prerequisite: CSS 305-305L or EGR 325 and CSS 201-201L.
A study of erosion as an agricultural and environmental problem in the U.S. and worldwide: soil erosion mechanics, control of erosion on agricultural and urban land, effect of erosion on productivity, sediment as a pollutant, and modelling erosion processes. (Offered fall quarter.)

459-459L. Soil Fertility. 5 hours. Four lectures and one 2-hour lab period.
Prerequisite: CSS 305-305L.
Soil conditions affecting availability of plant nutrients; methods of determining soil fertility and

insufficiency of plant nutrients in soils, and interpretation of chemical and biological measurements as related to fertility maintenance and good soil management. (Offered fall quarter.)

460. Soil Physics. 5 hours.
Prerequisite: CSS 305-305L and MAT 253 and PCS 127-127L.
Physical properties, moisture relations, and methods of physical analysis of soils. (Offered winter quarter.)

461-461L. (MIB) Soil Microbiology. 5 hours.
Two lectures and three 2-hour lab periods.
Prerequisite: MIB 350-350L or equivalent.
A survey of the microorganisms occurring in soil, carbon, nitrogen and mineral cycles, and the effect of microorganisms on soil properties. (Offered winter quarter.)

466. Soil and Plant Analysis. 3 hours.
Prerequisite: CSS 459-459L.
Current techniques and methods of interpretation of soil testing and plant analysis. (Offered spring quarter of odd-numbered years.)

466L. (HOR) Methods for Soil Testing and Plant Analysis. 2 hours.
See HOR 466L. (Offered spring quarter of odd-numbered years.)

467. Soil Chemistry. 5 hours.
Prerequisite: CSS 305-305L and CHM 280 and 280L.
The field of soil chemistry applies and extends the concepts of chemistry and physics in the investigation of problems related to the physical, chemical and biological characteristics of soil and their importance in the management of natural resources. (Offered fall quarter.)

468. Anthropogenic Organic Compounds in the Environment. 3 hours.
Prerequisite: CSS 467 and CHM 241 or 261.
A study of the processes controlling the mobility and fate of organic contaminants in aquatic and soil environments. (Offered fall quarter of even-numbered years.)

479. Environmental Stress of Turfgrass. 3 hours.
Prerequisite: CSS 305-305L and 369-369L and either BOT 380-380L or equivalent.
Effects of the environment on turfgrass growth and quality. Management strategies for overcoming high and low temperature stress, light and water deficits, soil modification, putting green construction, fertilization programs and pesticide/environmental issues. (Offered fall quarter.)

Agricultural Education (EAG)

Contact Person: Dr. Maynard J. Iverson,
542-1204

See Agricultural Education courses under
the College of Education.

Engineering (EGR)

The prefix EGR supersedes the prefixes AEN, BEN, and ES. Students may not receive credit for a given numbered course taken under both the EGR and the AEN, BEN, or ES prefixes.

Contact Person: Dr. E. Dale Threadgill,
542-1653

109. Engineering Graphics. 3 hours. One lecture and two 2-hour lab periods.

Standards and techniques for engineering drawings. Orthographic and isometric drawings through descriptive geometry. Computer graphics using AutoCAD software. (Offered fall, winter, and summer quarters.)

121. Engineering Measurements. 3 hours. Three 2-hour lab periods.

A study and evaluation of methods, instruments and computations related to leveling, taping, direction determination, curve layouts and land surveying. (Offered fall, spring, and summer quarters.)

190. Engineering Orientation. 1 hour.

Introduction to the engineering profession, engineering careers and employment trends; role of engineers in society, engineering ethics, professionalism, and engineering applications in biological systems. (Offered fall and spring quarters.)

215. Quantitative Engineering Methods. 5 hours. Prerequisite: MAT 254.

Computer programming and matrix and statistical techniques used in the analysis of engineering problems. (Offered fall and winter quarters.)

250. Engineering and Design of Biochemical Processes I. 3 hours.

Prerequisite: BIO 103-103L and CHM 121 and 121L and permission of department. Corequisite: MAT 358.

This course will cover four topics which demonstrate the interaction of biological sciences with engineering. Topics will be varied from quarter to quarter according to the following criteria: 1. subjects that are presented in advanced engineering course work, 2. current events in biotechnology,

3. related research programs at UGA. (Offered summer and fall quarters.)

292. Engineering Design Methodology. 3 hours. Not open to students with credit in AEN(BEN) 491. Prerequisite: EGR 190.

Corequisite: MAT 358 and PCS 137-137L. Engineering problem identification and solution using engineering fundamentals and procedures. (Offered fall and winter quarters.)

295. Engineering Economics. 3 hours. Not open to students with credit in ES 395. Prerequisite: MAT 253.

Engineering decision-making; financial and economic considerations; replacement and retention of capital assets; process evaluations. (Offered summer and fall quarters.)

300ABCDEF. Cooperative Work Experience. 1 hour each.

Prerequisite: 100 hours credit and assignment to the Co-op program in industries and agencies. Coordinated and planned work experience with cooperating industries or agencies. (Offered every quarter.)

305. Environmental Science and Engineering. 5 hours.

Prerequisite: MAT 253 and CHM 122 and 122L and (PCS 127-127L or 137-137L).

Atmospheric, aquatic, and terrestrial systems in the environment; effects of population, economic and energy growth, industrialization, urbanization, and natural hazards on the environment; the technology of environmental control and management. (Offered winter quarter.)

317. Soil Mechanics. 5 hours.

Prerequisite: MAT 253.

The fundamental mechanics of soil materials and application to foundation and earth structure design including: engineering classification of soils, compaction, consolidation, shear strength, lateral earth pressure, slope stability, and shallow foundations.

325. Soil and Water Engineering. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: EGR 121 and 356.

Engineering analysis and design of soil, water and plant systems for erosion and flood control, drainage, and irrigation. (Offered fall and winter quarters.)

330. Environmental Water Quality. 5 hours.

Prerequisite: MAT 116 and CHM 122 and 122L. The properties and characteristics of natural and waste-generated water for assessing environmental quality are described. Environmental impacts of point-source and non-point source pollution are discussed in terms of fundamental environmental processes. Physical, chemical, and

biological waste water treatment processes and systems are described with an overview of principles of environmental design. (Offered summer and fall quarters.)

350. Statics of Engineering. 5 hours.

Prerequisite: MAT 255 and PCS 137-137L.

Corequisite: EGR 109 and 215.

Force systems, resultants, equilibrium, friction, centroids, and moments of inertia. (Offered fall and winter quarters.)

351. Dynamics of Engineering. 5 hours.

Prerequisite: EGR 350.

A study of the motion of rigid particles and bodies under the action of balanced and unbalanced force systems. Includes force, mass, and acceleration, work and energy, and impulse and momentum methods. (Offered winter and spring quarters.)

355. Strength of Materials. 5 hours.

Prerequisite: EGR 350.

Elements of stress analysis, resistance, and design as applied to engineering materials and structures. (Offered winter and spring quarters.)

356. Fluid Mechanics. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: EGR 350 and MAT 358.

Elements and engineering applications of the laws of fluid behavior; statics, kinematics, and kinetics of fluids. (Offered fall and winter quarters.)

362. Engines and Power Transmission. 3 hours.

Two lectures and one 2-hour lab period.

Prerequisite: EGR 373.

Principles of engine operation and power transmission as applied to the farm tractor. Thermodynamics of combustion, engine testing, tractor transmissions, traction, and hydraulic systems. (Offered winter quarter.)

365. Machine Design I. 3 hours.

Prerequisite: EGR 355.

Application of principles of stress analysis and material properties to the design of mechanical components. Emphasis on designing for strength for both static and cyclic loading. (Offered fall and winter quarters.)

366. Machine Hydraulics. 5 hours.

Prerequisite: EGR 351.

The principles of operation and selection of hydraulic system components. The design of hydraulic systems and analysis of the systems. Illustrative applications will be slanted toward agricultural machinery. (Offered fall quarter.)

371. Agricultural Structure Design. 5 hours.

Four lectures and one 2-hour lab period.

Prerequisite: EGR 355.

Environmental, space, and structural design of farm structures including cost estimates and specifications. (Offered winter and spring quarters.)

373. Engineering Thermodynamics. 3 hours.

Prerequisite: MAT 255 and PCS 138-138L.

The first and second Laws of Thermodynamics and their engineering applications. Ideal gas law, non-flow and steady flow processes, power and reversed cycles, two-phase systems and the psychrometric chart. (Offered winter and spring quarters.)

374. Heat Transfer. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: MAT 358.

Corequisite: EGR 373.

The theory of heat transmission by conduction, convection, and radiation in the steady and unsteady states. The solution of engineering problems involving heat transfer. (Offered fall and winter quarters.)

380. Introduction to Mass Transport. 3 hours.

Prerequisite: EGR 215 and MAT 358.

Macroscopic and differential material balances and their engineering application in biological systems. (Offered winter quarter.)

381. Processing. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: EGR 356 and 374.

Methods of processing agricultural products, including cleaning, sorting, drying, and handling. (Offered winter and spring quarters.)

382. Management of Structural Environments for Agricultural Production. 3 hours. Two lectures and one 2-hour lab period.

Prerequisite: EGR 374.

Animal bioenergetics, environmental factors affecting animal productivity, heat and vapor flow in buildings, design of ventilation systems, heating and cooling loads for buildings. (Offered fall and winter quarters.)

383. Electric Circuits. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: MAT 255 and PCS 138-138L.

An introductory course including definitions of electric circuits parameters, Kirchoff's and Thevenin's Laws, circuits analysis, complex notations, mesh and nodal analysis resonance and polyphase circuits. Magnetic circuits and equivalent circuits will be emphasized. (Offered winter and spring quarters.)

384. Introduction to Microprocessor Systems. 3 hours.

Prerequisite: EGR 387.

Student will be introduced to microprocessor-based systems. Microprocessor architecture, number systems, and minimal assembly language

Engineering

programming will be covered. Potential for utilization in control system development is presented. (Offered winter quarter.)

385. Electrical Machines. 3 hours. Two lectures and one 2-hour lab period.

Prerequisite: EGR 383.

A laboratory analysis of the operating characteristics of transformers, alternators, polyphase motors, single phase motors and DC generators and motors. (Offered spring quarter.)

387. Engineering Electronics. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: EGR 383.

Electronic devices, including transistors, with particular emphasis on the design of circuits for small signal amplifiers, relays, electronic timers, photoelectric devices and solid state electronics. (Offered fall and winter quarters.)

392. Senior Seminar. 1 hour.

Engineering seminar required of engineering students. (Offered winter quarter.)

402. Special Topics in Engineering. 1-5 hours. Repeatable for maximum 5 hours credit.

Prerequisite: Permission of department.

Special problems in engineering design, analysis, or synthesis. (Offered every quarter.)

410. Introduction to Finite Element Analysis. 5 hours.

Prerequisite: MAT 358 and EGR 355 or permission of department.

Introduction of fundamental finite element theory for the solution of engineering problems. Geometric modelling techniques, element selection, and tests for accuracy with emphasis on problems in structural mechanics and elasticity. (Offered fall quarter.)

420. Design of Water Quality Control Systems. 5 hours.

Prerequisite: EGR 330 and MAT 253 or permission of department.

Engineering design of water treatment systems to include potable water supplies, municipal and agricultural-industrial wastewaters. Conventional and emerging technologies such as created wetlands, land application, and water reuse. (Offered spring quarter.)

425. Irrigation System Design. 5 hours.

Prerequisite: EGR 295 and 325.

The principles of soil-water-plant relationships, water supply, hydraulics, and economics as they apply to the design and management of irrigation systems. (Offered spring quarter.)

430. Physical Properties of Biological Materials. 5 hours.

Prerequisite: EGR 355 and BIO 108-108L or permission of department.

Mechanical properties of biological materials, modeling of load response, mechanical function of organisms, analysis, and problem solving. (Offered spring quarter.)

441. Electrical Systems and Controls. 3 hours. Two lectures and one 2-hour lab period.

Prerequisite: EGR 383.

The design of electrical systems for production and processing applications which involve electrical energy for light, heat, power, control, radiation and measurement with special emphasis on the design and utilization of control systems. (Offered winter and spring quarters.)

444. Water Management Systems. 5 hours.

Prerequisite: EGR 325.

An engineering design course utilizing the principles of hydrology, hydraulics, soil mechanics, erosion control, and economics in designing a multiple-use water management system for a rural and/or urban watershed. (Offered spring quarter.)

448. Instrumentation for Environmental Quality. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: Senior standing in agricultural engineering.

A study of the basic principles of operation of instrumentation used to measure physical variables which determine environmental quality. The engineering design and application of measuring systems for airborne particulates, gaseous contaminants, odor and noise will be emphasized. (Offered fall quarter.)

449. Design of Energy Systems. 5 hours.

Prerequisite: EGR 374.

The application of basic engineering sciences to the design of alternate energy systems. Particular emphasis is placed upon solar energy system design and also upon wind, biomass combustion, and low head hydro-electric energy systems. Energy storage and delivery systems will also be considered. (Offered spring quarter.)

455. Processing Plant Design. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: EGR 381.

Design of systems for processing agricultural products including plant layout and process analysis. (Offered winter quarter.)

458. (CSS) Soil Erosion and Conservation. 5 hours.

See CSS 458. (Offered fall quarter.)

465. Machine Design II. 3 hours.

Prerequisite: EGR 365.

Design and selection of parts and components for mechanical systems including bearings, shafts,

belts, chains, gears, clutches, brakes, fasteners, welds, and springs. (Offered winter quarter.)

466. Feedback Control Systems. 3 hours.

Prerequisite: MAT 358 and senior status in engineering or permission of department.

Development and solution of differential equations that describe systems encountered in engineering. Feedback principles will include block diagram representation and simplification, system transfer functions, system types and characteristics, stability criterion, root locus and frequency response methods of systems analysis and compensation, and control system design. (Offered winter quarter.)

470. Biomechanical Systems Design. 3 hours.

Prerequisite: EGR 351 and BIO 108-108L or permission of department.

Corequisite: EGR 430.

Analysis of human body motions; modeling of forces of the human musculoskeletal systems. (Offered winter quarter.)

471. Advanced Agricultural Structural Design. 5 hours.

Prerequisite: EGR 355 and EGR 371 and permission of department.

The design of agricultural and light frame structures utilizing techniques of hot-rolled steel, cold-rolled steel and wood design. (Offered spring quarter.)

480. Microprocessor Based Control Systems. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: EGR 384 and senior status in engineering program.

The necessary background to enable students to design and develop microprocessor based control systems is covered. Coverage of system architecture input/output problems and programming will equip student for system design. (Offered spring quarter.)

482. Advanced Structural Environments. 3 hours.

Prerequisite: EGR 382.

Management of structural environments including greenhouse equipment, sensors and systems for environmental control, air quality, heating and cooling systems, controlled atmosphere storage, models for air flow, animal and plant growth, and optimization of production. (Offered winter quarter.)

490. Engineering and Design of Biochemical Processes II. 5 hours.

Prerequisite: EGR 250.

Kinetics of enzyme catalyzed reactions, applied enzyme catalysis, metabolic stoichiometry and energetics, cell culture kinetics, biochemical transport phenomena, design and analysis of biological reactors. (Offered fall quarter.)

492AB. Engineering Design Project. 3 hours each.

Prerequisite: EGR 292 and permission of department.

Engineering design experiences for senior engineering students appropriate to their chosen area of interest. This will involve completion of an engineering design project under the supervision of a project director. (Offered fall, winter, and spring quarters.)

495. Engineering and Design of Biochemical Processes III. 4 hours. Three lectures and one 3-hour lab period.

Prerequisite: EGR 490.

Design and evaluation of unit operations used for biological processing including filtration, centrifugation, cell disruption, isolation, extraction, crystallization and chromatographic purifications. (Offered winter quarter.)

497. Bioprocess Monitoring and Control. 5 hours.

Prerequisite: EGR 380 and 490 or permission of department.

Concepts of biological process control; modern control techniques and the optimization of batch, fed-batch and continuous bioreactors, and other biological systems. (Offered spring quarter.)

Environmental Health Science (EHS)

Contact Person: Dr. Harold Barnhart,
542-2454

201. Orientation to Environmental Health. 1 hour.

Environmental health science, including environmental protection, industrial hygiene, toxicology, risk assessment, and public health. (Offered fall, winter, and spring quarters.)

306. Introduction to Environmental Health Science. 5 hours.

A broad study of the fundamentals of environmental health, covering environmental control agencies, elements of the environment suffering from pollution, environmental pollutants and their sources, effects of environmental pollution, methods of pollution control, and a general assessment of the costs of environmental pollution. (Offered fall, winter, and spring quarters.)

326. Shelter and Institutional Environments. 3 hours.

Prerequisite: EHS 306 and MIB 350-350L.

Environmental health practice associated with housing and special institutional environments. (Offered winter quarter.)

370A. Special Problems in Environmental Health Science. 1-5 hours. Repeatable for maximum 10 hours credit.

Prerequisite: Permission of department.

Course designed to give the undergraduate student the opportunity to carry out research or intensive study in a specialized area of environmental health under the direction of a staff member. (Offered every quarter.)

380. Environmental Health Seminar. 1 hour.

Selected topics in Environmental Health. Papers to be presented by students. (Offered fall, winter, and spring quarters.)

391ABC. Internship in Environmental Health Science. 5 hours each.

Prerequisite: Permission of department. (Offered every quarter.)

408. Environmental Air Quality. 3 hours.

Prerequisite: CHM 240 and 240L.

Pollution in the atmosphere, workplace, and indoor settings; health effects, regulatory and public policy issues and control of air pollutants. (Offered spring quarter.)

410-410L. Industrial Hygiene. 5 hours.

Not open to students with credit in EHS 409.

Prerequisite: CHM 240 and 240L and PCS 127-127L.

The anticipation, recognition, evaluation, and control of those environmental factors, arising in or from the workplace, which can cause sickness, impaired health and well-being, or significant discomfort and inefficiency among workers or among community citizens. (Offered fall and winter quarters.)

415. Solid and Hazardous Waste Management. 5 hours.

Prerequisite: CHM 240 and 240L and EHS 306.

The chemical and biological properties, treatment methods, toxicity, proper methods of disposal, and long term health effects of solid hazardous waste including radioactive waste will be examined. Attention is focused on regulatory and industrial management of waste. (Offered fall and winter quarters.)

421-421L. (FS/MIB) Environmental Microbiology. 5 hours.

See FS 421-421L. (Offered winter quarter.)

425. Environmental Health Program Planning. 5 hours.

Not open to students with credit in EHS 325.

Prerequisite: EHS 306 or work experience in environmental health.

Managing environmental health programs; assessment, communication of risks, priorities, pro-

gram strategies, allocating resources, and program evaluation. (Offered spring quarter.)

435-435L. Environmental Chemistry. 5 hours. Four lectures and one 3-hour lab period per week. Prerequisite: CSS 305-305L and CHM 240 and 240L or permission of department.

Chemical principles of environmental processes which result from natural or human-generated phenomena; air, water, and soil chemical reactions involving pollutants and wastes; measurement of pollutants in the environment. (Offered spring quarter.)

449. Environmental Toxicology. 5 hours.

Prerequisite: CHM 240 and 240L and (BIO 104-104L or 108-108L).

A study of the extent and significance of toxic agents in man's environment, and the physical, chemical, and biological processes which determine their behavior, fate, and ultimate effect on human health. (Offered fall and winter quarters.)

452-452L. (FS/MIB) Microbiology of Food Sanitation. 5 hours.

See FS 452-452L. (Offered winter and spring quarters.)

459-459L. Microbiology of Water and Wastewater. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: CHM 261 and 261L and MIB 350-350L.

In-depth study of microbial life of water and wastewater, domestic and industrial, with scrutiny of current treatment processes. Sampling methods will be demonstrated along with proper storage of samples. Study will be made on effects of different types of waste on microbial population of rivers and streams. (Offered fall and spring quarters.)

Engineering Technology (ET) for Non-Engineering Students

Contact Person: Dr. E. Dale Threadgill, 542-1653

210. Surveying. 5 hours. Five 2-hour lab periods. Prerequisite: MAT 109.

Surveying methods, instruments, and computations related to field problems in taping, leveling, directions, curves, and land surveying. (Offered fall, spring, and summer quarters.)

303. Wood and Masonry Technology. 3 hours. Two lectures and one 3-hour lab period. Development of basic understanding and skill in wood and masonry work; selection, care and use of materials, hand tools, and power equipment; plans, sketches and drawings; woodworking and carpentry; concrete and masonry; painting and wood finishing. (Offered fall quarter.)

307. Metal Technology. 3 hours. Two lectures and one 3-hour lab period. Development of basic understanding and skill in metal work; selection, care, and use of materials, hand tools, and power equipment; cold and hot metal work; gas and arc welding; plumbing; soldering; surface finishing, and service centers. (Offered spring quarter.)

328. Soil and Water Technology. 5 hours. Four lectures and one 2-hour lab period. Prerequisite: EGR 121 or permission of department. A study of the forces causing erosion and the conservation practices for controlling it. Planning and management of drainage and irrigation systems and the sources and quality of water for agricultural uses are also studied. (Offered fall quarter.)

350. Turf and Landscape Irrigation Systems. 2 hours. Prerequisite: (BIO 103-103L or BOT 121-121L) and MAT 116. Engineering technology involved in component selection, installation and repair of turfgrass and landscape irrigation systems. (Offered winter quarter.)

360. Mechanical Energy Conversion. 3 hours. Two lectures and one 2-hour lab period. Principles of operation, construction, and maintenance for internal combustion engines. Methods of transmitting engine power, operating efficiencies and measurement, and basic engine thermodynamics. (Offered winter quarter.)

370. Agricultural Structures and Building Materials. 5 hours. Four lectures and one 3-hour lab period. Properties, selection, and utilization of construction materials; design considerations and cost estimation for agricultural structures; and building specifications, site selection, and construction techniques. (Offered spring quarter.)

380. Electrical Systems. 3 hours. Applications of electricity to agriculture; wiring systems for farm buildings; selecting, using, and controlling electrically operated equipment in farming operations. (Offered fall quarter.)

409. Special Topics in Engineering Technology. 1-5 hours. Repeatable for maximum 5 hours credit. Prerequisite: Permission of department. Special topics in an identified area of engineering technology (for non-engineering students). (Offered every quarter.)

420. Management of Environmental Systems. 5 hours. Four lectures and one 2-hour lab period. Prerequisite: ET 370. Bioenergetics of animal response to thermal environments, psychrometrics, heat and moisture balances in buildings, selection of ventilation systems components, waste management systems, farmstead layout, loads on buildings, functional planning selection of materials, and operation of modern structures. (Offered winter quarter.)

425-425L. (ENT/CSS) Pesticide Management and Utilization. 5 hours. See ENT 425-425L.

430. Measurement and Control Systems for Agri-Industries. 3 hours. Prerequisite: ET 380 and 420. Measurement of process control variables and implementation of microcomputer-based measurement and control systems. (Offered spring quarter.)

440. Processing and Handling Biological Products. 5 hours. Four lectures and one 2-hour lab period. Prerequisite: ET 420. Fundamentals and operation for handling agricultural materials in bulk and packaged forms; processing principles and procedures; selection of equipment; development of systems, determination of cost. (Offered spring quarter.)

450. Agricultural Machinery Systems Management. 5 hours. Four lectures and one 2-hour lab period. Prerequisite: Senior status. A study of the design and operational technology of modern machinery, power units and tractors used in the production and harvesting of major field crops; equipment selection for systems farming; economic and technical management for efficient machine performance, control, and safety. (Offered fall quarter.)

460. Electric Power for Agri-Industrial Applications. 5 hours. Prerequisite: ET 380. Fundamentals and utilization of electric power relative to energy transmission, AC and DC electrical machines, industrial controls, and power semiconductors; equipment—theory of operation, evaluation and selection for given tasks. (Offered winter quarter.)

Environmental Ethics (ETH)

Contact Person: Dr. Peter Hartel, 542-0898

400. Environmental Ethics Seminar. 1 hour.

Prerequisite: Permission of department.

Readings in environmental ethics.

418. (PHY) Environmental Ethics. 5 hours.

See PHY 418.

419. (AGR) Agricultural Ethics. 2 hours.

See AGR 419. (Offered spring quarter.)

451. (PHY) Technology and Values. 5 hours.

See PHY 451.

Food Science (FS)

Contact Person: Dr. Dorris A. Lillard,
542-2286

201. Food and Well-Being. 2 hours.

Not open to students with credit in FS 301 or 367.

Students will be introduced to facts related to food supplies, food processing, food safety, and food laws and regulations, and obtain a scientific basis for understanding issues relating to food and well-being.

301. Man and His Food. 5 hours. Three lectures and a lab period.

Historical and philosophical aspects of food processing and its relationship to public health, nutritive value, quality of the finished product, and governmental regulations. Consideration of basic facts, principles and terminology pertaining to most foods and food processes. (Offered fall, winter, and spring quarters.)

315. Food Science Seminar. 1 hour.

Prerequisite: Permission of department.

A discussion course, required of all students majoring in the department. (Offered fall and spring quarters.)

319. Special Problems in Food Science. 1-5 hours.

Prerequisite: Permission of department.

This course is available to upper division students to pursue undergraduate research problems in food science. (Offered every quarter.)

324. Dairy Products Judging and Grading. 3 hours.

Prerequisite: Permission of department.

Scoring and grading of milk, butter, ice cream, cheese, and cottage cheese.

365-365L. (ADS) Meat and Animal Evaluation.

5 hours. Two lectures and two 3-hour lab periods. An introduction to meat science; relation of the live animal to its ultimate value as a food product; efficient marketing of live animals, technological and manipulative skills in slaughtering and processing; anatomy, muscle structure and function as indicators of meat quality. (Offered fall and winter quarters.)

367. Introduction to Food Science and Technology. 5 hours. Five lectures or field trips.

The study of the sources of raw materials, the processing, storage, and handling of processed foods, and the problems involved in the processing of these products. (Offered fall and winter quarters.)

386. (PS) Poultry Processing. 5 hours.

See PS 386. (Offered spring quarter.)

391. Food Science Internship. 2-5 hours.

Prerequisite: Basic courses in food science and permission of department.

This course provides a practical educational experience while working in an operational food industry laboratory or plant. (Offered summer quarter.)

403-403L. (ADS) Dairy Processing. 5 hours.

Three lectures and two 2-hour lab periods.

Not open to students with credit in ADS(FS) 353 and ADS(FS) 355-355L.

Prerequisite: CHM 112 and 112L and BIO 103-103L.

Fundamental principles of dairy processing technology including heat treatment, manufactured milk products, frozen dairy products, and quality control. (Offered winter quarter.)

407-407L. (ADS/MIB) Food and Dairy Microbiology. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: MIB 350-350L.

Prerequisite: MIB 350-350L.

A study of microorganisms in natural and processed food and dairy products, including their origin, nature, effect on food, and relationship to human health. (Offered fall quarter.)

409-409L. Principles of Food Processing. 5 hours.

Four lectures and one 3-hour lab period.

Prerequisite: MIB 350-350L or permission of department.

An overview of food preservation by thermal processing, drying, cooling, freezing, and fermentation is conducted. Topics include the principles of preservation by control of microbial and enzymatic activity, minimization of chemical, physical and sensory deterioration, and bioprocessing applications. (Offered fall quarter.)

411-411L. Food Engineering Fundamentals. 5 hours. Three lectures and two 3-hour lab periods. Prerequisite: MAT 254 or permission of department.

Mass and energy balance, fluid flow, heat transfer and refrigeration in food plant operations. The course will cover the theory, calculations and design practices, and equipment used on these operations, as well as the physical, chemical, and microbial changes that can occur in foods in processes employing these operations. (Offered winter quarter.)

412-412L. Food Engineering Fundamentals. 5 hours. Three lectures and two 3-hour lab periods. Prerequisite: FS 411-411L or permission of department.

Continuation of FS 411-411L. Covers phase equilibria in foods, evaporation de-aeration, drying, filtration, size reduction, mechanical separation processes, agglomeration, and process control. (Offered spring quarter.)

414-414L. Food Chemistry. 5 hours. Three lectures and two 3-hour lab periods.

Prerequisite: CHM 240 and 240L or 340 and 340L, FS 301, 367, or 409-409L.

A study of the chemical and physical properties of foods. (Offered fall quarter.)

415-415L. New Food Product Development. 5 hours. Three lectures and two 2-hour lab periods. Prerequisite: FS 409-409L and FS 414-414L.

Basic stages of new food product development, food constituents and functionality, ingredient functions and selection, sensory principles and evaluation, dietary guidelines for product development, food formulations, new product management and marketing, trademarks, patents and labels. (Offered winter quarter.)

419. Nutritional Quality of Food and the Effect of Technology. 5 hours.

Prerequisite: FS 414-414L, BCH(BIO) 310, or permission of department.

A study of the nutritional properties of food and the effects of modern technology on nutritional quality. (Offered spring quarter.)

421-421L. (EHS/MIB) Environmental Microbiology. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: MIB 350-350L.

Types of microorganisms in the environment; effect of different environmental conditions on microbial existence, public health aspects of environmental microbiology, and applications of microorganisms to solve environmental problems. (Offered winter quarter.)

422-422L. Instrumental Methods of Food Analysis. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: CHM 240 and 240L.

Spectrophotometric, colorimetric, chromatographic, and potentiometric methods of analysis as applied to food will be studied. Emphasis will be placed upon correlation and interpretation of results. (Offered winter quarter.)

425. Governmental Regulation of Food Safety and Quality. 3 hours.

Prerequisite: Permission of department.

Role of mandatory and optional food regulations exercised by state, federal and international agencies on food quality, safety, wholesomeness and nutrition. (Offered spring quarter.)

452-452L. (EHS/MIB) Microbiology of Food Sanitation. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: MIB 350-350L or FS(MIB/ADS) 407-407L.

Study of microorganisms and practices important in food sanitation. Control of microorganisms in the food industry environment to insure food safety. (Offered winter and spring quarters.)

457-457L. (MIB) Food Fermentations. 5 hours. Not open to students with credit in FS(ADS/MIB) 453-453L.

Prerequisite: MIB 350-350L.

Microbial and technical aspects of food fermentations. Fermentations to be studied include dairy, beer, wine, vegetable, bread, soy, and various food additives and nutrients. (Offered spring quarter.)

458-458L. Food Quality Control. 3 hours.

Not open to students with credit in FS 423-423L.

Prerequisite: MAT 116 and FS 301; or FS 367 and STA 200.

Objectives of food quality control; food quality measurements; HACCP; food attribute and variable control charts; food sampling plans; and evaluation of food production/process control. (Offered winter quarter.)

459-459L. Food Packaging. 3 hours. Two lectures and one 3-hour lab period.

Not open to students with credit in FS 423-423L. Prerequisite: FS 367 or 301 or permission of department.

Raw materials, processes and machinery used in the transportation, storage, and marketing of packaged food products. The relationship between packaging materials, food processing operations, and product quality. Evaluation of chemical and physical properties of food package materials. (Offered fall quarter.)

462. Food Biotechnology. 5 hours.

Prerequisite: BCH 401 or BCH(BIO) 310.

Recombinant DNA in food and enzyme biotechnology, tissue culture, and microbial transformations. Applications and regulations of biotechnology in the fats and oil industry. (Offered spring quarter.)

468-468L. Advanced Meat Processing. 5 hours. Four lectures and one 3-hour lab period.

Not open to students with credit in FS 368-368L or 424-424L.

Prerequisite: FS(MIB/ADS) 407-407L and FS 414-414L.

Advanced theories and practices of meat processing and technology; scientific basis for meat as a food, USDA and FDA regulations governing meat processing and the latest innovations in commercial meat processing. (Offered spring quarter.)

510. Food Products Formulation and Preservation. 5 hours.

Not open to students with credit in FS 409-409L. Prerequisite: FS 367 or 301 or permission of department.

Food preservation by canning, freezing, and dehydration. Food ingredients and their functional properties. Formulation of shelf stable food products. Practices to ensure the safety and storage stability of processed foods. (Offered spring quarter.)

Plant Genetics (GEN)

358. Principles of Genetics. 5 hours.

Prerequisite: BOT 121-121L, 122-122L or BIO 103-103L, 104-104L or permission of department. Introduction to the principles of heredity and variation as related to all organisms. (Offered fall and spring quarters.)

Horticulture (HOR)

Contact Person: Dr. Gary A. Couvillon,
542-0789

200. Horticultural Science. 5 hours.

An introduction to horticultural science, the biology of horticulture, the technology of crop production and marketing, the industry, geography, production systems, esthetics, and crop types. (Offered every quarter.)

301. Introduction to Vegetable Crops. 3 hours. Prerequisite: BIO 103-103L and 104-104L or BOT 121-121L and 122-122L.

A survey of botany, general culture, and uses of the major vegetable crops grown in the U.S. and neighboring countries. (Offered winter quarter.)

302. Introduction to Fruit Crops. 3 hours.

Prerequisite: BIO 103-103L and 104-104L or BOT 121-121L and 122-122L.

A survey of the botany, geographic distribution, general culture, and culinary uses of the world's major fruit crops. (Offered spring quarter.)

304. Environmental Horticulture. 5 hours.

Prerequisite: HOR 200.

Effects of environmental factors on growth and physiology of horticultural plants and modification of the indoor, greenhouse or outdoor environment to improve crop production. (Offered fall quarter.)

314. Interior Plantscapes. 2 hours.

Prerequisite: HOR 200.

The growth, installation, care, and use of indoor foliage plants. (Offered winter quarter.)

344. (BOT/ANT) Herbs, Spices, and Medicinal Plants. 2 hours.

Historical and contemporary significance of herbs, spices, and medicinal plants in human culture and commerce; chemical and biological characteristics; commercial production techniques; application in modern and traditional medical systems. (Offered fall quarter.)

350. Herbaceous Perennials. 3 hours.

Prerequisite: Permission of department.

Identification of herbaceous perennials used in ornamental horticulture. Environmental needs of various species will be discussed. (Offered spring quarter.)

362. Plant Propagation. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: BIO 103-103L, 104-104L or BOT 121-121L, 122-122L and HOR 200.

A study of the principles and practices underlying the increase in plant numbers with emphasis primarily on the anatomical and physiological basis for plant reproduction by various methods. (Offered fall quarter.)

363. Nursery Management. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: HOR 200 or permission of department.

A study of the basic fundamentals underlying the location, operation, and management of both retail and wholesale nursery establishments. (Offered winter quarter.)

370A. Systematics of Woody Landscape Plants I. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: Permission of department.

Identification, form, size, texture, ornamental characteristics, culture, diseases, insects, propagation and landscape uses of woody plants in nurseries and landscapes with emphasis on shade trees and needle evergreens. (Offered fall quarter.)

370B. Systematics of Woody Landscape Plants II. 5 hours. Four lectures and one 2-hour lab period.

Identification, form, size, texture, ornamental characteristics, culture, diseases, insects, propagation and landscape uses of woody plants in nurseries and landscapes with emphasis on broadleaf evergreens, vines, small flowering trees and shrubs. (Offered spring quarter.)

380. Selection, Production, and Maintenance of Trees for the Landscape. 3 hours.

Prerequisite: HOR 304, 362, 370A, and 370B; or permission of department.

Characteristics and environmental influences on shape and form, uses, propagation, production and maintenance of ornamental trees used in the landscape. (Offered spring quarter.)

383. Ornamental Ground Covers. 3 hours.

Prerequisite: HOR 304, 362, 370A, and 370B.

A study of the major ground cover species use in landscapes including all aspects of use, growth habits, aesthetics, production and growing systems, establishment and maintenance. (Offered fall quarter.)

391. Horticulture Internship. 5 hours.

Prerequisite: Student must have completed basic courses in major field; permission of department; junior or senior standing.

An educational experience in the operations and management of horticultural industries or laboratories is provided through practical work experience. (Offered every quarter.)

400. Horticulture Seminar. 1 hour.

Required of all undergraduate students in horticulture. Open to all students in related fields. Attendance without registering for credit is permitted. Papers on selected topics to be presented by registered students. (Offered fall quarter.)

402. Pomology. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: HOR 302 or permission of department.

The physiological principles underlying the production of fruit and nut crops and small fruits with review of experimental evidence. Emphasis placed on varietal selections, site selection, and current cultural practices. (Offered spring quarter.)

404. Olericulture. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: HOR 301 or permission of department.

Principles and perspectives of vegetable crop production with emphasis placed on current cultural practices and environmental influences. (Offered winter quarter.)

405. Greenhouse Management I. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: HOR 200 and 304.

A study of the principles and practices involved in the production of greenhouse pot plants, bedding

plants and a few selected cut flowers. Special emphasis is given to nutrient practices, the effects of growth regulators and postharvest handling and storage practices of floriculture crops. (Offered fall quarter.)

406. Greenhouse Management II. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: HOR 405.

A study of commercial greenhouse crop production practices with special emphasis on pot plant production techniques, plant nutrition, fertilizers, and the use of growth regulators. Students will be personally responsible for the culture of a floriculture crop in the greenhouse. (Offered winter quarter.)

407, 408. Special Problems in Horticulture. 2-5 hours each. Repeatable for maximum 5 hours credit.

Prerequisite: 10 hours senior courses in horticulture.

These courses are designed for the student who wishes to carry out a research or technical problem of special interest under direction of a staff member. (Offered every quarter.)

409. Landscape Contracting. 5 hours. Four lectures and one 2-hour lab.

Prerequisite: 10 hours of horticulture.

Landscape installation, lawn establishment, care of the landscape after installation, development of contracts for same. (Offered fall quarter.)

411. Plant Nutrition. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: CHM 112 and 112L or 122 and 122L or permission of department.

Principles and perspectives of plant nutrition. Emphasis is placed on the "initial" or "acquisitive" aspects of plant nutrition. This course deals in the main with the mineral nutrition of higher green plants. This course is designed to allow a student to deal with problems encountered by plants as they mine the environment through a sound knowledge of the science of plant nutrition. (Offered winter quarter.)

421. Postharvest Physiology of Horticultural and Agronomic Crops. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: HOR 304 or permission of department.

A study of functional processes in fruits, vegetables, nuts, seeds, cut flowers and intact plants after they have been harvested. These processes include catabolic and anabolic metabolism, anatomical changes and pathological responses. Transportation, refrigeration, controlled atmospheres, drying and packaging principles are also covered. (Offered winter quarter.)

437. (CSS) Heavy Metals in the Environment. 2 hours.

Prerequisite: CHM 122 and 122L or 112 and 112L and CSS 305-305L and 201-201L or HOR 304. The natural level and sources of, and man's activity affecting, the heavy metal composition of soils and plants, and their potential hazards to plant life and introduction into the food chain. (Offered winter quarter.)

466L. (CSS) Methods for Soil Testing and Plant Analysis. 2 hours.

Prerequisite: CHM 112 and 112L or 122 and 122L. Corequisite: CSS 466. Laboratory exercises in the collection, preparation and elemental assay of soils and plant tissue for nutrient element evaluation. (Offered spring quarter of odd-numbered years.)

Plant Pathology (PAT)

Contact Person: Dr. Ronald W. Roncadori, 542-6963

301. (BOT/ANT) Fungi: Friends and Foes. 5 hours.

Not open to students with credit in PAT(BOT) 300 or PAT(BOT) 420-420L.

Fungi of ecological, economic, and biomedical importance and their impacts on human affairs. (Offered winter quarter.)

353-353L. Elementary Plant Pathology. 5 hours. Four lectures and one 3-hour lab period.

Prerequisite: BOT 121-121L and 122-122L or BIO 103-103L and 104-104L or permission of department.

An introduction to the study of disease in plants. (Offered fall, winter, and spring quarters.)

357-357L. Turfgrass Diseases. 3 hours. Two lectures and one 2-hour lab period.

Prerequisite: PAT 353-353L and CSS 369-369L. Principles of diagnosis and control of turfgrass diseases and their application in the management of fine turfgrass areas such as parks, athletic fields, cemeteries, home lawns, and golf courses. (Offered spring quarter.)

383-383L. Forest Pathology. 3 hours. One lecture and two 2-hour lab periods.

Students will learn to identify forest diseases, assess their potential impact, and learn management procedures which can be used to reduce the impact when justified. Students receive sufficient grounding in plant pathology to allow them to take additional courses if they desire. (Offered winter quarter.)

391. Plant Pathology Internship. 5 hours.

Prerequisite: Permission of department, junior or senior standing.

Designed to give students an opportunity to gain practical experience in the application of plant pathological principles and procedures learned in formal classroom situations. (Offered every quarter.)

399. Special Problems. 1-5 hours. Repeatable for maximum 6 hours credit.

Prerequisite: Appropriate basic courses. Introduction to research or intensive study in special area of plant pathology, forest pathology, mycology, nematology, virology, bacteriology, or physiology. (Offered every quarter.)

406ABC. Etiology of Plant Diseases. 2-6 hours. Repeatable for maximum 6 hours credit. Five lectures and one 2-hour lab period.

Prerequisite: PAT 353-353L and permission of department.

Non-mycological causes of plant diseases with emphasis on their classification, biological characteristics, and pathogenic mechanisms.

- A. Bacterial plant pathogens.
- B. Nematode plant pathogens.
- C. Viral plant pathogens.

One-third quarter will be devoted to each pathogen group. (Offered winter quarter of odd-numbered years.)

415. Plant Pathology Seminar. 1 hour each.

Discussion of selected topics in plant pathology. (Offered fall, winter, and spring quarters.)

420-420L. (BOT) Introductory Mycology. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: BOT 121-121L and 122-122L or BIO 103-103L and 104-104L or permission of department.

An introduction to the biology of the fungi, including a survey of all classes. (Offered fall quarter.)

428-428L. Diagnosis and Control of Plant Diseases. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: PAT 353-353L or equivalent. Development of fundamental and practical knowledge for identification and control of plant diseases. (Offered fall quarter.)

Poultry Science (PS)

Contact Person: Dr. Henry L. Marks, 542-1333

201ABC. Poultry Evaluation and Selection. 1 hour each.

A study of poultry and poultry product quality evaluation and selection standards. It provides students with the fundamental knowledge needed to participate or to instruct others in poultry judging activities. (Offered fall, winter, and spring quarters.)

202-202L. Introductory Poultry Science. 5 hours. Four lectures and one 2-hour lab period. Prerequisite: BIO 103-103L and 104-104L.

An introductory course designed to cover the biology of the domestic fowl with emphasis on its application to poultry production. (Offered fall, winter, and spring quarters.)

360. Poultry Production. 5 hours. Three lectures and two lab periods. Prerequisite: PS 202-202L.

Application of the principles of poultry science to the practice of poultry production. (Offered winter quarter.)

371. Commercial Poultry Management. 5 hours. Prerequisite: PS 360.

A detailed study of the management practices and principles used in the business of producing eggs and poultry meat. Emphasis is placed on the factors influencing costs and returns in poultry operations. (Offered spring quarter.)

372. Poultry Breeding. 5 hours. Four lectures and one lab period.

Prerequisite: A course in genetics.

A consideration of the inheritance of morphological and physiological characters. Emphasis is placed on the development of criteria for selection and the development of genetically sound poultry breeding programs. (Offered winter quarter.)

375. Poultry Nutrition. 5 hours.

Prerequisite: PS 360.

The application of the principles of nutrition to the avian species. A study is made of the biochemical aspects of the individual nutrients and their supply in terms of feedstuffs and practical poultry diets. (Offered winter quarter.)

379. Poultry Seminar. 1 hour.

Prerequisite: PS 360.

Open to all students in related fields.

Topical discussion of current problems and papers of scientific work in poultry to be presented by the students. (Offered spring quarter.)

380-380L. Avian Anatomy and Physiology. 5 hours. Four lectures and one 3-hour lab period.

Prerequisite: BIO 103-103L and 104-104L.

A lecture and laboratory study of avian systemic anatomy in conjunction with the related physiological functions. (Offered fall quarter.)

386. (FS) Poultry Processing. 5 hours.

Prerequisite: PS 360 or FS 301 or FS 367.

A study of the basic principles and methods of processing poultry and eggs. Special emphasis will be placed upon broiler harvesting, slaughter and dressing, plant sanitation, microbiology, inspection, grading and basic product forms. A study of shell egg processing and handling will also be covered. (Offered spring quarter.)

391. Poultry Business Internship. 5 hours.

Prerequisite: Basic courses in student's major, junior or senior status, and permission of department.

As part of the student's educational training, this course provides practical work experience and familiarizes the student with the operation and management of commercial poultry business firms. (Offered every quarter.)

399. Special Problems in Poultry Science. 2-5 hours. Repeatable for maximum 5 hours credit.

Prerequisite: Junior standing.

Introduction to research or intensive study in a specialized area of poultry science. (Offered every quarter.)

405. Advanced Poultry Breeding. 5 hours.

Prerequisite: PS 372.

The development of practical poultry breeding programs. A study of the mode of inheritance and relative heritability of various characteristics of economic importance and criteria for effective selection toward their improvement. (Offered spring quarter of even-numbered years.)

406-406L. Physiology of Avian Reproduction. 5 hours.

Prerequisite: BIO 103-103L and 104-104L.

Lectures emphasize the reproductive physiology of poultry and integrate this information into management programs directed toward maximizing reproductive efficiency. Labs will emphasize the acquisition of skills and techniques in reproductive management including the collection, preservation and evaluation of semen; fertility evaluation, and proper incubation practices. (Offered spring quarter of even-numbered years.)

433. Basic Mycotoxicology. 5 hours.

Prerequisite: BIO 103-103L and 104-104L and CHM 261 and 261L or equivalent.

A study of mycotoxins as they relate to agriculture. Various mycotoxins apt to occur in feedstuffs will be discussed. Major areas of emphasis are fungal producers, chemical and physical properties of the toxins, prevalence and distribution in nature, biological effects and mode(s) of action, and means of control. (Offered spring quarter.)

The Franklin College of Arts and Sciences

New College

Administrative Officers

Wyatt W. Anderson, Ph.D., *Dean*
Richard Bouldin, Ph.D., *Associate Dean*
Ann R. Crowther, D.P.A., *Associate Dean*
Clifton W. Pannell, Ph.D., *Associate Dean*
Norman G. Sansing, Ph.D., *Associate
Dean and Coordinator of Health
Science Advising*
Martha B. Ward, *Assistant to the Dean*
Linda T. Smith, *Coordinator of Academic
Advising*
Marci M. Babineaux, *Computer Systems
Manager*
Bobbie Epting, *Director of Development*

General Information

PURPOSE

The objectives of the faculty of the Franklin College are to advance and disseminate knowledge in the basic academic disciplines of the Arts and Sciences. The college offers its undergraduates both the fundamentals of a liberal education on which to base a lifetime of learning and the opportunity to concentrate in studies which form the foundation for professional pursuits. In concert with the Graduate School, the Franklin College offers graduate students opportunities for advanced study and research. The faculty strives to enrich the intellect and nurture the resourcefulness of the individual student so that he or she may deal with life's challenges with well-founded self-confidence and self-assurance. The objectives of the Franklin College are pursued by a faculty committed to high achievement in teaching and research and creative activities and confident in the quality and the vitality of our educational program.

ORGANIZATION

The Franklin College is organized into several divisions.

The Division of General Studies

All freshmen entering the College, and all transfer students who have not completed the divisional requirements, are enrolled in this division. To complete the requirements of the Division of General Studies, satisfactory grades must be made in the following:

English 101 and 102

The basic mathematics courses appropriate to the degree sought.

At least thirty quarter hours in the areas of social science, science, fine arts, history, literature, philosophy, and religion appropriate to the degree sought. In addition, the student should complete a minimum of two quarters of a foreign language while in this division.

Some programs of study may have additional requirements to those of the General Studies Division. Students should consult with an appropriate advisor for this specific information. Upon the satisfactory completion of the requirements of this division (which is usually accomplished during the first two years), a student transfers either to one of the several departments of the College or to another school or college within the University.

Each school or college in the University has its own regulations concerning transfer. The student should contact the appropriate dean's office well in advance of the expected date of transfer. There are several preprofessional advising programs in the Franklin College which are described in a later section of this bulletin.

The Major Divisions

The major divisions are:

Division of Biological Sciences: The Departments of Biochemistry and Molecular Biology, Botany, Cellular Biology, Entomology, Genetics, Marine Sciences, Microbiology, Psychology, and the Institute of Ecology.

Division of Fine Arts: The Department of Drama, and the Schools of Art and Music.

Division of Humanities: The Departments of Classics, Comparative Literature, English, Germanic and Slavic Languages, Romance Languages, Speech Communication, History, Philosophy, and Religion.

Division of Social Sciences: The Departments of Anthropology, Geography, History, Philosophy, Political Science, Psychology, Sociology, and Speech Communication.

Division of Physical Sciences: The Departments of Chemistry, Computer Science, Geography, Geology, Marine Sciences, Mathematics, Physics and Astronomy, Statistics, and the Institute of Ecology.

Division of Interdisciplinary Studies: The African American Studies Program, French Studies Program, German Studies Program, Global Policy Studies Program, Latin American and Caribbean Studies Program, Medieval Studies Program, Women's Studies Program, Criminal Justice Studies Program, and Interdisciplinary Studies Major Program.

Requirements for entry to a major division are:

- (a) At least 90 hours of college credit.
- (b) A minimum cumulative grade point average of 2.0.
- (c) The student should have completed:
 - (1) ENG 102
 - (2) The basic mathematics courses appropriate to the degree sought (item 5 in the degree requirements)

Once admitted to a major division in the College, a student may transfer to any other division and/or degree program in the Franklin College by satisfying the requirements of that program, and completing the appropriate form in the Dean's Office.

Academic Information

ADVANCED PLACEMENT

Through Advanced Placement, a student may exempt a course with or without credit.

Exemption of a course with credit is equivalent to completing the course. This credit counts toward the 182 hours required for graduation and may be used to satisfy core curriculum requirements. If a course is exempted without credit, a core curriculum requirement may be met. If so, the student has the opportunity to choose an equivalent number of credit hours in electives in order to meet overall graduation requirements. For further information concerning Advanced Placement, inquire at the Honors Office in the Academic Building.

APPLICATION FOR GRADUATION

The Registrar's Office produces graduation checksheets for currently enrolled students who have completed 157 quarter hours toward their degrees. Each student is responsible for contacting the Graduation Certification Office (542-1522) to complete degree certification. Failure to do so may result in postponement of graduation.

Student Services and Programs

ACADEMIC ADVISING

Academic advising in the Franklin College of Arts and Sciences is provided by a combination of professional advisors and faculty members. While in the General Studies Division, most students will be advised in New College. To arrange for advising, the student must sign up in person for an appointment in New College.

Once students have been admitted to major divisions, they should go to their major departments for assignment of faculty advisors.

Students with general questions or problems concerning academic matters are encouraged to contact the Coordinator of Academic Advising in the Dean's Office, 113 New College.

HONORS PROGRAM

Appropriate Honors courses may substitute for corresponding courses in the curriculum of the College of Arts and Sciences. Contact the Honors Program Office for information.

Degrees and Programs Offered

The Franklin College offers several baccalaureate degrees and participates in several combined degree programs. Each of these degrees requires a liberal education in the division of general studies and a major in one of the major divisions. In addition, several certificate programs allow students to combine a major in one discipline with interdisciplinary work in others.

The following degrees are offered by the College of Arts and Sciences:

BACHELOR OF ARTS, in which the major may be in any major or division of the College, in Economics, in the Area Study major of the Honors Program, or the Interdisciplinary Studies Major of the Division of Interdisciplinary Studies.

BACHELOR OF SCIENCE, in which the major must be in the Divisions of Biological or Physical Sciences, the Area Study Major of the Honors Program, or the Interdisciplinary Studies Major of the Division of Interdisciplinary Studies.

BACHELOR OF SCIENCE IN CHEMISTRY, in which the major must be Chemistry.

BACHELOR OF SCIENCE IN PHYSICS, in which the major must be Physics.

BACHELOR OF SCIENCE IN PHYSICS AND ASTRONOMY, in which the major must be Physics and Astronomy.

BACHELOR OF FINE ARTS, in which the major must be in the Division of Fine Arts or the Interdisciplinary Major of the Division of Interdisciplinary Studies.

BACHELOR OF MUSIC, in which the major must be in Music.

JOINT DEGREE PROGRAMS. For students of superior scholastic standing, the Franklin College offers programs leading to a baccalaureate degree from the College combined with a professional degree or program from another school or college. They are:

Bachelor of Science, offered with the Medical College of Georgia.

Bachelor of Science, offered with the College of Veterinary Medicine at the University.

Combined Bachelor-Master Degree, offered with the Graduate School at the University.

For students with dual interests, the possibility of earning a double major exists. Also, there are several programs which may

be combined with majors in other areas: Institute for African American Studies, French Studies Program, German Studies Program, Global Policy Studies Program, Latin American and Caribbean Studies Program, Medieval Studies Program, Women's Studies Program, the Pre-Theology program and the A.B. or B.S. with provision for a teaching certificate. Each of these degrees and programs is described below.

Double Major. A double major is two separate majors in the same degree. A double major is earned when the requirements for a major in each of the two areas are satisfied and the requirements for the degree are satisfied. It is sometimes possible to count the same course twice, once in each major, in satisfying the major requirements. When two separate degrees are earned, this is called a dual degree. See the Academic Information section of this bulletin for regulations.

Minor. Many departments and programs offer the chance to earn a minor by taking 20-29 hours of approved courses. Contact the individual department or program for information.

GENERAL CORE CURRICULUM

The following general Core Curriculum applies to A.B., B.S., and B.F.A. degrees offered by the College of Arts and Sciences. It is included in the lists of specific degree requirements (182 hours) which appear after the Core Curriculum.

	HOURS
AREA I HUMANITIES/FINE ARTS	20
ENG 101, 102, 105H	10
Choose from the following foreign languages at the 100-200 level:* Arabic, Chinese, French, German, Greek, Hebrew, Italian, Japanese, Korean, Latin, Portuguese, Russian, Spanish, Swahili	5
Choose from the following courses: CLC 120, 121, 150; CML 221, 222, 225H, 226H; DRA 200; ENG 231G, 232G, 233G, 235H, 236H, 237H; MUS 202; PHY 100, 102, 202H; REL 115, 116, 225H	5

*BFA students in the School of Art should take 10 hours of literature courses in Area I (no foreign language is required).

AREA II MATHEMATICS AND NATURAL SCIENCES 20

MAT 105; 106; 109 or 116**; 253, 253T, or 263H**; CS 201-201L, STA 200, 210H, 211H or 221 and 222; PHY 110, 210H

Choose from the following laboratory sequences: AST 107-107L, 108-108L; BIO 103-103L, 104-104L or 107-107L, 108-108L (as appropriate to major); BOT 121-121L, 122-122L; CHM 111, 111L, 112, 112L****; CHM 121, 121L, 122, 122L; CHM 127H, 127L, 128H, 128L; GLY 115-115L, 116-116L; GLY 125-125L, 126-126L, GLY 235H, 236H; GGY 120-120L, 121-121L, 122-122L, PCS 127-127L, 128-128L; PCS 137-137L, 138-138L; SCI 207H, 208H, 209H 10***

AREA III SOCIAL SCIENCES 20

POL 101, 105H 5
 HIS 111, 121, 122, 251, 252, 215H, 216H, 217H, 253H, 254H 10

Choose one of the following: ANT 102, 212H; ECN 106, 107, 116H, 117H; GGY 101, 215H; PHY 101, 205H, 215H; PSY 101, 103H; SOC 105, 160, 104H 5

AREA IV COURSES RELATED TO MAJOR 30

See individual major or contact the departments for specific courses required in Area IV.

NOTE: Do not duplicate courses used to satisfy Areas I, II, or III.

Bachelor of Arts Degree Requirements

The program of study leading to the A.B. degree permits the student to major in any department in the College, as well as in Economics, Criminal Justice, Interdisciplinary Studies, and Area Studies.

The Core Curriculum for the College of Arts and Sciences is included in the requirements which follow. Before attempting to schedule these courses, check and satisfy all prerequisites. Honors equivalents may be substituted for courses on this list.

HOURS

1. *English*: ENG 101, 102. 10
2. *Literature*: Any two courses from the following: CLC 120, 121, 150; CML 221, 222, 240; ENG 231G, 232G, 233G, 234G, 240G; FR/SP 303; FR/SP/ITA 310, 311, 312; SP313; GER 325, 326, 327; GRK/LAT 400 level; POR 312, 313; RUS 401, 402. 10
3. *Foreign Language*: Completion or exemption through the fourth quarter of one language: Arabic, Chinese, French, German, Greek, Hebrew, Italian, Japanese, Korean, Latin, Portuguese, Russian, Spanish, Swahili. 20
4. *History*: Two approved courses from HIS 111-399 (not HIS 300M). 10
5. *Mathematics*: Two courses from the following: MAT 105, 106, 109 or 116, 207 or 253; CS 201-201L; PHY 110; STA 200 or 221 or 222. Note: MAT 116 and 253 are required for AB-Economics. 10
6. *Social Sciences*: Courses from two or more disciplines: anthropology, economics, geography (not physical geography), LIN 210, political science, psychology, social science (not SOS 399), sociology, speech communication. 20
7. *Fine Arts/Philosophy/Religion*: Three courses from the following, including at least one fine arts course and either one philosophy or one religion course: ART 200, 287, 288, 289, 290; DRA 200, 212; MUS 202, 355; philosophy (not PHY 110 or 210H); religion. 15

**These courses are required as part of the degree program for the Bachelor of Science degree.

***Only 5 hours required for completion of the BFA degree. Additional 5 hours should be taken in physical or biological science.

****No credit given toward completion of a Bachelor of Science degree.

8. *Science:*
Biological Sciences Division: One biological science sequence BIO 103-103L, 104-104L or 107-107L, 108-108L or BOT 121-121L and 122-122L.
Physical Sciences Division: (10 hours required) AST 107-107L, 108-108L; CHM 111 and 111L, 112 and 112L or CHM 121 and 121L, 122 and 122L; GGY 120-120L, 121-121L, 122-122L (any two); GGY 200-200L; GLY 115-115L, 116-116L or 125-125L, 126-126L; PCS 127-127L, 128-128L or 137-137L, 138-138L; GGY 104(non-lab), PCS 101 (non-lab). GGY 104 not open to students with credit for GGY 120-120L, 121-121L, or 122-122L.
9. *Major:* An approved program of courses totaling at least 40 quarter hours with a minimum grade of C in each course. 20 hours of this 40-hour major must be taken in residence in the major subject area in courses numbered 300 or higher. The remaining 20 hours may be taken in the major or the same division of the College with no less than 10 quarter hours in courses numbered 300 or higher.
10. *Basic Physical Education* 2
11. *Electives:* (No more than 15 hours of electives may be taken in the major or in courses outside of the Franklin College of Arts and Sciences.) 25
- Total required for graduation:* (No credit allowed in this total for basic physical education beyond 2 hours, basic ROTC, ENG 100, or UNV 101, 102, or 103.) 182

Bachelor of Science Degree Requirements

The program of study leading to the B.S. degree permits the student to major in any department in the Divisions of Biological or Physical Sciences as well as in Interdisciplinary Studies and Area Studies.

The Core Curriculum for the College of Arts and Sciences is included in the requirements which follow. Before attempting to

schedule these courses, check and satisfy all prerequisites. Honors equivalents may be substituted for courses on this list.

- | | HOURS |
|--|-------|
| 1. <i>English:</i> ENG 101, 102. | 10 |
| 2. <i>Literature:</i> Any two courses from the following: CLC 120, 121, 150; CML 221, 222, 240; ENG 231G, 232G, 233G, 234G, 240G; FR/SP 303; FR/SP/ITA 310, 311, 312; SP 313; GER 325, 326, 327; GRK/LAT 400 level; POR 312, 313; RUS 401, 402. | 10 |
| 3. <i>Foreign Language:</i> Completion or exemption through the third quarter of one language: Arabic, Chinese, French, German, Greek, Hebrew, Italian, Japanese, Korean, Latin, Portuguese, Russian, Spanish, Swahili. | 15 |
| 4. <i>History:</i> Two approved courses from HIS 111-399 (not HIS 300M). | 10 |
| 5. <i>Mathematics:</i> MAT 116 (or 109); MAT 253 (required if not exempted). | 10 |
| 6. <i>Social Sciences:</i> Two courses from any of the following: anthropology, economics, geography (not physical geography), history, LIN 210, political science, psychology, social science (not 399), sociology, speech communication | 10 |
| 7. <i>Fine Arts/Philosophy/Religion:</i> Five hours from fine arts and five hours from philosophy (not PHY 110 or 210H) or religion. | 10 |
| 8. <i>Science:</i> Three 10-hour sequences from the following: AST 107-107L, 108-108L; BIO 103-103L, 104-104L or 107-107L, 108-108L (as appropriate to major); CHM 121 and 121L, 122 and 122L or 127H and 127L, 128H and 128L; GGY 120-120L, 121-121L, 122-122L (any two) or GLY 125-125L, 126-126L; PCS 127-127L, 128-128L or 137-137L, 138-138L. | 30 |
| 9. <i>Math/Science Electives:</i> Any courses in the Biological or Physical Sciences Division (including mathematical sciences and psychology). | 20 |
| 10. <i>Major:</i> An approved program of courses totaling at least 40 quarter hours with a minimum grade of | |

- C in each course. 20 hours must be taken in residence in the major subject area in courses numbered 300 or higher. The remaining 20 hours may be taken in the major or the same division of the College with no less than 10 quarter hours in courses numbered 300 or higher.
11. *Basic Physical Education* 40
2
12. *Electives:* (No more than 15 hours of electives may be taken in courses outside the Franklin College of Arts and Sciences.) 15
- Total required for graduation:* (No credit allowed in this total for basic physical education beyond 2 hours, basic ROTC, CHM 111 and 111L or 112 and 112L, ENG 100, GGY 104, PCS 101, or UNV 101, 102, or 103.) 182

Bachelor of Fine Arts Degree Requirements

Major in Art

The Core Curriculum for the College of Arts and Sciences is included in the requirements which follow. Before attempting to schedule these courses, check and satisfy all prerequisites. Honors equivalents may be substituted for courses on this list.

- HOURS
1. *English:* ENG 101, 102. 10
 2. *Literature:* Any two courses from the following: CLC 120, 121, 150; CML 221, 222, 240; ENG 231G, 232G, 233G, 234G, 240G; FR/SP 303; FR/SP/ITA 310, 311, 312; SP 313; GER 325, 326, 327; GRK/LAT 400 level; POR 312, 313; RUS 401, 402. 10
 3. *History:* Two approved courses from HIS 111-399 (not HIS 300M). 10
 4. *Mathematics:* One course from the following: MAT 105, 106, 109 or 116, 207 or 253; CS 201-201L; PHY 110; STA 200 or 221 or 222. Note: MAT 102 may be counted if taken prior to fall 1994. 5
 5. *Social Science:* One course from the following: anthropology, economics, geography (not physical geography), LIN 210, political science, psychology, social science (not 399), sociology, speech communication. 5

6. *Philosophy/Religion:* One course from philosophy (not PHY 110 or 210H) or religion. 5
7. *Science: Biological Sciences Division:* One biological science sequence BIO 103-103L and 104-104L or 107-107L and 108-108L or BOT 121-121L and 122-122L. 10
Physical Sciences Division: (5 hours required) AST 107-107L, 108-108L; CHM 111 and 111L, 112 and 112L or 121 and 121L, 122 and 122L; GGY 120-120L, 121-121L, 122-122L; GLY 115-115L, 116-116L or 125-125L, 126-126L; PCS 127-127L, 128-128L or 137-137L, 138-138L; GGY 104, PCS 101 (non-lab courses). GGY 104 not open to students with credit for GGY 120-120L, 121-121L, or 122-122L. 5
8. *Major:* An approved program of courses appropriate to the major with a minimum grade of C in each course. A maximum of 20 hours of transfer credit in upper division courses may be applied toward the major concentrations in BFA Art. The remaining major requirements must be taken in residence. Contact the School of Art for the Undergraduate Programs Guide. 130
9. *Basic Physical Education* 2
10. *Electives:* While there are no electives required in the BFA degree program, if students are granted exemptions in academic requirements for which they must substitute elective credit, no more than 15 hours may be counted in courses outside Arts and Sciences. Minimum required for graduation: (No credit allowed in this total for basic physical education beyond 2 hours, basic ROTC, ENG 100 or UNV 101, 102, or 103.) 192
11. All prospective candidates should contact the School of Art regarding specific requirements for admission and/or transfer into any major in Art. The basic Art courses: ART 120, 130, 230, 240, and 10 hours from 287, 288, or 289, must be completed before applying to a major area.

Majors in Art Education, Interdisciplinary Studies, Music, and Music Literature

See information regarding these majors in the "Majors" section below or contact the department for requirements.

Additional Requirements for A.B., B.S., and B.F.A. Degrees

13. A minimum grade of 2.0 is required in ENG 101.
14. A minimum grade point average of 2.0 is required in ENG 101, 102.
15. Satisfactory completion of an examination or a designated course on the history of the U.S. and Georgia is required. The exemption exam, offered by the Counseling and Testing Center, may be taken only once. Examinations are given only once each quarter; dates are announced in the *Schedule of Classes*. A passing grade (D) in one of the following courses will also satisfy the U.S. and Georgia history requirement: HIS 251, 252, 253H, 254H, 311H, 417M.
16. Satisfactory completion of examinations or designated courses on the Constitutions of the U.S. and Georgia is required. The exemption exam, offered by the Counseling and Testing Center, may be taken only once. Examinations are given once each quarter; dates are announced in the *Schedule of Classes*. A passing grade (D) in POL 101 at an in-state System institution will satisfy the requirement. Persons transferring POL 101 from out-of-state institutions will be required to take the exam on the Georgia Constitution or take an equivalent course. See the Academic Information section for a list of approved courses.
17. Successful completion of the Regents' Exam is required. The exam should be taken as soon as 45 hours of college-level work have been successfully completed.
18. In order to be awarded a baccalaureate degree from the University, students must earn 60 of the last 90 quarter credit hours in residence. In addition, 20 of the quarter credit hours required for a student's major must be earned in residence.

19. A minimum cumulative UGA grade point average of 2.0 is required to graduate.
20. Senior Exit Examination: Contact major department regarding completion of this requirement.

Waiver of Degree Requirements

Course substitutions or waiver of requirements may be made only upon written approval of the Dean or the Senate Committee on Academic Standards of the College of Arts and Sciences. In some cases, specific courses listed in the degree requirements may be replaced by higher level courses. Consult with an advisor for particulars.

Majors

ANTHROPOLOGY

	HOURS
AREA IV COURSES RELATED TO MAJOR	30
ANT 102, 212H	5
Foreign Language—completion through the fourth quarter of any one language	15
Choose from the following: HIS 111, 121, 122, 251, 252, 215H, 216H, 217H, 253H, 254H; SOC 105, 160, 104H	10

The requirements for an undergraduate major in anthropology are: one course each in social anthropology, archaeology, biological anthropology, and a culture area; and four additional ANT courses. ANT 102 or 212H is a prerequisite to all other courses but does not count toward the major.

Minor in Anthropology: Contact the department for requirements.

AREA STUDIES

The area studies major is similar in intent and design to the interdisciplinary studies major, but is open only to Honors Program participants.

ART

HOURS

AREA IV COURSES RELATED TO MAJOR 30

ART 120, 130, 230, 240	20
Choose from the following: ART 287, 288, 289	10

Major in Art, Studio Art, or major or minor in Art History: Contact the School of Art for requirements.

BIOCHEMISTRY AND MOLECULAR BIOLOGY

HOURS

AREA IV COURSES RELATED TO MAJOR 30

BIO 107-107L, 108-108L or 107H 107L, 108H-108L	10
CHM 240, 240L, 241, 241L	10
MAT 254 or 255	5
PCS 229-229L or 239-239L	5

Biochemistry and Molecular Biology majors in the College of Arts and Sciences should take the following courses: BCH(BIO) 310, BCH 401, 402, and 403, plus other courses in mathematics, physics, organic chemistry, physical chemistry, and biology, as determined in consultation with the departmental advisor.

Minor in Biochemistry and Molecular Biology: Contact the department for requirements.

BIOLOGY

HOURS

AREA IV COURSES RELATED TO MAJOR 30

BIO 107-107L, 108-108L	10
CHM 121, 121L, 122, 122L, or 127H, 127L, 128H, 128L	10
PCS 127-127L, 128-128L or 137- 137L, 138-138L	10

Biology majors in the College of Arts and Sciences should take the following courses: BIO 107-107L and 108-108L plus BCH(BIO) 310, BIO(GN) 320; BIO(CB) 330 or 340; ECL(BIO) 350 or BIO(GN) 460 and one course from among BIO(GN) 321, BIO(CB) 331, ECL(BIO) 351 or BCH 403 and/or other courses in biology, chemistry, physics and mathematics as determined in consultation with a biology degree advisor. It is important to complete the inorganic and organic chem-

istry sequences as soon as possible, preferably by the end of the sophomore year.

Minor in Biology: Contact the department for requirements.

BOTANY

HOURS

AREA IV COURSES RELATED TO MAJOR 30

BOT 121-121L, 122-122L or BIO 107- 107L, 108-108L	10
CHM 121, 121L, 122, 122L or 127H, 127L, 128H, 128L	10
PCS 127-127L, 128-128L or 137- 137L, 138-138L	10

A botany major in either the College of Arts and Sciences or the College of Agricultural and Environmental Sciences is required to take the following courses: BIO 107-107L, 108-108L or BOT 121-121L, 122-122L; BCH(BIO) 310, BIO(GN) 320, BIO(CB) 330 or 340; ECL(BIO) 350 or BIO(GN) 460; BOT 410-410L or BOT(PAT) 420-420L; BOT 423-423L or 431; BOT 465-465L and 483-483L. MAT 254, CHM 121 and 121L, 122 and 122L, 240 and 240L, PCS 127-127L, 128-128L are also required. Additional recommended courses in botany depend on the student's specific interests. Consult the departmental undergraduate advisor for further information.

Minor in Botany: Contact the department for requirements.

CELLULAR BIOLOGY

HOURS

AREA IV COURSES RELATED TO MAJOR 30

BIO 107-107L, 108-108L	10
CHM 121, 121L, 122, 122L or 127H, 127L, 128H, 128L	10
PCS 127-127L, 128-128L or 137- 137L, 138-138L	10

Cellular biology majors are required to take organic chemistry (CHM 240, 240L, 241, 241L or 340, 340L, 341, 341L) and MAT 253 in addition to the Area IV courses above. The major begins with: biochemistry (BCH(BIO) 310), genetics (BIO(GN) 320), cell biology (BIO(CB) 340), and laboratory techniques (BIO 311 or 10 hours from CB 498 or 496H, 497H, 498H). Four advanced cellular biology (CB) courses and at least 1 hour of undergraduate seminar (CB 499) complete the program. This group may include up to

10 hours of upper level didactic courses in other departments of the biology division, at the cellular biology advisor's discretion. A maximum of 10 hours laboratory research may be counted toward the major. Total credit hours: 41.

Minor in Cellular Biology: Contact the department for requirements.

CHEMISTRY

	HOURS
AREA IV COURSES RELATED TO MAJOR	30
CHM 121, 121L, 122, 122L or 127H, 127L, 128H, 128L or 137, 137L, 138, 138L	10
PCS 127-127L, 128-128L or 137-137L, 138-138L	10
Choose from the following: BIO 107-107L, 108-108L; CS 201-201L; GLY 125-125L, 126-126L; MAT 254, 264H	10

The following courses are required for the major in chemistry: CHM 340 and 340L, 341 and 341L, 342 and 342L, 381 and 381L or 580 and 580L, 390, 391, 426, and 427. Upper-level science electives are chosen to complete the 40 hours.

The recommended sequence of chemistry courses taken by chemistry majors is CHM 121 and 121L, 122 and 122L, 123 and 123L, 280 and 280L (or 137 and 137L, 138 and 138L, 139 and 139L), 340 and 340L, 341 and 341L, 342 and 342L, 381 and 381L, 390, 391, 426, and 427. Chemistry majors must also complete three quarters of physics (PCS 127-127L, 128-128L, 229-229L or 137-137L, 138-138L, 239-239L) and mathematics through MAT 254.

Minor in Chemistry: Contact the department for requirements.

CLASSICS

	HOURS
AREA IV COURSES RELATED TO MAJOR	30
Foreign language—completion through the fourth quarter of Latin or classical Greek or (for Classical Culture majors) any foreign language.	15
Choose from the following: ANT 102 or 212H; LIN 210; ART 287 or 211H; CML 221 or 225H; PHY 101 or 215H; REL 115, 116, or 225H	10
Choose from the following: CLC 120 or 205H, 121 or 206H	5

Major in Greek or Latin: For the A.B. in Greek or Latin, 40 hours of coursework are required, including five courses (25 hours) in the language at or above the 400-level (and including LAT 304, for the Latin major), as well as three additional courses (15 hours) either in the language or from a variety of offerings in Classical Culture and related areas (400-level). Majors must also elect CLC 120 or 205H (Greek Culture) or 121 or 206H (Roman Culture), as appropriate, to satisfy 5 hours of the College literature requirement. Students interested in secondary school teaching may work simultaneously toward T-4 (bachelor's level) certification.

Major in Classical Culture and Classical Archaeology Concentration: For the A.B. degree in Classical Culture, 40 hours of coursework are required, including five courses (25 hours) in Classical Culture (400-level), and three additional courses (15 hours) either in Classical Culture, ancient art, ancient history, ancient philosophy, Latin (304 or 400-level), Greek (400-level), or other courses approved by the department. Majors must also elect CLC 120 or 205H (Greek Culture) and 121 or 206H (Roman Culture) to satisfy the College literature requirement, and they are encouraged to take Greek or Latin to satisfy the College language requirement. A program for concentrating in classical archaeology is available to Classical Culture majors.

Minor in Greek, Latin, or Classical Culture: Contact the department for requirements.

Undergraduate Literature Requirements: Students may satisfy the literature requirement in the College of Arts and Sciences (and most other Schools and Colleges of the University) by taking CLC 120 or 205H, 121 or 206H, and/or 150 or 207H, or any 400-level Latin or Greek course.

Honors Curriculum: Besides the specially designated Honors courses in classics (CLC 205H, 206H, 207H, and 496-499H), CLC 453 (Ancient Cities of Greece and Rome), and 460 (Roman Epic Poetry), and selected 400-level Latin courses may be elected for Honors Option credit. Honors credit is also available for the programs in Rome and Carthage described below.

Studies Abroad in Rome: Opportunity for study in Rome is offered through the University of Georgia Studies Abroad Program in

Rome every summer. CLC 121 and 150, or equivalents, which satisfy the College literature requirement, are regularly offered, together with two other Classical Culture courses for those who have already taken 121 and/or 150; students ordinarily earn 15 hours of undergraduate credit. For information, contact Dr. Gantz in the Classics Department.

Carthage Excavations: The University of Georgia sponsors the American Excavations at Carthage in North Africa, where undergraduates have the opportunity to excavate in the summer term and to earn 10 hours of credit (CLC 480, 481). For information, contact Dr. Norman in the Classics Department.

COMPARATIVE LITERATURE

	HOURS
AREA IV COURSES RELATED TO MAJOR	30
Choose from the following: CML 221, 222, 225H, 226H; ENG 231G, 232G, 233G, 235H, 236H, 237H; CLC 120, 121, 150	10
Foreign language—completion through the fourth quarter of any one language	15
Choose from the following: ANT 102, 212H; ART 200; MUS 202	5

Comparative literature is the study of common features in the literatures of more than one culture. It can focus on a genre, a period or a theme, or it can focus very broadly on the materials of literature itself—structure, rhetoric or language. With such a broad focus, CML defines itself in terms of theory and method. Students can use a CML background in a variety of ways. Generally speaking, anyone who is professionally interested in the interpretation of the written or spoken word—whether lawyer, businessperson, writer or humanities professor—can profit from the theory and methods of comparative literature.

Requirements for a major leading to the A.B. degree in Comparative Literature can be met in two ways:

a) In addition to the Arts and Sciences A.B. language requirement, the general major program requires CML 401, 402, and six additional courses in CML at the 400 level. Up to three 300-level courses may be substituted for any of these additional

courses. In consultation with the undergraduate advisor, students will plan a program of study within the CML department broadly focused on a literary period, genre or problem.

b) For those planning graduate work in comparative literature, an alternative program offers the possibility of combining CML courses with courses devoted to a national literature read in the original language. In addition to the Arts and Sciences A.B. language requirement, this major program requires:

CML 401, 402, and two additional CML courses at the 400 level. One 300-level course may be substituted for any of these additional courses.

Two 5-hour courses in a national literature (excluding English) at the 300 or 400 level read in the original language.

Two additional 5-hour courses in a national literature (including English) at the 300 or 400 level OR two additional CML courses at the 400 level OR two courses in a SECOND foreign language at the introductory level. In consultation with the undergraduate advisor, students will plan a program of study that integrates foreign language and comparative literature and prepares the student for multilingual study at an advanced level.

Certificate in CML

Students may qualify for a Certificate in CML by completing the Arts and Sciences B.S. language requirement and the following CML courses: CML 401 and three additional CML courses at the 400 level. One 300-level CML course may be substituted for any of these additional courses. A program of study providing training in literary history, theory and interpretation that supplements the student's training in another discipline will be designed in consultation with the undergraduate advisor.

Minors in Comparative Literature, Chinese Language and Literature, and Japanese Language and Literature: Contact the department for requirements.

COMPUTER SCIENCE

Computer science continues to be one of the fastest growing career fields in the nation. There are critical demands for technically trained persons to manage computer facilities, to provide technical support for computer operations, and to develop new

computer hardware and software systems. Recent graduates of the University of Georgia Computer Science Department are employed by major computer manufacturers, software development corporations, the aerospace industry, government, and a host of other areas. Still other graduates have continued their education in Computer Science at excellent graduate schools.

In order to be classified as a major in the Department of Computer Science and eligible to take major level courses, a student must have completed the following minimum requirements:

- a. Have a University of Georgia cumulative grade point average of 2.0 with at least 30 credit hours in residence at the University and 59 credits towards a degree program, and
- b. Have completed the following courses with a 3.0 grade point average and no grades below C: CS 202-202L, CS(MAT) 261, and MAT 253.

Completion of the following departmental requirements is necessary before earning a degree in computer science:

- a. Additional preparatory courses: CS 203, CS(MAT) 262, MAT 254, 255, and 256.
- b. Major courses: CS 303, 361, 371, 414, 437, MAT(CS) 447, CS 450, 457, 472 and 473; plus 10 additional approved elective hours.
- c. All computer science prerequisite courses must be completed with a grade of C or better before continuing with the sequential coursework.
- d. All major and related coursework must be completed with a grade of C or better.

Minor in Computer Science: Contact the department for requirements.

CRIMINAL JUSTICE

The major in criminal justice is an interdisciplinary program utilizing courses from the departments of Political Science, Psychology, and Sociology. In addition to a 40-hour program of courses for the major, a 15-hour internship is required in which the student synthesizes the theory of the classroom with the practice of a criminal justice agency. In order to provide a quality internship, the program limits enrollment. For particulars on the program and admission procedures, inquire of the Director of the Criminal Justice Program in Baldwin Hall.

Minor in Criminal Justice: Contact the Criminal Justice Program for requirements.

DRAMA AND THEATRE

HOURS

AREA IV COURSES RELATED TO MAJOR		30
DRA 230, 250		10
Foreign language—completion through the fourth quarter of any one language		15
Choose from the following: CLC 120, 121, 150; CML 221, 222, 225H, 226H; ENG 231G, 232G, 233G, 235H, 236H, 237H		5

To complete an A.B. degree in the Department of Drama, the student must complete DRA 205ABC, 230, 250, and at least 40 hours of drama in courses numbered above 300. Included in these courses must be DRA 420, 421, and five additional hours of theatre history. A minimum of 30 quarter hours of the major must be earned in residence at the University of Georgia.

Minor in Drama: Contact the department for requirements.

ECONOMICS

Students may major in economics in either the Franklin College of Arts and Sciences or the Terry College of Business. In addition to core requirements described on page 135, Bachelor of Arts students in economics take 41 hours in the major and 5-10 hours of Statistics.

Economics major requirements as well as course descriptions can be found in the Terry College of Business section of this *Bulletin* on pages 273 and 281.

ENGLISH

HOURS

AREA IV COURSES RELATED TO MAJOR		30
Choose from the following: ENG 231G, 232G, 233G		10
Foreign language—completion through the fourth quarter of any one language		15
Choose from the following: ANT 102, 212H; PSY 101, 103H; SPC 108		5

Freshman Placement Test. All entering freshmen must take the departmental placement test. Performance on this test places a student in ENG 101 or 102. A student placing in 102 exempts 101 with 5 hours credit. Exemption of 101 or a grade of C or better in 101, and a combined average of C (2.0) in

101 and 102, are both required for graduation.

English Major. The English major consists of at least eight courses numbered 300 and above. Three of these courses must be in pre-19th-century literature, and the other five may not be concentrated in one period or genre.

Minor in English: Contact the department for requirements.

ENTOMOLOGY

HOURS

AREA IV COURSES RELATED TO MAJOR

30

BIO 107-107L, 108-108L; CHM 121, 121L, 122, 122L, 240, 240L, 241, 241L

Math/Science Electives: BCH(BIO) 310, and BIO(GN) 320 (preferred) or GEN 358, and BOT 380-380L, or 465-465L, or MIB 350-350L, or PCS 127-127L, 128-128L, STA 221, 222 or 421, 422, or ECL 407 407L

20

Major Courses: ENT 374-374L, 400-400L, 401-401L, ECL(BIO) 350, and 20 hours from the following: ENT 327-327L, 365-365L, 382-382L, 390, 426-426L, 440-440L, 460-460L, 482-482L

40

World-wide, insects destroy about one-third of the food and fiber we produce, and they transmit some of the most devastating pathogens of plants and animals. On the other hand, insects pollinate many valuable food and forest crops, significantly increase the productivity of soils, and are important components in most food chains. A graduate in entomology should have a strong background in general biology and an understanding of the scientific method. Students learn to identify insects and other arthropods and study the biology and ecology of pests and beneficial insects in order to manage them efficiently. They should acquire a basic knowledge of agricultural production principles and how insects influence crop production. Students should also become knowledgeable about the effects of abiotic and biotic factors on insect development, about population growth, species interactions, physiological requirements, and behavior of insects. Limited support from the P. W. Fattig Scholarship fund is available for a qualified major.

Career opportunities are available for entomology graduates in industry, consulting, and public research, including university laboratories and experiment stations, state and federal departments of agriculture, and the U.S. Public Health Service. A graduate will also be prepared to enter a program leading to the M.S. and Ph.D. degrees.

Minor in Entomology: Contact the department for requirements.

FRENCH

See Romance Languages.

GENETICS

HOURS

AREA IV COURSES RELATED TO MAJOR

30

Select three sequences from those below:

MAT 253, 254, or 263H, 264H, or 273H, 274H

10

BIO 107-107L, 108-108L or 107H-107L, 108H-108L

10

CHM 137, 137L, 138, 138L or 127H, 127L, 128H, 128L, or 121, 121L, 122, 122L

10

PCS 137-137L, 138-138L or 127-127L, 128-128L

10

Students planning to major in genetics should meet with a departmental undergraduate advisor as early as possible in their college programs. Specific course requirements, in addition to those listed for the B.S. curriculum in the College of Arts and Sciences, are as follows:

- Math and Science sequences: MAT 253 and 254; BIO 107-107L and 108-108L; CHM 137, 137L and 138, 138L (or 121, 121L and 122, 122L; or 127H, 127L and 128H, 128L); PCS 137-137L and 138-138L (or 127-127L and 128-128L); CHM 340, 340L and 341, 341L (or 240, 240L and 241, 241L).
- Ten credit hours from the following: CHM 390 and 391; STA 421, 422; CS 201-201L; MAT 255 and 256.
- Major courses: BCH(BIO) 310; GN(BIO) 320, 321; BIO(CB) 340, BIO(GN) 460; GN 420, 495 (3 hours), 496 or 496H (5 hours), and additional courses in the biological sciences at or above the 300 level, as determined in consultation with a departmental undergraduate advisor. GN(BIO) 320 and 321 are crosslisted as BIO courses; Genetics majors must be

certain to register for these courses under the GN prefix. The department requires 10 hours of laboratory work (usually GN(BIO) 321 and GN 496). With prior approval, an additional 5 hours of GN 496 or 496H may be substituted for GN(BIO) 321.

d) Many graduate and professional schools regard undergraduate research experience as an important factor in admissions. Students who plan to enter graduate or professional schools should plan to initiate research or directed readings as early as possible. It is strongly recommended that students contact potential faculty advisors for GN 496 or 496H during their junior year. In some cases, research projects or directed readings during the summer quarter may be possible.

Under unusual circumstances the Genetics Undergraduate Advisory Committee will consider exceptions to these requirements.

Minor in Genetics: Contact the department for requirements.

GEOGRAPHY

	HOURS
AREA IV COURSES RELATED TO MAJOR	30
GGY 101 or 215H	5
Two of the following: GGY 120-120L, 121-121L, 122-122L	10
Foreign language—completion through the third quarter of any one language	10
STA 200	5

The major in geography requires at least 40 hours of geography courses at the 300-400 level and must include GGY 350-350L. A minimum grade of C must be earned in each course. For the A.B. degree, at least 10 hours must be taken in the area of human/regional geography: GGY 320, 358, 412, 434, 442, 444, 447, 448, 453, 459, 460, 462, 463, 472, 468. For the B.S. degree, at least 5 hours, but no more than 10, must be taken from the list of human/regional geography courses above and at least 5 hours must be taken from the list of physical geography courses: GGY 400, 406, 407, 408, 409, 410, GGY(BOT) 413, GGY 417, GGY 425, BOT(GGY) 476.

Requirements for the B.B.A. degree with major in Location Analysis are listed in the

Terry College of Business Combined Major Programs.

Minor in Geography: Contact the department for requirements.

GEOLOGY

	HOURS
AREA IV COURSES RELATED TO MAJOR	30
GLY 125-125L, 126-126L or 235H, 236H	10
Choose from the following: CHM 121, 121L, 122, 122L or 127H, 127L, 128H, 128L; PCS 127-127L, 128-128L or 137-137L, 138-138L; MAT 253, 254, 263H, 264H; Foreign language at the 100-200 level	20

The major in geology includes at least 40 quarter hours of geology courses. Required geology courses are GLY 321, 322, 323, 332, 403, 405, 425; the remaining major hours—and some elective hours—can be fulfilled by other 400-level geology courses. CHM 121 and 121L and 122 and 122L, PCS 127-127L and 128-128L, MAT 254 or STA 421, and a geology field course are specific requirements; since CHM 121 and 121L and GLY 125-125L and 126-126L are prerequisites to some major courses, they are best taken during the student's freshman or sophomore year.

Minor in Geology: Contact the department for requirements.

GERMANIC AND SLAVIC LANGUAGES

	HOURS
AREA IV COURSES RELATED TO MAJOR	30
Foreign language—completion through the fourth quarter of any one language	15
Choose from the following: ANT 102, 212H; ECN 106, 107, 116H, 117H; GGY 101, 215H; PSY 101, 103H; SOC 105, 160, 104H	10
Choose from the following: CLC 120, 121, 150; CML 221, 222, 225H, 226H; ENG 231G, 232G, 233G, 235H, 236H, 237H	5

A student continuing a language taken in high school will be placed in the appropriate course on the basis of scores on the College Entrance Examination Board Scholastic

Achievement Tests and other pertinent information.

No student may receive credit for any course which is a prerequisite to a course for which he or she has already received college credit. Exception may be made only by the head of the department.

Majors in German or Germanic and Slavic Languages must complete forty hours above the GER 221/114H levels. The grade of 2.0 must be earned in each course. Thirty hours of the required forty hours must be courses on the 300-400 level.

Opportunity for study at The University of Erlangen-Nürnberg is usually offered during the summer.

Minors in German and Russian: Contact the department for requirements.

GREEK

See Classics.

HISTORY

	HOURS
AREA IV COURSES RELATED TO MAJOR	30
HIS 111, 121, 122, 251, 252, 215H, 216H, 217H, 253H, 254H	10
Foreign language—completion through the fourth quarter of any one language	10
Choose from the following: ANT 102, 212H; EGN 106, 107, 116H, 117H; GGY 101, 215H; POL 101, 105H; PSY 101, 103H; SOC 105, 160, 104H	10

The major in history includes 40 quarter hours of history beyond the history core curriculum requirement. All courses must be taken at the advanced level (i.e., courses numbered 300 or 400). The major must include at least one advanced course in any *three* of the following areas: Africa, Asia, Western Europe, Eastern Europe, Latin America, and North America. In addition, it must include HIS 495T or any other designated topical course. The major must complete HIS 300M during the junior year and HIS 400S during the senior year. Upon approval of the advisor and endorsement of the Coordinator of Instruction, two advanced courses in a related discipline may be counted toward the major. Honors history majors may substitute HIS 496H, 497H, or 498H in lieu of the special topics requirement, and

they may substitute HIS 499H for HIS 400S when deemed suitable by the advisor and endorsed by the Undergraduate Studies Committee. A minimum of 30 quarter hours of the major must be earned in residence at the University of Georgia.

Minor in History: Contact the department for requirements.

INTERDISCIPLINARY STUDIES

Coordinator: Clifton W. Pannell, Dean's Office, College of Arts and Sciences.

A student with academic interests for which no suitable major is offered by any single department in the Franklin College of Arts and Sciences may pursue an Interdisciplinary Studies (IDS) major. An IDS major plans a program of study and senior thesis with a faculty advisor and an advisory committee, who are chosen by the student and the IDS Coordinator. The Interdisciplinary Studies major consists of a minimum of 40 hours of courses plus a Senior Thesis (1-5 hours) on a topic of special interest. The 40 hours of the major must be drawn from two or more departments of the College of Arts and Sciences. Some programs may include courses from other colleges within the University, although programs of study involving more than 15 hours outside of Arts and Sciences may require special permission. An IDS major may propose her or his own major, or participate in one of several interdisciplinary programs already in place, such as archaeological sciences, geophysics, global studies, neurobiology, and scientific illustration.

Applicants for an IDS major must have completed 45 credit hours of college courses, but not more than 100, with a GPA of 3.00 or higher. Students must maintain at least a 3.00 average on all courses taken in order to remain as IDS majors. Programs that reflect an attempt to "pull something together" near the end of the undergraduate program or to look back and attempt to create a theme to fit courses already completed are not in keeping with the spirit of the IDS major.

The IDS program is a rigorous one that requires early planning on the student's part. The first step for students interested in an IDS major is to contact the Coordinator of the Division of Interdisciplinary Studies for further information.

Minor in Interdisciplinary Cognitive Science: Contact Coordinator of the Division of Interdisciplinary Studies for requirements.

ITALIAN

See Romance Languages.

JAPANESE LANGUAGE AND LITERATURE

Requirements for a major leading to the A.B. degree in Japanese Language and Literature:

Prerequisites: JPN 101 through 202, or equivalent.

In addition to satisfying the College requirements for the A.B., students must take 40 hours choosing from the following courses: 20 hours of Japanese Language: JPN 300 through 413.

10 hours of Asian Literature: CML 460, 461, 462; JPN 450.

10 hours of Asian Culture: CML(ANT) 318; GGY 447, 448; HIS 378, 379, 380H, 385H, 478A, 478B, 478C, 479A, 479B; POL 439; REL 401, 404; a third Asian literature course from CML 460, 461, 462, or JPN 450.

Minor in Japanese Language and Literature: Contact the department of Comparative Literature for requirements.

LATIN

See Classics.

LINGUISTICS

See Linguistics. For specific information regarding the degree requirements for the Bachelor of Arts degree in linguistics, please contact the linguistics advisor in the Department of English, Park Hall.

MARINE SCIENCES

In January 1993, the College of Arts and Sciences activated a new Department of Marine Sciences within the School of Marine Programs. The Department of Marine Sciences currently offers undergraduate courses in marine biological, chemical, and physical science. Students have access to the extensive field and laboratory facilities of the School of Marine Programs in Athens and at Sapelo Island, Skidaway Island, and Brunswick on the Georgia coast. At the time of this writing,

the College of Arts and Sciences is considering a proposal to offer an undergraduate major leading to the B.S. in Marine Sciences.

MATHEMATICS

HOURS

AREA IV COURSES RELATED TO MAJOR

30

MAT 253, 254, 255, 263H, 264H, 265H 15

Foreign language—completion through the second quarter of any one language 5

Choose from the following: AST 107-107L, 108-108L; BIO 103-103L, 104-104L or 107-107L, 108-108L; CHM 121, 121L, 122, 122L or 127H, 127L, 128H, 128L; GLY 125-125L, 126-126L or GGY 120-120L, 121-121L, 122-122L; PCS 127-127L, 128-128L or 137-137L, 138-138L 10

All mathematics majors must complete the calculus sequence (through MAT 255 or 265H or 275H), and should do so as soon as possible during the freshman-sophomore years. These courses (and lower numbered mathematics courses) cannot be used as part of the major program of study.

The 40-hour major program may include MAT 256 and MAT 358, but should include MAT 350 and 390. Every major must take (a) at least one quarter of algebra (either MAT 437 or 440) and MAT 465; (b) at least two of the following two-quarter sequences: MAT 403-404(-405), 414-415, 420-421(-422), 431-432(-433), 435-436, 437-438(-439) (or 440-441(-442), 447-448, 467-468, 471-472(-473); and (c) sufficiently more courses, subject to approval of the advisor, to bring the number of hours up to 40.

The complete program must be approved by a departmental advisor. (N.B.: if a student chooses to use MAT 437-438 or 440-441 as one of his two-quarter sequences, any upper-level mathematics course may be combined with MAT 465 to count as a two-quarter sequence.)

Minor in Mathematics: Contact the department for requirements.

MICROBIOLOGY

HOURS

AREA IV COURSES RELATED TO MAJOR 30

BIO 107-107L, 108-108L 10

CHM 121, 121L, 122, 122L or 127H, 127L, 128H, 128L 10

PCS 127-127L, 128-128L or 137-137L, 138-138L 10

Requirements for a major in microbiology: The Bachelor of Science degree with a major in microbiology requires 20 hours of microbiology including MIB 350-350L, 409 and other 400 level microbiology courses. Introductory Biochemistry (BCH(BIO) 310) and Genetics (GN(BIO) 320) are required of all majors.

Students majoring in microbiology with the intention of applying for examination for admission to the National Registry of Microbiologists should consult the departmental undergraduate advisor concerning courses required for eligibility.

Programs of study are available for pre-medical, pre-dental and pre-veterinary medicine students.

MUSIC

HOURS

AREA IV COURSES RELATED TO MAJOR 30

MUS 110, 111, 112, 212, 213, 214 18

MUS 182ABC 6

MUS 288, 289, 290, 295 6

All prospective music majors are required to take an admission audition in applied music. This audition is scheduled through the Undergraduate Studies Office of the School of Music and is evaluated by a faculty jury in the appropriate area of applied music. Students are expected to be prepared to play or sing representative works from their repertoire. Further requirements include: 1) pass a keyboard proficiency test, 2) participate in the performing organization appropriate to the major performance medium each quarter (e.g., string majors participate in orchestra, vocal majors participate in choral organizations, etc.), and 3) attend and participate in a minimum number of recitals per quarter.

For information regarding specific degree requirements for the Bachelor of Music, please contact the Undergraduate Coordinator in the School of Music.

Minor in Music: Contact the department for requirements.

PHILOSOPHY

HOURS

AREA IV COURSES RELATED TO MAJOR 30

Choose one course from the following: PHY 100, 101, 214H, 215H, 102, 202H, 110, 210H, 203, 205, 205H 5

Choose from the following: CLC 120, 121; CML 221, 222, 225H, 226H; GGY 101, 215H; HIS 111, 215H, 121, 216H, 122, 217H; LIN 210; REL 115, 116, 225H 10

Choose from the following: ANT 102, 212H; AST 107-107L, 108-108L; BIO 103-103L, 104-104L, 107-107L, 108-108L; CHM 111, 111L, 112, 112L or 121, 121L, 122, 122L or 127H, 127L, 128H, 128L; ECN 106, 107, 116H, 117H; GLY 115-115L, 116-116L or 125-125L, 126-126L; PCS 127-127L, 128-128L; PSY 101, 103H; SOC 105, 104H 10

Foreign language—completion through the fourth quarter of any one language 5

For the philosophy major, the program must total 40 hours of coursework at the 300 level or higher with a PHY prefix or in a cognate area. At least 20 hours on the program must be in courses with the PHY prefix taken at the University. At least 10 hours must be in the history of philosophy. No more than 10 hours can be in a cognate area. All cognate area courses must have clear relevance to philosophy. Majors are strongly encouraged to include PHY 361 on the program.

A student majoring in philosophy should notify the Department of his or her local mailing address so that invitations to departmental events can be issued.

Minor in Philosophy: Contact the department for requirements.

PHYSICS AND ASTRONOMY

	HOURS
AREA IV COURSES RELATED TO MAJOR	30
PCS 127-127L, 128-128L or 137-137L, 138-138L, 229-229L, 239-239L	15
CHM 121, 121L, 122, 122L or 127H, 127L, 128H, 128L	10
MAT 255, 265H	5

Students intending to pursue a major in either physics or physics and astronomy should begin calculus as soon as possible and complete it through MAT 255. They should also begin the PCS 137-137L, 138-138L, 239-239L sequence as soon as they have taken MAT 253. Majors in physics and astronomy should also include AST 107-107L, 108-108L or AST 291 or 297H-297L in their freshman-sophomore schedules. A grade of C or better in PCS 137-137L, 138-138L, and 239-239L (or PCS 127-127L, 128-128L, and 229-229L) must be earned before a student enrolls in PCS courses numbered above 300. A grade of C or better must be earned in AST 107-107L, 108-108L, or AST 291, or AST 297H-297L before enrolling in AST courses numbered above 300.

The 40 hours of the major for the degree B.S., major in physics, includes MAT 358, PCS 332-332L, 333-333L, 404, 420, 430, and 450; the remaining nine hours may be chosen, in consultation with the undergraduate advisor, from departments in the Division of Physical Sciences. The major in physics and astronomy consists of MAT 358, PCS 333-333L, 404, 420, 450, AST 392, 393, 396, and five hours of 400-level astronomy. Majors should contact the departmental advisors concerning more rigorous courses of study in physics (B.S.P.C.S. degree) and physics and astronomy (B.S.P.A. degree) leading to graduate work and for information about grade standards in upper level courses.

POLITICAL SCIENCE

	HOURS
AREA IV COURSES RELATED TO MAJOR	30
POL 101, 105H	5
Foreign language—completion through the fourth quarter of any one language	15
HIS 111, 121, 122, 251, 252, 215H, 216H, 217H, 253H, 254H	10

Political science majors take a minimum of 40 quarter hours or eight courses in political science beyond POL 101 or 105H (American Government), including 10 hours in Theory and Method, 10 hours in American Studies, 10 hours in Global Studies, and 10 hours in special courses or additional courses elected from the three broad areas mentioned above. Majors may count only 10 hours of coursework at the 200 level toward the 40-hour minimum requirement for the political science major. Twenty (20) hours of political science courses numbered 300 or higher must be taken in residence.

Majors and non-majors are generally encouraged to take either the 200-level course in an area or the 300-level course in a particular field before taking 400-level courses in the area or field.* Students interested in receiving credit for internships (POL 350) should inquire with the Undergraduate Coordinator well in advance, since there are specific course prerequisites and other requirements for each internship.

Minor in Political Science: Contact the department for requirements.

PSYCHOLOGY

	HOURS
AREA IV COURSES RELATED TO MAJOR	30
PSY 101, 103H, 252, 253, 254, 256, 257, 258	5
Choose from the following: ANT 102, 212H, ECN 106, 107, 116H, 117H; GGY 101, 215H; POL 101, 105H; SOC 105, 160, 104H	10
Choose from the following: CLC 120, 121, 150; CML 221, 222, 225H, 226H; ENG 231G, 232G, 233G, 235H, 236H, 237H	10
Choose from the following: BIO 103-103L, 104-104L, 107-107L, 108-108L; CS 201-201L; STA 200, 210H, 211H	10

The major includes 1) Methods courses: PSY 298, 299; 2) Core courses: 5 hours from PSY 307, 317, 327, 337; 5 hours from PSY 347, 357, 367, 377; and 5 additional hours from among all core courses; 3) Electives: 15 hours of approved psychology or related (cognate) electives at the 300-level or higher.

*Since most students take POL 101 or its equivalent in order to satisfy the U.S. Constitution and Georgia Constitution requirements, there is no 200-level introduction to American studies.

No student may receive credit toward the major for any psychology course taken without its prerequisite(s). Exception may be made only by the department head.

Minor in Psychology: Contact the department for requirements.

RELIGION

	HOURS
AREA IV COURSES RELATED TO MAJOR	30
Foreign language—through the fourth quarter of one language. Choose from: Arabic, Chinese, French, German, Greek, Hebrew, Italian, Japanese, Latin, Portuguese, Russian, Spanish, Swahili	20
Choose one from the following: CML 221, 222; CLC 120, 121, 150	5
Choose one from the following: ANT 102, 212H; ECN 106, 107, 116H, 117H; GGY 101, 215H; HIS 111, 215H, 216H; LIN 210; PHY 101, 215H; PSY 101, 103H; SOC 105, 104H; SPC 108, 109, 218H, 219H	5

A major in religion consists of 40 hours (at least 20 of which must be in residence) in courses numbered 300 or higher prefixed REL. Exceptions may be made by petition to the Religion Faculty. Of these hours, at least five hours must be in Western Religion, at least five hours must be in a Non-Western religious tradition, and at least five hours must be in Theology or Philosophy of Religion. REL 115, 116, and 225H are recommended to satisfy part of the philosophy, religion, and fine arts requirement, but are not considered part of either the major or minor.

Students wishing to minor in religion should notify the Department so that invitations to Departmental events can be issued.

All these programs of study are subject to approval by a major advisor. Students are urged to request an advisor as soon as they decide upon their major.

Minor in Religion: Contact the department for requirements.

ROMANCE LANGUAGES

	HOURS
AREA IV COURSES RELATED TO MAJOR	30
Foreign language—completion through the fourth quarter of any one language	15
Choose from the following: ANT 102, 212H; ECN 106, 107, 116H, 117H; GGY 101, 215H; PSY 101, 103H; SOC 105, 160, 104H	10
Choose from the following: CLC 120, 121, 150; CML 221, 222, 225H, 226H; ENG 231G, 232G, 233G, 235H, 236H, 237H	5

A student continuing a language taken in high school must take either the language achievement test of the College Entrance Examination Board or the placement test administered by the University of Georgia Counseling and Testing Center. Students will be placed in the appropriate course on the basis of their scores and other pertinent information. The Advanced Placement examinations in Spanish and French Language and Literature may also be submitted for placement and possible credit.

No student may receive credit for any course which is a prerequisite to a course for which college credit has already been received. Exception may be made only by the head of the department.

Certain courses in the Department of Romance Languages are not open to native speakers. A native speaker is defined as a person who graduated from a secondary school in which the language of instruction was French, Italian, Portuguese, or Spanish.

Majors: A major in French or Spanish ordinarily consists of 40 quarter hours of coursework at or above the 300 level including the following: French or Spanish 301 (or 302H) and 303 (or 304H), plus at least two of French 310, 311, 312 or Spanish 310, 311, 312, and 313. Additionally, students will take four courses in French or Spanish literature, language, and civilization at the 300, 400, or 500 level, including French or Spanish 306.

A major in Italian consists of 40 quarter hours of coursework at or above the 300 level, including the following: Italian 301 and 306, plus at least two of Italian 310, 311, 312. Additionally, students will fill out the major with courses in advanced Italian literature,

language, and civilization at the 300 or 400 level.

A major in Romance Languages (French, Italian, Spanish, Portuguese) consists of 30 hours of coursework in the chosen major language and 20 hours in the designated minor language. All of these courses must be at the 300 level and above.

All coursework for these majors must have earned a minimum grade of C.

Minor in French, Italian, Portuguese, or Spanish: Contact the department for requirements.

Graduate School Reading Knowledge Requirement: A grade of B or better in French or Spanish 350 will satisfy the reading knowledge requirement of the Graduate School. Italian or Portuguese 360 may also be accepted by some departments to satisfy this requirement.

Undergraduate Literature Requirement: Students may take any of the following courses to satisfy the literature requirement: FR 303, 304H, 310, 311, 312, 322H; ITA 310, 311, 312; POR 312, 313; SP 303, 304H, 310, 311, 312, 313, 321H.

SOCIOLOGY

HOURS

AREA IV COURSES RELATED TO MAJOR 30

SOC 105 or 104H 5

Choose from the following: ANT 102, 212H; ECN 106, 107, 116H, 117H; GGY 101, 215H; POL 101, 105H; PSY 101, 103H; SOC 160 10

Choose from the following: HIS 111, 121, 122, 251, 252, 215H, 216H, 217H, 253H, 254H; LIN 210; MAT 105, 106; PHY 101, 102, 110, 215H; STA 200, 210H, 211H 15

The major includes SOC 356 and 419 or 420, and six electives (four of which must be at the 300 level or higher) selected in consultation with the departmental advisor.

Minor in Sociology: Contact the department for requirements.

SPANISH

See Romance Languages.

SPEECH COMMUNICATION

HOURS

AREA IV COURSES RELATED TO MAJOR 30

SPC 108, 109, 218H, 219H, 240, 250, 251, 256, 267 15

Foreign language—completion through the fourth quarter of any one language 15

For the A.B. degree in speech communication, a student is required to take SPC 101, 108 or 109 (or honors equivalent, SPC 218H or 219H). In addition, for the forty hour major in speech communication, a student is required to take the following two courses: SPC 321 Empirical Research Methods in Interpersonal Communication; and SPC 360 Introduction to Rhetorical Criticism. To complete requirements for the major, a student will select six additional courses in speech communication, only two of which may be a 200-level course. These requirements became effective fall quarter 1993.

Minor in Speech Communication: Contact the department for requirements.

STATISTICS

HOURS

AREA IV COURSES RELATED TO MAJOR 30

STA 200 or 210H, CS 201-201L, MAT 253, 255 15

Foreign language—completion through the second quarter of any one language 5

Choose from the following: AST 107-107L, 108-108L; BIO 103-103L, 104-104L; CHM 121, 121L, 122, 122L or 127H, 127L, 128H, 128L; GLY 125-125L, 126-126L or GGY 120-120L, 121-121L, 122-122L; PCS 127-127L, 128-128L or 137-137L, 138-138L 10

Students may elect to earn either a B.S. or an A.B. degree in statistics. The departmental requirements are the same in either case with 40 hours of major coursework and an additional 20 hours of non-major requirements. No course in which a D or F is made can be used as a major course.

As prerequisites, all statistics majors will be required to take CS 201-201L, MAT 253, MAT 254, and MAT 255. Each student then selects an option in either (a) Statistical Methods, or (b) Mathematical Statistics. For (a) the required courses are STA 421, STA 422, MAT 256, (MAT)STA 471 and STA 451 and for (b) MAT 256, MAT(STA) 471, (MAT)STA 472, STA 451, STA 452, MAT 358, MAT 350, and MAT 390 are required. Additional courses for each option should be selected from other 400-level statistics or mathematics courses.

A detailed description of course requirements can be obtained from the departmental office, 204 Statistics Building.

Minor in Statistics: Contact the department for requirements.

WOMEN'S STUDIES

Qualified students in the College of Arts and Sciences may major in women's studies through the Interdisciplinary Studies Degree Program (IDS). Students in any school or college may pursue a minor or a certificate in women's studies. A minor in women's studies consists of 20 quarter hours: WS 401 (prerequisite: WS 201 or 211) and three additional courses, one from each of three areas. The certificate consists of 30 quarter hours, which may be drawn from a student's core, major, or elective offerings. All candidates must include 1) *either* WS 201 *or* WS 211 *and* 2) WS 401; the four remaining courses are chosen from WS courses and from approved women's studies courses in other departments. Complete information and enrollment forms may be obtained from the Undergraduate Advisor at the Women's Studies Program Office, 230K Main Library.

Other Degree Programs

BACHELOR OF SCIENCE IN CHEMISTRY

The curriculum for this degree offers training in the field of chemistry and its allied sciences for students who desire to enter commercial or government laboratories or the teaching profession, to become associated with chemical industries in a non-technical position, or to pursue graduate work in chemistry in order to enter some field of research or college teaching.

All students who satisfactorily complete this curriculum are certified by the Department of Chemistry to the American Chemical Society as having completed the undergraduate training recommended by the A.C.S. An average of 2.5 or higher is required in chemistry and in other academic subjects in both the lower and upper division programs. No transfer students will be accepted as candidates for this degree later than the beginning of their junior year. Students wishing to obtain this degree should enter the University no later than the beginning of their sophomore year. For further information, inquire of the head of the Department of Chemistry.

BACHELOR OF SCIENCE IN PHYSICS OR IN PHYSICS AND ASTRONOMY

The curricula for these degrees are designed to give the best preparation possible to those students who desire to pursue a career in physics or astronomy. They provide the necessary foundation for those students who wish to do graduate work toward advanced degrees so that they may enter some field of research or college teaching, for those who wish to seek employment in commercial and governmental laboratories, and for those interested in entering the teaching profession at the high school level.

In the physics degree program no grade below 2.0 in any physics or mathematics course is creditable towards the degree and a grade average of 2.5 or higher is required in these courses. In the physics and astronomy degree program no grade below 2.0 in any physics or astronomy or mathematics course is creditable toward the degree and a grade average of 2.5 or higher is required in these courses. For further information, in-

quire of the head of the Department of Physics and Astronomy.

BACHELOR OF MUSIC

The Bachelor of Music degree is a professional degree in music, specifically designed to comply with the guidelines of the National Association of Schools of Music. Majors are possible in applied music performance, composition, theory, music education and music therapy. For specific requirements for a Bachelor of Music degree, the student should inquire of the director of the School of Music.

BACHELOR OF SCIENCE (PRE-MEDICINE) AND BACHELOR OF SCIENCE (PRE-DENTISTRY)

A baccalaureate degree is generally required for admission to a school of medicine or dentistry; hence most students are advised to follow the regular B.S. or A.B. programs outlined earlier in this section and to include those courses prerequisite for admission to the medical or dental school of their choice. However, students of outstanding ability who are admitted to the School of Medicine or the School of Dentistry, Medical College of Georgia, before completion of the baccalaureate degree may be awarded the B.S. (Pre-Medicine) or the B.S. (Pre-Dentistry) from the University upon successful completion of the first year in professional school, if they satisfy the requirements. (Neither the satisfactory completion of the program nor a baccalaureate degree assures admission to any medical or dental school.) For information on the requirements and general pre-medical and pre-dental advising, see the Coordinator of Health Sciences Advising of the College of Arts and Sciences.

BACHELOR OF SCIENCE (PRE-VETERINARY MEDICINE)

Advisor: Dr. Dwight B. Coulter, College of Veterinary Medicine

This program is designed for those students who wish to obtain both the B.S. and D.V.M. degrees. Under this program students may, after the successful completion of their first year at the University of Georgia College of Veterinary Medicine, receive the B.S. degree. The student considering this option should realize that competition for admission to the College of Veterinary Medi-

cine is such that there are two people applying for each available position. Students should therefore have one or more alternative careers in mind in the event that they are not accepted. It is strongly recommended that the student be enrolled in an undergraduate degree program.

BACHELOR OF ARTS OR BACHELOR OF SCIENCE (WITH PROVISIONS FOR A PROFESSIONAL SECONDARY SCHOOL TEACHING CERTIFICATE)

Either degree requires that some courses be taken in both the College of Education and the Franklin College of Arts and Sciences. Students interested in meeting teacher certification requirements should inquire at both the Student Services Center, College of Education, and in the Franklin College of Arts and Sciences to determine their appropriate advisors. Each student's program must then have the approval of both advisors and the dean's office of each college.

COMBINED BACHELOR/MASTER DEGREE

Certain exceptional students entering the University each year with unusual academic achievements may have potential to plan a curriculum leading directly to a master's degree during the four-year period normally used to complete the baccalaureate. This combined bachelor/master degree objective is perhaps the greatest academic challenge offered by the University.

A student interested in this degree objective submits credentials for evaluation to the Honors Program. Candidates should have obtained at least 25 credits (English, foreign languages, mathematics, history, political science, biology, chemistry, and others) through the Advanced Placement Program. Each candidate should:

- be ready to begin sophomore studies during the first year here;
- have balanced Scholastic Aptitude Test (SAT) scores totaling 1300 or above;
- come with a general inclination for a major;
- exhibit motivation;
- provide supporting credentials that indicate other superior academic achievements.

Pre-Professional Programs

PRE-JOURNALISM PROGRAM

Advising in the College of Arts and Sciences

To be admitted to the professional program in the College of Journalism and Mass Communication, a student must have completed a minimum of 75 quarter hours and be currently enrolled in a sufficient number of hours at the University of Georgia to obtain 90 hours (these courses must be successfully completed during the quarter). Other requirements are listed in the College of Journalism and Mass Communication section of this Bulletin. Details regarding the Bachelor of Arts in Journalism (A.B.J.) degree requirements also appear in that section.

PRE-NURSING PROGRAM

Advisor: Ms. Jane G. Hudson, Franklin College of Arts and Sciences

The University of Georgia does not offer a degree in pre-nursing or nursing. Advising is available for students who wish to learn more about the freshman and sophomore prerequisite courses for a nursing curriculum.

Twelve colleges and universities in Georgia offer a baccalaureate degree in nursing. Students may take their required pre-nursing core courses at the University of Georgia, but must apply and, if accepted, transfer to a school that offers a major and degree in nursing.

PRE-PHARMACY PROGRAM

Advisor: Dr. Jeanne Prine, College of Pharmacy

To be admitted to the professional program in the College of Pharmacy, the student must have completed the 90 quarter hours of pre-pharmacy coursework. Applicants should take the Pharmacy College Admission Test during the fall term immediately prior to their entrance date. Students with a high academic average, having 90 hours of credit, may be admitted with not more than 5 quarter hours of deficiencies in non-science required courses, provided such deficiencies will be completed before the second professional year.

For complete information concerning the pre-pharmacy core curriculum requirements, refer to the College of Pharmacy section. For information concerning the pharmacy professional program, refer to the *College of Pharmacy Bulletin*, available by writing: Dean, College of Pharmacy, The University of Georgia, Athens, Georgia 30602.

Application should normally be made to the dean of the College of Pharmacy during the Fall term of the sophomore year.

PRE-THEOLOGY PROGRAM

Students planning to enter theological seminaries following graduation from the University should consult the appropriate advisor in the Department of Religion no later than the beginning of their junior years.

PRE-MEDICINE AND PRE-DENTISTRY

Coordinator of Advising: Dr. Norman G. Sansing, Franklin College of Arts and Sciences

The Franklin College does not offer a degree in pre-medicine or pre-dentistry, but a complete advising program is available in the advising office, New College, to students wishing to enter a medical or dental school after completion of a regular bachelor's degree.

PRE-LAW

Advisor: Ms. Wanda Wilcox, Franklin College of Arts and Sciences

A complete advising program is available to any student who considers attending law school after completion of a bachelor's degree. The Franklin College's Pre-Law Guide may be obtained by mail or at 106 New College.

PRE-VETERINARY MEDICINE

Advisor: Ms. Jane G. Hudson, Franklin College of Arts and Sciences

A complete advising program is available in the advising office, New College, to students who plan to apply to the College of Veterinary Medicine. See the College of Veterinary Medicine section of this Bulletin for a description of the admission procedures for this College.

ALLIED HEALTH FIELDS

The University of Georgia does not offer majors or degrees in any allied health area. Most four year degree programs in an allied health area such as nursing, occupational or physical therapy, dental hygiene, medical technology, and others require two years of general studies courses and two years of specialized courses. Students may take the general studies, or core, courses at the University of Georgia. They then must apply and, if accepted, transfer to a school that offers a major and degree in the particular allied health area in which they are interested.

Undergraduate Certificate Programs

AFRICAN STUDIES PROGRAM

Director: B. Ikubolajeh Logan, Department of Geography

The certificate program in African Studies is designed for the student who wishes to learn about Africa generally, and to focus on a specific aspect of the socioculture of the region, for example, language, religion, or literature. In addition to providing regional education, the certificate program offers students an opportunity to obtain qualification that will complement majors in a wide array of disciplines including anthropology, sociology, geography, business, journalism, and education.

The certificate program consists of 30 credit hours divided into 15 core courses and 15 electives.

(a) *CORE COURSES* (15 hours from the following list):

GGY (ANT/CML/HIS/SOC) 210. Introduction to Africa. 5 hours (required)

Two additional courses chosen from the following:

ANT 345. Africa: Peoples and Institutions. 5 hours.

CML 315. Introduction to Modern African Literature. 5 hours.

GGY 434/634. Geography of Sub-Saharan Africa. 5 hours.

HIS 241. Introduction to the History of Africa: Earliest Times to 1600. 5 hours.

HIS 242. Introduction to the History of Africa: 1600 to the Present. 5 hours.

SWA 101. Elementary Swahili I. 5 hours.

SWA 102. Elementary Swahili II. 5 hours.

(b) *ELECTIVES* (15 hours from the following list):

ANT 308. Introduction to Paleo-anthropology. 5 hours.

ANT 345. Africa: Peoples and Institutions. 5 hours.

ANT 490/690. Special Topics in Anthropology: Disease, Ecology, and Human Behavior in Africa. 5 hours.

ANT 806. Primate and Human Ecology. 5 hours.

CML 802. Seminar in Literary Periods and Genres. 5 hours.

CSS 440/640. Crop Ecology. 5 hours.

FRS 416. Environmental Monitoring. 5 hours.

GGY 412/612. Geography of Development. 5 hours.

GGY 850. Seminar in Economic Development and Human-Environment Relationships. 5 hours.

HIS 241. Introduction to the History of Africa: Earliest Times to 1600. 5 hours.

HIS 242. Introduction to the History of Africa: 1600 to the Present. 5 hours.

HIS 383. Southern Africa 1600-1902. 5 hours.

HIS 384. 20th Century Southern Africa. 5 hours.

HIS 400S. Senior Seminar in History: East African Studies. 5 hours.

HIS 481/681. The History of Eastern Africa: Earliest Times to 1800. 5 hours.

HIS 482. History of Eastern Africa: 1800-1900. 5 hours.

HIS 495T. Topics in History: Conflict in Southern Africa. 5 hours.

HIS 495T. Topics in History: Colonialism and Christianity in Africa. 5 hours.

HIS 495T. Topics in History: Introduction to the History of African Comparative Law. 5 hours.

HIS 815W. Historiography. 5 hours.

HIS 893G. The Theory and Practice of History. 5 hours.

LIN(CML) 487/687. Language, Gender, and Culture. 5 hours.

MUS 302. World Music Survey. 5 hours.

MUS 440/640. Non-Western Music. 5 hours.

POL 438. African Political Systems. 5 hours.

POL 832A. Seminar in Developing Political Systems. 5 hours.

SWA 101. Elementary Swahili I. 5 hours.

SWA 102. Elementary Swahili II. 5 hours.

SWA 201. Intermediate Swahili I. 5 hours.

SWA 202. Intermediate Swahili II. 5 hours.

SWA 399. Directed Study in Swahili Language and Literature. 5 hours.

Students can simultaneously satisfy the requirements of the certificate program while completing their college and university electives requirements.

INSTITUTE FOR AFRICAN AMERICAN STUDIES

Director: Dr. R. Baxter Miller, Institute for African American Studies

The Institute for African American Studies provides a central focus for study of the impact of African American contributions upon human culture. The Institute is dedicated to the production of creative research about the achievements of African Americans and to exciting instruction for a diverse community of thinkers. In addition, the Institute serves as a cultural repository and resource for the citizenry of Georgia.

Through cooperation with existing departments, a certificate is offered. Plans for a major are being written. Any student in the University may earn the certificate by taking Introduction to African American Studies (AAM 200), African American Folklore (AAM 388), African American Social Change (AAM(POL) 420), and Seminar in African American Studies (AAM 425), plus an additional two courses approved by the Director. A total of 30 hours is required. Please note that plans are underway to establish coherent packages of courses that would total the 30 hours now required. The new opportunity would require only two basic courses (AAM

200 and 425) for a total of 10 hours and an additional 20 hours to be taken from a selected list of courses that emphasize African American history, culture or politics, and creative arts. Each student will be encouraged to specialize either in 1) History and Culture, 2) Social and Political Experiences, or 3) Literature, Language, and the Arts. At least two courses (10 hours) beyond the basic courses will be taken in the division chosen and at least one other course will be taken in each of the remaining two divisions.

In addition to the certificate, the program sponsors events that support a quality education. A major in African American Studies is available through Interdisciplinary Studies. Many students of the Institute may be interested in professional study and scholarly research beyond the undergraduate level. Others might begin to lay out a systematic plan for thoughtful public service. All should demonstrate the critical thinking and astute judgment facilitated by humane education. Further information may be obtained about African American Studies from the Director of the Institute for African American Studies.

ENVIRONMENTAL ETHICS CERTIFICATE PROGRAM

Coordinator: Peter G. Hartel, Department of Crop and Soil Sciences

Information about this program can be found in the College of Agricultural and Environmental Sciences section of this *Bulletin* on page 89.

FRENCH STUDIES PROGRAM

Coordinator: Jean-Pierre J. Piriou, Department of Romance Languages

The French Studies Program at the University of Georgia offers the student an opportunity to share in a current national interest in French Studies and, at the same time, to develop a humanistic understanding of French civilization through the study of the French language, history, art, government, geography, literature, and philosophy.

The French Studies Program is based on a departmental major leading to the Bachelor of Arts or Bachelor of Science degree. The curriculum in French Studies with a departmental major includes the prescribed number of credit hours for the baccalaureate degree as well as 40 quarter hours of French content courses chosen from at least three

fields. (Courses taken within the major may be counted in fulfillment of this requirement but no more than 20 hours in one discipline will be accepted.) Interested students must apply and be admitted to the program before the end of the first quarter of their sophomore year. Students completing the requirements of this special program of study will receive the Certificate in French Studies upon graduation.

Applications for admission to the program and further information may be obtained from the coordinator of the French Studies Program.

GERMAN STUDIES PROGRAM

Coordinator: Ralf R. Nicolai, Department of Germanic and Slavic Languages

The German Studies Program, established in 1979, offers the student a thorough and systematic study of German which will augment his or her particular discipline or major. The study of foreign languages, German in particular, is becoming increasingly important and greatly enhances the student's possibilities for entering and advancing in a broad variety of careers and occupations.

The student may earn the German Language Certificate and/or the Certificate in German Studies in conjunction with his or her work for the Bachelor's Degree. The former emphasizes the study of the language with primary emphasis on conversation, composition, stylistics and techniques of translation. The latter program is interdisciplinary and is designed to integrate the study of German with other disciplines such as art, economics, geography, history, music, philosophy, political science, etc. Interested students are urged to apply and be admitted to the program of their choice before the end of their sophomore year.

Further information may be obtained from the coordinator of the German Studies Program.

GLOBAL STUDIES PROGRAM

Coordinator: William O. Chittick, Department of Political Science

The Global Studies Program offers students an opportunity to prepare themselves broadly for international careers. The program consists of a general core (15 hours), a usable foreign language (10 hours in conversation and composition) and a geographic and functional specialty (25 hours).

The interdisciplinary core is designed to provide a global perspective on living in an increasingly complex world. The foreign language requirement enhances the ability to communicate in a global context. The geographic specialty ensures some appreciation for cultures other than our own, such as Africa, the Americas, Asia, and Europe. Finally, the functional specialty enables us to understand and become engaged in transnational activity affecting one or more global issues; e.g., arms and security, development, trade and economic interdependence, energy, environment, food, human rights, and population.

With careful planning most students can earn the Certificate in Global Policy Studies by taking only courses they already need to satisfy requirements for the baccalaureate degree. Since the global studies requirements involve both lower and upper division courses, it is advantageous for students to plan their global studies coursework and incorporate it into their general program of study as early as possible. Interested students will be asked to develop a special program of study which satisfies the certificate requirements and has the approval of their academic advisor and the Center for the Study of Global Issues, GLOBIS. Students completing this special program of study will receive the Certificate in Global Studies upon graduation.

The following courses are representative of those which may be taken in fulfillment of the core requirement for the Certificate in Global Policy Studies:

ANT 310. Peoples of the World. 5 hours.

GGY 101. Introduction to Human Geography. 5 hours.

POL 321. Introduction to Global Studies. 5 hours.

REL 116. Introduction to the Major Religious Perspectives of Mankind. 5 hours.

Applications for admission to the program and further information may be obtained from the Center for the Study of Global Issues.

LATIN AMERICAN AND CARIBBEAN STUDIES PROGRAM

The Latin American and Caribbean Studies Program was established to coordinate and develop facilities at the University to provide interdisciplinary preparation for students who are planning careers that require specialized knowledge of the Latin American republics and the Inter-American system.

The Latin American and Caribbean Studies program is based on a departmental major leading to the Bachelor of Arts degree. The curriculum in Latin American and Caribbean Studies with a departmental major includes the degree as well as 40 quarter hours of Latin American content courses chosen from at least four fields. Courses taken within the major may be counted in fulfillment of this requirement. Students completing the requirements of this special program of study will receive the Certificate in Latin American and Caribbean Studies upon graduation. Interested students must apply and be admitted to the program before the end of their sophomore year.

Among those courses approved for credit toward the Certificate in Latin American and Caribbean Studies are:

ANT(HIS) 131. An Introduction to Latin America. 5 hours.

ANT 343. Indians of Mexico and Central America. 5 hours.

HIS 331F. Latin American Civilization. 5 hours.

POR 312. Brazilian Literature to the End of the 19th Century. 5 hours.

POR 313. Brazilian Literature from the End of the 19th Century to the Present. 5 hours.

SP 312. Spanish American Literature to the End of the 19th Century. 5 hours.

SP 313. Spanish American Literature from the End of the 19th Century to the Present. 5 hours.

SP 411. Spanish American Culture and Civilization. 5 hours.

SP 481. Modernism. 5 hours.

SP 491. Contemporary Spanish-American Literature. 5 hours.

Applications for admission to the program and further information may be obtained from the coordinator of the Latin American and Caribbean Studies Program.

MEDIEVAL STUDIES PROGRAM

Coordinator: Joseph Berrigan, Department of History

Students of the medieval period, whatever their area, have discovered that an interdisciplinary approach is necessary to achieve an expertise in, and an understanding of, their field. The University of Georgia Medieval Studies Program, established in 1974, is intended as an aid and an official means whereby undergraduate or graduate students can complete their degree in one of the established disciplines, along with a concentration in interdisciplinary medieval studies.

For the undergraduate who wishes to specialize in Medieval Studies, the program offers 20 hours within a traditional department combined with another 20 in related areas. The individual student program is developed in consultation with a major professor and is then approved by the Steering Committee of the Medieval Studies Program. Upon completion of this program, the A.B. candidate is awarded the Certificate in Medieval Studies as well as the diploma.

The Certificate in Medieval Studies could include credit for any of the following courses:

ART 493B. Early Medieval Art. 5 hours.

CML 411. Medieval European Literature. 5 hours.

ENG 423T. Medieval Literature. 5 hours.

HIS 344M. Medieval Civilization. 5 hours.

HIS 445F. Medieval England, 1066-1485. 5 hours.

HIS 445M. Medieval Intellectual Survey. 5 hours.

MUS 321. History of Music I. 3 hours.

REL 442. History of Christian Theology, Medieval. 5 hours.

WOMEN'S STUDIES PROGRAM

Director: Patricia Del Rey, 542-2846

The Women's Studies Program, established in 1977 and restructured in 1988, offers students an interdisciplinary perspective on women. Traditional academic disciplines have devoted little systematic attention to women's experiences and contributions. Feminist scholars have begun to challenge established fields to be more inclusive of the works of women and to examine the differential impact of political, economic, and social

systems on gender. Like the women's studies minor and major (through Interdisciplinary Studies), the certificate in women's studies exposes students to new scholarship on women emerging in different fields, and in doing so rectifies omissions in the existing curriculum.

Any undergraduate at the University may earn the 30-hour certificate by completing 1) *either* **WS 201. Introduction to Women's Studies or WS 211. Multicultural Perspectives on Women in the United States** and 2) **WS 401. Introduction to Feminist Theory**, and four other approved courses. Courses taken within the student's major may be counted in fulfillment of this requirement. A student must achieve a C or better for a course to be included. No more than 10 quarter hours may be taken in one department. No more than 10 quarter hours may be transferred from another institution.

Among the courses approved for credit toward the certificate are

- ART 403. Women in Art.** 5 hours.
- CFD 462. Women in the Family and Society.** 5 hours.
- CLC 411. Gender and Greek Religion.** 5 hours.
- CML 314. Introduction to Early Women Writers.** 5 hours.
- ENG 330. Women in Literature.** 5 hours.
- HIS 330F. History of European Women.** 5 hours.
- HIS 415W. Women in American History and Culture.** 5 hours.

HIS 479B. Women in Japanese History. 5 hours.

HPB 315. Issues in Women's Health. 5 hours.

JRL 540. Race, Gender, and the Media. 5 hours.

LIN 487. Language, Gender, and Culture. 5 hours.

LS 450. Employment Law. 5 hours.

MUS 425. Women and Music. 5 hours.

PES 525. Women and Sport. 5 hours.

PHY 324. Feminist Philosophy. 5 hours.

PSY 410. Psychology of Women. 5 hours.

SOC 328. Sociology of Gender. 5 hours.

WS 399. Directed Studies in Women's Studies. 1-5 hours.

WS 402. Seminar in Advanced Feminist Studies. 1-5 hours.

WS 410. Lesbian and Gay Studies. 5 hours.

WS 411. Gender, Race, and Class. 5 hours.

WS 412. Biology and Politics of Women's Reproduction. 5 hours.

WS 425. Special Topics in Women's Studies. 5 hours.

The Women's Studies Program sponsors a series of Brown Bag Lunch talks; publishes a newsletter; coordinates campus-wide activities during National Women's History Month; and cosponsors lectures, conferences, and symposia on women. Further information and applications for admission to the certificate program may be obtained from the Women's Studies Program Office, 230K Main Library.

COURSES OF INSTRUCTION

African American Studies (AAM)

Contact Person: Dr. R. Baxter Miller,
542-5197

200. Introduction to African American Studies. 5 hours.

Interdisciplinary introduction to the field of African American Studies, covering basic cultural, social and historical movements among Americans of African descent.

231. (REL) African American Religious Organizations. 5 hours.

See REL 231.

300. (REL) The Bible in the Third World. 5 hours.

See REL 300.

315.(PSY) Introductory Black Psychology. 5 hours.

Prerequisite: Permission of department.

Study of African Americans by African American psychologists. Deconstruction of traditional thought, behavior, and development as well as reconstruction of the same on contemporary terms, testing of nuances and varieties of multicultural and indigenous models. Topics include the designs and projected future of the Black Psychology Movement.

323.(ENG) Development of African American Literature. 5 hours.

See ENG 323.

388. African American Folklore. 5 hours.

Prerequisite: ENG 301 or twenty hours of courses at the 200-level or above in literature, history, social sciences, or African American studies.

African American folk expressions: their functions and their relationships with folk expressions of other peoples. Categories to be studied: folk speech (proverbs, riddles, signifying, playing the dozens), folk narrative (animal tales, slave stories, modern legends, jokes, toasts, rap songs), folk songs (African songs, gospel songs, work songs, ballads, blues songs).

413.(PSY) Classic Studies in Black Psychology. 5 hours.

Prerequisite: AAM(PSY) 315 or permission of department.

Studies which have had major social or scientific impact on a) the lives of Black Americans and b) the way black people have been viewed within

psychology. Approach will be historical and interdisciplinary.

420. (POL) African American Social Change. 5 hours.

Prerequisite: At least 20 hours in courses at the 200-level or above in history, social sciences, or African American studies.

African American social movements, principally those in the United States such as the convention and colonizing movements of the 19th century and the Civil Rights and Black Power movements of the 20th century.

425. African American Seminar. 5 hours.

Prerequisite: AAM 200 and 388 or AAM(POL) 420 or HIS 418P.

An interdisciplinary exploration of recurring themes and concerns in African American life from the perspective of the humanities, history, and the social and behavioral sciences.

431.(REL) Afro-American Religious History. 5 hours.

See REL 431.

432.(PSY) Psychology of Prejudice. 5 hours.

Prerequisite: PSY 101 or SOC 105.

Motivational, cognitive, social, and cultural factors that lead to discrimination in our society and various perspectives found in discrimination literature.

433.(REL) Southern Religious History. 5 hours.

See REL 433.

434.(REL) The Bible in the Black Church. 5 hours.

See REL 434.

462.(ENG) African American Poetry. 5 hours.

See ENG 462.

463.(ENG) African American Fiction. 5 hours.

See ENG 463.

488.(ENG) Topics in African American Literature. 5 hours.

See ENG 488.

Anthropology (ANT)

Contact Person: Dr. Michael Olien,
542-1478

102. Introduction to Anthropology. 5 hours.

Variation in human culture and biology from the earliest beginnings to the present, including relationships between human biology, culture, and the environment, and an understanding of contemporary cultural differences.

Anthropology

131. (HIS) An Introduction to Latin America. 5 hours.

Not open to students with credit in: HIS 331F, 331P, 332H, 431F, 433F, 433P; or ANT 444.

An introduction to Latin America, its lands, peoples, history, and modern problems.

212H. Introduction to Anthropology (Honors). 5 hours.

Not open to students who have credit for ANT 102. See description of ANT 102.

Social Anthropology

353. Anthropology of Folk Medicine. 5 hours.

A contrast of indigenous medical knowledge and practitioners with ancient formal systems of medicine and modern biomedicine, including medical pluralism in multi-ethnic societies, and the political economy of medicine.

400. Anthropology of Economic Systems. 5 hours.

Prerequisite: ANT 102 or permission of department.

Models and methods used by anthropologists to study production, distribution, and consumption of goods in subsistence and market economies. Topics from the ethnographic literature include feasting, money, managing commons, pre-capitalist markets and capitalist penetration of subsistence economies.

405. Cultural Anthropology. 5 hours.

Prerequisite: ANT 102 or permission of department.

Concepts and methods for the analysis and cross-cultural comparison of human institutions.

407. Cultural Ecology. 5 hours.

Prerequisite: ANT 102.

A study of the influence of the environment on human behavior and analysis of common adaptive responses among human populations to particular environments, emphasizing the role of culture in the ecological process.

409. (LIN) Cognitive Anthropology. 5 hours.

Prerequisite: ANT 102.

Folk systems of knowledge, with an emphasis on how people in different societies culturally identify, define, label, and classify phenomena such as color terms, plants, animals, and other environmental resources.

415. (REL) Anthropology of Religion. 5 hours.

See REL 415.

440. (SOC/POL) Socio-Political Ecology. 5 hours.

See SOC 440.

456. Anthropology of Development. 5 hours.

Prerequisite: ANT 102 and 5 hours advanced social science or permission of department.

Relationships among development, culture, and environment are analyzed from the world system perspective. Concepts of dependence, hegemony, inequality, and resistance are brought to bear in exploring interlinkages between (and among) underdevelopment, resource exploitation, and local autonomy and self-reliance.

463. Field Methods in Cultural Anthropology. 10 hours. Repeatable for maximum 20 hours credit.

Prerequisite: ANT 102 and permission of department.

Supervised research projects in a field setting. Individual projects related to a central problem or issue, using research methods and techniques in cultural anthropology, including interviews, surveys, participant-observation, and questionnaires.

Archaeology

231. Archaeology of Georgia. 5 hours.

Prerequisite: ANT 102.

12,000 years of human life in Georgia with an emphasis on relationships to the environment. Examines lifeways of prehistoric and early historic peoples, and the history of Georgia archaeology.

322. Introduction to Prehistoric Archaeology. 5 hours.

Prerequisite: ANT 102.

Basic concepts and principles of archaeology. Topics covered include: history of archaeology, site formation processes, survey and excavation techniques, artifact typology and analysis, chronology, activity analysis, and general archaeological theory.

325. Old World Archaeology. 5 hours.

Prerequisite: ANT 102 or permission of department.

Cultural developments in the Old World from the first hominids to the beginnings of urban civilization. Emphasis on bio-cultural and environmental adaptation in prehistory.

327. New World Archaeology. 5 hours.

Prerequisite: ANT 102 or permission of department.

Cultural variation in the Americas from the end of the Pleistocene to the time of intensive European contact, with emphasis on human/environmental interactions.

420. Field Methods in Archaeology. 5 hours.

Prerequisite: ANT 102 or permission of department.

Methods of archaeological reconnaissance, survey, excavation, laboratory preparation and analysis of collected materials.

421. (ECL) Zooarchaeology. 5 hours.
Not open to students with credit in ZOO 421.
Prerequisite: ANT 102 or BIO 104-104L or 108-108L or permission of department.
Animal bones recovered from archaeological sites, studied in light of zoological concepts, especially osteology, and archaeological methods and theories; interpretation of identified materials in terms of human and animal behavior.

424. Laboratory Methods in Archaeology. 5 hours.
Prerequisite: ANT 102 or permission of department.

An introduction to the range of environmental, chronological, preservational, and analytical methods and techniques that are intrinsic to the accomplishment of archaeological research.

429. (ECL) Environmental Archaeology. 5 hours.
Prerequisite: ANT 102 or permission of department.
Analysis of prehistoric and historic human subsistence patterns through the methods and techniques of zooarchaeology, paleobotany, and paleonutrition. Theories of environmental reconstruction will be assessed.

431. Archaeology of Eastern North America. 5 hours.
Prerequisite: ANT 102 or permission of department.
Prehistoric and early historic aboriginal cultural variation in eastern North America.

434. (GLY) Archaeometry. 5 hours.
See GLY 434.

470. (GLY) Archaeological Geology. 5 hours.
See GLY 470.

Anthropological Linguistics

486. (LIN/EFL) Language in Culture and Society. 5 hours.
See LIN 486.

Biological Anthropology

207H-207L. Culture and Human Biology. 5 hours. 4 hours lecture and one 1-hour lab per week.
Not open to students with credit in ANT 470.
Prerequisite: ANT 102 or ANT 212H.
An examination of the biological bases of human social and cultural behavior from the perspective of biological anthropology. Includes instruction in laboratory methods. Evolutionary history, primate

behavior, and human biological diversity will be applied to understanding the interrelationship of biology, culture, and society.

301. (PAT/BOT) Fungi: Friends and Foes. 5 hours.
See PAT 301.

307. (ECL/IDS) Environment and Humans. 5 hours.
See ECL 307.

308. Introduction to Paleoanthropology. 5 hours.
Prerequisite: ANT 102.

Paleoanthropology as the integrative biocultural study of early human evolution, drawing on human paleontology and paleolithic archaeology to give a holistic understanding of the transitions leading to Homo sapiens.

309. Evolution of Human Ecosystems. 5 hours.
Prehistoric and historic human ecosystems, from hunting and gathering to states and empires, viewed from a biocultural perspective. Changing human-environment relations over the past 10,000 years.

344. (HOR/BOT) Herbs, Spices, and Medicinal Plants. 2 hours.
See HOR 344.

471. Human Origins. 5 hours.
Prerequisite: ANT 102 and permission of department.

A study of the evolutionary history of the human species through examination of the fossil record.

479. Human Adaptation. 5 hours.
Prerequisite: ANT 102, BIO 101-101L, 102-102L, and permission of department.
An exploration of human diversity as response to environmental stress, from both a biological and cultural perspective. Topics include: adaptation to heat, cold, altitude, malnutrition and infectious disease; the impact of Westernization and technological advancement on human biological function; and growth and development of the individual under environmental stress.

Culture Areas

210. (GGY/CML/HIS/SOC) Introduction to Africa. 5 hours.
See GGY 210.

310. Peoples of the World. 5 hours.
Prerequisite: ANT 102.
The way of life of a number of societies from around the world, including hunting and gathering bands, farming and herding tribes and chiefdoms, and pre-industrial states.

318. (CML) Introduction to East Asian Cultures. 5 hours.
See CML 318.

326. The Aztecs and the Maya. 5 hours.
Prerequisite: ANT 102 suggested.
Two indigenous urban societies of the Americas, from farming village beginnings to the Spanish Conquest, and their lasting impact on modern Middle American culture. Topics include: ecology, economy, political organization, urbanism, militarism, beliefs, art, architecture, and literature.

342. Afro-American Societies. 5 hours.
Prerequisite: ANT 102 or permission of department.
The New World experience of the African slaves and their descendants. Special attention is devoted to the cultural adaptations of blacks and populations with black lineage to various colonial and later republican-era powers with emphasis on the Caribbean and Latin America.

343. Indians of Mexico and Central America. 5 hours.
Prerequisite: ANT 102 or permission of department.
The native peoples of Mexico and Central America, including their past, traditional culture, and problems they face in the modern world.

345. Africa: Peoples and Institutions. 5 hours.
Prerequisite: ANT 102 or permission of department.
Peoples and institutions of Africa, south of the Sahara, starting with earliest evidence of indigenous peoples with special emphasis on current changes.

402. Indians of North America. 5 hours.
Prerequisite: ANT 102 or permission of department.
North American Indian cultures at the time of European contact. Additional topics include: origin and development of Indian culture, impact of European contact on native cultures, and problems faced by Native Americans today.

447. The Rise and Fall of the Southeastern Chiefdoms. 5 hours.
Not open to students with credit in ANT 441.
Development of the native societies of the southeastern United States, the exploration of the area by Spain in the 16th century, and the consequences of the meeting of the two peoples.

448. The Indians of the Old South. 5 hours.
Native peoples of the southern United States from the beginnings of the Spanish missions and the English deerskin trade through Indian removal.

Other Courses

490. Special Topics in Anthropology. 5-15 hours. Repeatable for maximum 15 hours credit.
Prerequisite: ANT 102 or permission of department.
A program of semi-independent study including reading and discussions of current developments in anthropology.

491. Senior Seminar in Anthropology. 5 hours.
Prerequisite: Anthropology majors with 15 hours of upper-division anthropology courses and permission of department.
Reading and discussion of contemporary issues in anthropology. Students write and present a formal paper relating current method and theory to their research interests.

496H, 497H, 498H. Directed Reading and/or Projects (Honors). 5 hours each.
Prerequisite: ANT 102 or permission of department.
Affords Honors students of senior division standing the opportunity to engage in individual study, reading, or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.
Prerequisite: ANT 102 or permission of department.
This course provides opportunity for Honors students to undertake individual research in the field of his/her major or in a closely related field.

Art (ART)

Contact Person: Dr. Andra Johnson,
542-1511

Art Appreciation

200. Appreciation of the Visual Arts. 5 hours.
Not open to students with credit in Art 300.
An understanding of painting, sculpture and architecture -both historic and contemporaneous - through illustrated lecture and reading. Emphasis on sociological and psychological factors influencing period styles and contributing to the nature of genius. The aim is to make the student both visually sophisticated and historically informed.

205. Cultural Diversity in American Art. 5 hours.
A contextual introduction to past and present art created by African-Americans, Asian-Americans, Hispanic-Americans and Native-Americans.

401. Techniques of Art Appreciation and Criticism. 5 hours.

An inquiry into alternative modes of analyzing, interpreting and evaluating works of art; the construction of art appreciation curricula; critical technique as employed in classroom teaching strategies.

402. Aspects of Folk Culture. 5 hours.

Prerequisite: Permission of department.

An examination of the work and the creative processes of traditional folk, self-taught, and visionary visual artists; the correlation of this art to folk oral and musical culture, and to the concerns of studio and art history and criticism. Lectures, field trips, and seminar topics.

420. Seminar in Contemporary Art. 5 hours.

Repeatable for maximum 10 hours credit.

Prerequisite: ART 332 or permission of department.

Current issues in contemporary art from the point of view of studio artists.

Art Education

(See College of Education for requirements for Admission to Teacher Education Program.)

305. Art and the Child. 5 hours. Five 2-hour lab periods.

The child, his/her development and needs in creative art experiences. Two and three dimensional laboratory experiences in drawing, painting, graphics, sculpture, and crafts appropriate in later use with children. Discussions, readings and field trips. (May not be used for credit by art education majors.)

513. Crafts for Teachers. 5 hours.

Prerequisite: Two senior division courses in art, permission of department.

A course in crafts for classroom teachers. Emphasis will be placed on the use of simple hand tools and materials in adapting a crafts program to children at various age levels, and in integrating this program with classroom activities.

523ABCDE. Special Problems in Art Education. 1-10 hours each, maximum 10 hours toward a degree.

Prerequisite: Permission of department.

Specific problem areas, according to individual needs, are investigated, discussed and evaluated.

- A. Specific problems and experiences in teaching art.
- B. To adult populations, e.g., prisoners and the aged.
- C. In mental health facilities.

D. With handicapped children.

E. In community recreation and cultural centers and museums.

530. Multicultural and Cross-Cultural Study in Art Education. 5 hours.

Prerequisite: Permission of department.

Influence and importance of various cultural traditions in the development of art in the United States with emphasis on multicultural and cross-cultural art education curricula.

540. The Teaching of Art in the Elementary School. 5 hours. Five 2-hour periods.

Prerequisite: Two senior division courses in art.

For advanced students in art education and administration of elementary school programs. Recommended practices in qualitative curriculum planning, together with laboratory experiences that identify the unique problems in elementary school art including philosophical, motivational and evaluative aspects.

550. Art Education and the Art Museum. 5 hours.

Prerequisite: Permission of department.

History and current practices in museum education with an emphasis on application of curricular design programs to Art Education.

Art History**211H. History of the Visual Arts as Related to Man (Honors).** 5 hours.

Not open to students with credit in ART 287.

An Honors course substitute for ART 287; an in-depth survey of world art from prehistoric through medieval times. The formal characteristics of the painting, sculpture, architecture, and some of the minor arts will be analyzed in their stylistic and symbolic developments which will be discussed in relation to the changing cultural backgrounds.

287. Introduction to the History of Ancient and Medieval Art. 5 hours.

A survey of world art from prehistoric through medieval times. The formal characteristics of the paintings, sculpture, architecture, and some of the minor arts will be analyzed in their stylistic and symbolic developments which will be discussed in relation to the changing cultural backgrounds.

288. Introduction to the History of Art, Renaissance-18th Century. 5 hours.

A survey of world art from the Renaissance through the 18th Century. The formal characteristics of the painting, sculpture, architecture, and some of the minor arts will be analyzed in their stylistic and symbolic developments which will be discussed in relation to the changing cultural backgrounds.

289. Introduction to 19th and 20th Century Art. 5 hours.

A survey of art from the late 18th Century to the present. The formal characteristics of painting, sculpture, architecture and some of the minor arts will be discussed in relation to the changing cultural backgrounds.

290. Asian Art. 5 hours.

Survey of the art of India, Central and Southeast Asia, China, and Japan. Major monuments of Asian art studied thematically and chronologically, emphasizing religious and cultural interchanges in Asian history.

403. Women in Art. 5 hours.

Prerequisite: Junior standing.

Art appreciation, theory and criticism through examination of the influence of women on the visual arts. Art, influenced by women as artists, critics, patrons, and subjects, will be considered in its cultural contexts.

404. The Art and Architecture of the City of Rome. 5 hours.

Prerequisite: ART 287 or 288.

Art and architecture of the City of Rome. Etruscan, Roman, Early Christian, Renaissance, Baroque and modern styles viewed historically and as expressions of the religious and political influences that shaped the city.

450. Guided Foreign Study in Art History. 5 hours.

Prerequisite: ART 287 and 288 or comparable background and permission of department.

A systematic, on-the-spot study of a selected and logically unified group of art works found in foreign collections, sites, and museums. The range of study will be determined by the instructor and basically be within the field of the visual arts. Where possible, local library and archival resources will be used. Lecture and discussions before and during the period of travel will coordinate the activities and bring in factors of local environmental influence.

451. Guided Foreign Study in Art History. 5 hours.

Prerequisite: ART 287 and 288 or comparable background and permission of department.

A continuation of ART 450.

455. The Arts of China. 5 hours.

Major trends in the arts of China from the Neolithic age to the eve of the modern period (ca. 2500 B.C.E. to the 19th cent. C.E.). Factors affecting important developments in style and subject matter will be studied in the context of contemporary cultural phenomena.

456. Japanese Art. 5 hours.

History of Japanese art of the proto-historic period to the exposure of Japan to the West in the mid-19th century. Emphasis on the Buddhist arts of Japan during the Imperial period, including Japanese pictorial art, architecture, and Shinto-influenced arts.

457. Art of India. 5 hours.

Traditional art of India from the Indus Valley civilization to the Muslim conquest. Major monuments of architecture, sculpture, and painting will be investigated in the context of political and religious developments in the Indian subcontinent, including the influences of the Indic religions of Buddhism, Hinduism, and Jainism.

460. Italian Renaissance and Baroque Sculpture. 5 hours.

Prerequisite: ART 288.

The development of sculpture in Italy between 1400 and 1700. Discussions of style clarified through analysis of technique. Unique properties of stucco, wood, gold, bronze, and marble approached historically and symbolically through a European context.

465. Renaissance Architecture. 5 hours.

A survey of the "new" architecture of the 15th and 16th Centuries, emphasizing such bases of the style as general principles, revival of classical forms, and individual contributions. Italian works by such masters as Brunelleschi, Alberti, Bramante, Michelangelo and Palladio will be discussed.

467. Rococo Art. 5 hours.

This course will survey the great flowering of the figurative arts during the 18th Century in France, England and Italy. The arts of painting and sculpture will be examined within the context of those social, economic and political forces that molded their development, and also with reference to contemporary movements in literature, music and the theatre.

472. Venetian Art. 5 hours.

Principal monuments of Venetian art from the fourteenth through the eighteenth centuries. Special emphasis is given to painting and the work of such masters as Paolo Veneziano, Gentile and Giovanni Bellini, Giorgione, Titian, Tintoretto, Veronese, and Tiepolo.

473. The Classical Tradition in the Visual Arts. 5 hours.

A discussion of classic examples of stylistic evolution. Topics vary from year to year: aspects of the development of classic and Gothic stone carving; classic and Renaissance drawing; Phidias, Raphael, and Poussin.

474. Art of the Bronze Age. 5 hours.

Prerequisite: ART 287 and either ART 288 or ART 289.

A study of the art of the Bronze Age in Mesopotamia, Egypt, Crete and Mainland Greece. Sculpture, wall-painting and monumental architecture from these contemporary cultures will be examined, along with possible influences of one culture on another.

475. Early Greek Art. 5 hours.

Prerequisite: ART 287 and either ART 288 or ART 289.

A study of stylistic and thematic developments in the major media of early Greek art from the protoegeometric through the archaic periods (1050-480 B.C.). Representative examples of free-standing sculpture, architecture and architectural sculpture, and vase-painting will be examined.

476. Classical and Hellenistic Greek Art. 5 hours.

Prerequisite: ART 287 and either ART 288 or ART 289.

A study of the masterpieces and major monuments of Greek art from the Classical and Hellenistic periods. Both original works and Roman copies of famous original sculptures and paintings will be presented, as well as major monuments such as the Parthenon and the Greek Altar of Zeus at Pergamon.

477. Roman Art and Architecture. 5 hours.

Prerequisite: ART 287 and either ART 288 or ART 289.

A study of the art and architecture of the late Roman Republican era and the Roman empire (ca. 100 B.C.-330 A.D.). Portraiture, relief sculpture and wall-painting will be investigated, along with major architectural structures at Pompeii and Rome.

481. History of Northern Renaissance Art. 5 hours.

Historical study of the architecture, sculpture, painting and minor arts north of the Alps from the waning of the medieval period to around the beginning of the 17th Century. The artistic achievements in France, Germany, England, and the Low Countries will be presented against the background of their political, social and literary accomplishments.

482. Backgrounds of Modern Art, 19th Century. 5 hours.

A study of the cultural and historical roots of modern architecture, painting and sculpture as they are found in Europe during the 19th Century. Particular attention is given to the relationship of the arts to their political, social, and economic contexts. Some consideration will be given to

parallel developments in the arts of the United States.

483. Modern Art, 20th Century. 5 hours.

A study of the history of 20th-Century European architecture, painting, and sculpture. Particular attention is given to the relationship of the arts to their political, social and economic contexts. Some consideration will be given to parallel developments in the arts of the United States.

484. Spirituality in Modern Art. 5 hours.

Prerequisite: ART 289 or 483 or permission of department.

Myth and spirituality in the abstract art of the late nineteenth and twentieth centuries, as exemplified in Gauguin, Kandinsky, Klee, Mondrian, Pollock, and Rothko.

485A. The Art of the Baroque in Italy, Spain and France. 5 hours.

An analysis, beginning with the 17th Century in France, Italy and Spain, detailing the rise of the Baroque and its development.

485B. The Art of the Baroque in Holland, Belgium and England. 5 hours.

Intensive investigation of the art of northern Europe, concentrating on such major artists as Rubens, Rembrandt, Vermeer, and Van Dyck, while relating the art of the period to the political, philosophical and literary environment.

485C. Baroque Architecture. 5 hours.

Development of architecture and decoration in the 17th and 18th Centuries. Relations with sculpture, gardening, city planning and other baroque forms will be considered.

486. American Art 1875-1913. 5 hours.

Prerequisite: 10 hours from ART 287, 288, or 289. American art from Victorianism to early Modernism.

490. Objectives of 20th-Century Art. 5 hours.

A consideration of painting and sculpture today against its historical background, with the purpose of illustrating the links between characteristic contemporary expressions and the work of the past accepted as belonging to the central Western tradition. A reading seminar related to lectures.

491. Early Italian Renaissance Art. 5 hours.

The chief masterpieces, personalities, and issues of Italian art during the Early Renaissance.

492. Italian High Renaissance and Mannerist Art. 5 hours.

Masterpieces, personalities, and issues of Italian art during the High Renaissance and its aftermath throughout the 16th Century.

493A. Early Christian and Byzantine Art. 5 hours.

An analysis of the origins and the rise of early Christian architecture and art in the Mediterranean countries and of the beginnings of Christian art in the north.

493B. Early Medieval Art. 5 hours.

A study of the architecture, painting and sculpture from the Carolingian to the Romanesque periods with emphasis on the Romanesque architectural ensembles.

493C. Gothic Art. 5 hours.

A study of Gothic architecture and art beginning with the developments of early Gothic architecture and sculpture in the 12th Century and ending with the international Gothic of the late 14th Century. Special emphasis will be given to the architecture and sculpture of the important French cathedrals.

494. Senior Seminar in Art History. 5 hours.

Prerequisite: Previous senior-level courses in major area (art history).

Methods of inquiry in art history.

496. American Impressionism. 5 hours.

Prerequisite: ART 498B or permission of department.

History of Impressionism in late nineteenth and early twentieth-century American art, with an examination of the influences of French Realism and Impressionism.

498A. Art of the United States 1608-1893. 5 hours.

Prerequisite: Two courses from ART 287, 288, or 289 or permission of department.

An in-depth examination of the art of the United States from the first day of colonial settlement to the end of the Gilded Age. The course will examine painting and sculpture in its historical, cultural and social contexts.

498B. Art of the United States 1893-1975. 5 hours.

Prerequisite: Two courses from ART 287, 288, or 289 or permission of department.

An in-depth examination of the art of the United States from the beginning of the Gilded Age until the last quarter of the twentieth century. The course will examine painting and sculpture in its historical, cultural and social contexts.

499. Architecture of the United States. 5 hours.

The development of building arts within the continental United States from the earliest settlements to the present. Particular attention is given to regional developments and the various European traditions which influenced architecture and urban design in this country.

Basic Design and Drawing

120. Art Structure. 5 hours. Five 2-hour periods including lectures.

Based on perceptual orientation in which students are made aware of and taught to respond to controlled visual stimuli. Slides, films, TV monitors, cameras and other contemporary devices are employed. Studio work revolves around a series of two-dimensional problems utilizing a variety of materials and appropriate techniques.

130. Art Structure. 5 hours. Five 2-hour periods including lectures.

Prerequisite: ART 120.

Continuation of the philosophy and intent of ART 120 with emphasis on the drawing experiences and skills required to produce three-dimensional images. Setups with the human figure, still lifes, and landscapes are employed to expand the attention and concerns of students. Studio work concentrates on flat surfaces and a wide range of media and techniques.

140. Art Structure. 5 hours. Five 2-hour lab periods.

Prerequisite: Permission of department.

Introduction to basic design principles and their application on the two-dimensional surface. Abstract problem-solving using a variety of approaches in various media.

230. Art Structure. 5 hours. Five 2-hour periods including lectures.

Prerequisite: ART 120 and 130.

Exploration in design in which a variety of color considerations are predominant. Two methods of approach are used: the traditional painterly involvement and the colorlight application used in color reproduction techniques.

240. Art Structure. 5 hours. Five 2-hour periods.

Problems with emphasis on the elements of visual organization in modular and sculptural approaches. Experiences in the manipulation of three-dimensional materials such as wood, paper, metal and synthetics.

The Computer in Art

510. The Computer in Art. 5 hours.

Prerequisite: ART 120 and 130, or 230 or 240 or permission of department.

Art students will use the computer as an aid in designing their personal creative work. The course includes instruction on the use of computer equipment in many art careers.

511. Special Topics in Computer Art. 5 hours.

Repeatable for maximum 10 hours credit.

Prerequisite: ART 510.

Computer generated art and design (e.g., advanced computer generated imaging, computer aided drafting, scanned image manipulation, animation, desktop publishing and presentation, and 2D and 3D representation of fiber or sculpture arts.)

512. 3-D Computer Art. 5 hours. Repeatable for maximum 10 hours credit. Four 2-hour lab periods. Prerequisite: ART 511 and permission of department.

Three-dimensional computer generated art using modelling, rendering, animation, and output technique.

514. Advanced Computer Aided Design in Art. 5 hours. Repeatable for maximum 10 hours credit. Four 2-hour lab periods. Prerequisite: ART 511 and permission of department.

In-depth study of concepts and trends in contemporary art computing culminating in development of a substantial body of individual imagery.

Crafts

350A. Fabric Design-Structure. 5 hours. Five 2-hour periods.

Prerequisite: ART 120, 130, 230, and 240 or permission of department.

Fundamentals of woven and non-woven fabric structure. Study of the relationship between process and material.

350B. Fabric Design-Structure. 5 hours. Five 2-hour periods.

Prerequisite: ART 350A.

Woven structure investigated through manipulation of the hand loom. Study of the basic weaves and their application to hand-crafted and industrial textiles.

350C. Fabric Design-Structure. 5 hours. Five 2-hour periods.

Prerequisite: ART 350B.

Study of fibers and other materials as related to fabric structure and end use.

350D. Fabric Design-Structure. 5 hours. Five 2-hour periods.

Prerequisite: ART 350C.

Theory of woven structure including studio work on simple and multi-harness looms. Field trips and special problems.

351A. Fabric Design-Decoration. 5 hours. Five 2-hour periods.

Prerequisite: ART 130.

Fundamentals of fabric decoration including work in flat pattern design and decoration techniques with dyes and pigments.

351B. Fabric Design-Decoration. 5 hours. Five 2-hour periods.

Prerequisite: ART 351A.

Screen process method of fabric printing, dye technology, stencil making and application processes.

351C. Fabric Design-Decoration. 5 hours. Five 2-hour periods.

Prerequisite: ART 351B.

Photographic and other commercial screen process printing techniques. Study of relationship of other decoration processes to screen printing. Field trips and special problems.

352. Jewelry and Metalwork. 5 hours. Five 2-hour periods.

Not open to students with credit in ART 252.

Fundamentals of working with such materials as sterling, gold, copper, and iron. Guidance in the techniques necessary for executing well-designed objects: forging, raising, casting, fabrication and finishing.

353ABC. Jewelry. 5 hours each; taken in sequence. Five 2-hour periods.

Prerequisite: ART 352.

Extensive study of traditional and contemporary forms, materials and techniques. Investigation of ornamentation and adornment as it applies to jewelry. Experimentation with surface enrichment techniques.

354ABC. Metalwork. 5 hours each; taken in sequence. Five 2-hour periods.

Prerequisite: ART 352.

Extensive study of forging and raising techniques involved in creating hollow ware, flat ware, and architectural ornaments. Experimentation with surface enrichment techniques.

360. Ceramics. 5 hours. Five 2-hour periods.

Not open to students with credit in ART 260.

Form, proportion, and simple ornament as related to pottery shapes. Laboratory exercises and related lectures in hand-building pottery. Studio and lecture work in hand building of pottery; experience in glazing and firing.

361ABCD. Ceramics. 5 hours each; taken in sequence. Five 2-hour periods.

Prerequisite: ART 360.

Studio experience, lectures, and outside study related to the designing and executing of forms in clay. Emphasis on the development of individual style by student through study of ceramics of past civilizations, ceramic technology, and concentrated studio work.

362. Ceramic Sculpture. 5 hours. Repeatable for maximum 15 hours credit. Four 2-hour lab periods.

Prerequisite: ART 360 or permission of department.

Three-dimensional ceramic sculpture and related materials and techniques.

366ABCD. Ceramics. 5 hours each. Five 2-hour periods.

Prerequisite: ART 361C.

For advanced students who have sufficient background and technical knowledge in ceramics to carry on independent projects. Problems combining research in design and technology are selected in consultation with the instructor.

369. BFA Thesis Project in Ceramics. 5 hours. Repeatable for maximum 15 hours credit. Five 2-hour periods.

Prerequisite: ART 366D and permission of department.

Directed independent study towards the presentation of a BFA thesis exhibition.

545. Japanese Fabrics. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: ART 350A and 351A and permission of department.

Design, uses, processes, and materials of Japanese fabric techniques in a historical and cultural context with emphasis on their utilization in contemporary fiber art.

547. Peruvian Fabrics. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: ART 350A and 351A or permission of department.

Design, uses, processes, and materials of pre-Columbian Peruvian fabrics in a historical and cultural context and their application to contemporary fiber arts and personal art works.

548. History of Fabric Art. 5 hours.

Prerequisite: ART 120, 130, 230, and 240 or permission of department.

Study of the historical development of the fabric arts from the prehistoric period to the present.

549. Fabric Design. 5 hours. Five 2-hour periods.

Prerequisite: ART 350A.

Investigation of non-woven structures (looping, coiling, crochet, etc.) and utilization of their unique potentials.

550ABC. Fabric Design-Structure. 5 hours each. Five 2-hour periods.

Prerequisite: Two senior division fabric design courses and permission of department.

Problems in fabric structure for advanced students in fabric design who are able to carry on independent study. Research problems combin-

ing process with design in consultation with the instructor.

551ABC. Advanced Fabric Design. 5 hours each. Five 2-hour periods.

Prerequisite: Two senior division courses in fabric design, and permission of department.

Problems in fabric design decoration for advanced students in fabric design who are able to carry on independent study. Research problems combining dye, fiber and application technology with design and function or selection in consultation with the instructor.

553ABC. Jewelry. 5 hours each; taken in sequence. Five 2-hour periods.

Prerequisite: Two senior division art courses and permission of department.

An advanced study of jewelry making processes and development of individual interpretations of those processes and products.

554AB. Metalwork. 5 hours. Five 2-hour periods.

Prerequisite: Two senior division art courses and permission of department.

Problems in design, forming and constructing of various metals including copper, silver and gold. Independent study and emphasis on research is employed for solutions to design problems. The examination of the uniqueness of metal as a material is aimed in both functional and sculptural directions.

554C. Metalwork. 5 hours.

Prerequisite: ART 554B.

Design problems related to form and function will be emphasized, with attention to surface embellishment and forming techniques.

555. Senior Exit Studio in Fabric Design. 5 hours.

Prerequisite: ART 350C and 351C and permission of department.

Directed independent study towards presentation of a BFA Senior Exit Exhibition.

Drawing and Painting

321. Drawing. 5 hours. Five 2-hour periods.

Prerequisite: ART 120, 130, 230, and 240.

Varied approaches to drawing: experience with model, still life, and landscape. Introduction to basic drawing tools and media.

322. Introduction to Figure Drawing. 5 hours. Five 2-hour periods.

Prerequisite: ART 321.

Compositional, expressive, and anatomical approaches to drawing the human figure. In-depth experience with traditional media, such as charcoal, pastels, conte crayon, ink, and graphite.

323A. Advanced Drawing. 5 hours. Repeatable for maximum 15 hours credit. Five 2-hour periods. Prerequisite: ART 322.

Advanced level drawing. Special projects and experimental research encouraged.

323B. Drawing—Directed Study. 5 hours. Prerequisite: ART 323A and permission of department.

Available only as advanced independent study for drawing and painting majors. Studio meetings arranged.

323C. Drawing—Advanced Directed Study. 5 hours.

Prerequisite: Permission of department. Available only as advanced independent study for drawing and painting majors. Studio meetings arranged.

324. Art Studio: Drawing and Anatomy. 5 hours. Four 2-hour periods.

Prerequisite: ART 322 and permission of department.

Emphasis on drawing human anatomy, figure structure, and composition. Concentration on skeletal and muscular structure and bio-mechanical concerns.

331. Introductory Painting. 5 hours. Five 2-hour periods.

Prerequisite: ART 130 and 230.

Technical fundamentals. Emphasis on esthetic understanding derived from subject matter. Consideration of composition, color, and pictorial organization. Required as prerequisite for all other painting courses.

332. Figure Painting. 5 hours. Five 2-hour periods.

Prerequisite: ART 331.

Concentration on the human figure, both nude and clothed. Emphasis on figure structure and composition.

332A. Intermediate Painting: Various Media. 5 hours.

Not open to students with credit in ART 332.

Prerequisite: ART 331 and permission of department.

Traditional and current painting techniques, preparation of surfaces and grounds. Subject matter will include still lifes, landscapes, and the figure model.

333. Painting Studio. 5 hours. Repeatable for maximum 15 hours credit. Five 2-hour periods.

Prerequisite: ART 331.

Open inquiry into varied approaches in painting, both representational and non-representational. Experimental attitudes and personal solutions are encouraged.

334. Figure Painting. 5 hours. 3-5 2-hour periods.

Prerequisite: ART 333 and permission of department.

Painting the human figure. Emphasis on figure structure and painting techniques. Media will include oil and acrylic paints and grounds.

336. Painting Materials and Techniques. 5 hours.

Prerequisite: ART 331 and permission of department.

A studio-workshop introduction to such traditional techniques as egg tempera, fresco, encaustic, and Venetian oil painting, as they apply to contemporary needs; modern materials, such as alkyd and polymer resins, will be introduced. The properties of pigments, binders, grounds, and supports will be considered.

337. Painting—Directed Study. 5 hours.

Prerequisite: ART 331 and at least 3 other painting courses.

Available only as advanced independent study for drawing and painting majors. Studio meetings arranged.

338. Painting—Advanced Directed Study. 5 hours.

Prerequisite: ART 337 and permission of department.

Available only as advanced independent study for drawing and painting majors. Studio meetings arranged.

341. Transparent Watercolor. 5 hours. Five 2-hour periods.

Prerequisite: ART 331 or permission of Drawing and Painting Area.

Traditional and contemporary approaches to transparent watercolor. Work from the landscape, still life, and figure. Personal imagery and non-representational ideas will also be explored.

342. Aqueous Media. 5 hours. Five 2-hour periods.

Prerequisite: ART 331.

Work in opaque watercolor, acrylics, casein, and water media other than transparent watercolor.

349. Senior Exit Studio in Drawing or Painting. 5 hours. Five 2-hour periods.

Prerequisite: ART 331 and at least three other painting courses.

Advanced work in drawing or painting. To be taken in final quarter of studio work in B.F.A. concentration in drawing or painting. Group critiques and preparation of senior exit exhibition. Preparation for professional activity and/or graduate school application.

Graphic Design

306A. Lettering. 5 hours. Five 2-hour periods.
Prerequisite: ART 120, 130, 230, and 240 or permission of department.

Principles of lettering and letter construction with experience in lettering as used and reproduced today. Study of typography in relation to lettering and design.

306B. Concepts in Design. 5 hours.
Prerequisite: Art 230 and 240 and permission of department.

Development of techniques to improve idea formulation and creative skills in design.

307A. Graphic Design I-A. 5 hours. Five 2-hour periods.
Prerequisite: ART 120, 130, 230, and 240 or permission of department.

An introduction to the use of various drawing instruments, techniques and graphic media including technical and perspective drawings.

307B. Graphic Design I-B. 5 hours. Five 2-hour periods.
Prerequisite: ART 306A and 307A.

A continued investigation of graphic tools and materials with concentration in drawing and painting techniques.

307C. Electronic Design Basics. 1-5 hours.
Prerequisite: ART 120, 130, and 230.

Graphic design capabilities of the Macintosh computer including page layout and illustration programs.

308A. Graphic Design II. 5 hours. Five 2-hour periods.
Prerequisite: ART 307B.

A study of the photo-mechanical reproduction processes including the preparation of layouts, comprehensive and finished art as well as mechanicals and photo-proofing processes.

308B. Graphic Design III. 5 hours. Five 2-hour periods.
Prerequisite: ART 308A.

Fundamentals of layout using color, design, typography and reproduction related to modern communication problems.

308C. Graphic Design IV. 5 hours. Five 2-hour periods.
Prerequisite: ART 308A.

Graphic techniques applied to architectural, environmental, and informational design.

309A. Advanced Lettering and Typography. 5 hours. Five 2-hour periods.
Prerequisite: ART 306A and 308A.

Creative manipulation of lettering, typography, plastic patterns and technical processes integrated toward functional communication.

309B. Calligraphy. 5 hours. Repeatable for maximum 10 hours credit.

Prerequisite: ART 306A or permission of department.

Use of the 15th Century Humanist Hand and its italic variant, the Chancery Hand, and familiarity with other historical calligraphic hands. There will be lectures on the evolution of calligraphic styles.

309C. Advanced Publication Design. 5 hours.
Prerequisite: ART 306A and 308B and permission of department.

Comprehensive design projects in magazine layout, book and brochure design, and other areas of print media.

310A. Illustration. 5 hours. Five 2-hour periods.
Prerequisite: ART 308C.

Research in and experimentation with drawing, painting and other visual media and techniques applicable to illustration.

310B. Advanced Illustration. 5 hours. Five 2-hour periods.
Prerequisite: ART 310A.

A continued exploration of illustrative media and the development of personal illustrative directions.

311. Three-Dimensional Graphic Design. 5 hours. Five 2-hour periods.
Prerequisite: ART 308A.

Comprehensive problems in graphic design applied to three-dimensional media. Emphasis will be placed on the development, structural and communicative processes as applied to environmental terms.

311B. Introduction to Electronic Design. 5 hours.

Prerequisite: General knowledge of Macintosh system software and utilities and permission of department.

Introduction to drawing, layout, and page composition software on the desk top computer.

312. Special Problems in Graphic Design. 5 hours. Five 2-hour periods.

Prerequisite: ART 308BC, and one from ART 306A, 308B, or 311.

Advanced research into graphic design media and techniques and their application to a comprehensive visual communication project.

312A. Graphic Design: Business and Promotion. 5 hours.

Prerequisite: ART 308B and permission of department.

Business practices in graphic design including portfolio formats, personal promotion, resumes, contracts, and professional ethics.

312B. History of Graphic Design. 5 hours.
Prerequisite: ART 130, 230, and 240.

Graphic communication in the ancient world, the invention of the printing press in Europe, and the growth of popular graphics in the 19th century will precede a focus on 20th century graphic design and designers.

345A. Scientific Illustration I. 5 hours.

Prerequisite: Permission of department.

Basic principles of scientific illustration. The student will have hands on experience with the various media of this very demanding field, including pencil, ink, scratchboard, and carbon dust. Portfolio development and common business practices will also be covered.

345B. Scientific Illustration II. 5 hours.

Prerequisite: ART 345A or satisfactory portfolio of realistic renderings.

Additional practice and instruction in the black and white media commonly utilized in scientific illustration. Introduction to plate layout and design as well as working to publishers' specifications. Additional work on high quality illustrations for portfolio enhancement. Contract negotiations with authors and publishers.

346. Scientific Illustration: Airbrush. 5 hours.

Repeatable for maximum 10 hours credit.

Prerequisite: Permission of department.

Introduction to equipment, materials and methods utilized in developing realistic renderings with an airbrush.

347. Directed Study in Scientific Illustration. 5 hours.

Repeatable for maximum 15 hours credit.

A directed study course designed to allow the student to explore the materials and methods utilized in color scientific illustration and/or to pursue portfolio development along a specific theme (Entomology, Archaeology, etc.). Ultimate goal is to produce professional caliber illustrations for portfolio enhancement.

Interior Design

384A. Introduction to Interior Design. 3 hours.

Two lectures and one 2-hour lab period.

Prerequisite: ART 120 and permission of department.

Principles of design as related to the human environment, interior design and related fields. Introduction to the profession of interior design as it is organized and practiced in its various specialties including residential and non-residential interior design.

384B. Drawing for Interior Designers. 5 hours.

Prerequisite: ART 120, 130, 230 and 240.

Exploration of standard conventions in interior design drawing, including orthographic projection (plans, elevations, and sections), oblique, axono-

metric, one and two point perspective drawings; development of technical skills in line and tone drawings with drafting pencils and technical pens and a variety of materials; and interior design problems and presentation.

384C. Rendering for Interior Design. 5 hours.

Prerequisite: ART 384B and 230 and permission of department.

Color media as applied to the rendering of interior design drawings. Integration of free hand sketching techniques with the design process. Emphasis on layout and composition over a variety of two-dimensional projects.

385A. Studio I: Interior Design Fundamentals.

5 hours. Two lectures and four 2-hour lab periods.

Prerequisite: ART 384B and 384C and admittance to the Interior Design Program.

Three-dimensional quality of the built environment and the application of interior design theories. Development of creative problem solving abilities and generation of design concepts.

385B. Building Systems. 3 hours. Two lectures and one 2-hour lab period.

Prerequisite: ART 384B and 384C and admittance to the Interior Design Program.

Standard building systems encountered in the practice of interior design. Conceptual design premises, appropriate vocabulary materials and equipment of building systems and how these systems affect design decisions.

386A. Decorative Arts History I. 5 hours.

Prerequisite: Permission of department.

An historical survey of architecture, concepts of interior space, the great periods of furniture design and allied crafts, as a background for comparison with contemporary architecture, furniture, new materials, methods of manufacture, and present-day needs.

386B. Residential Interior Design. 5 hours. Four

2-hour periods and two lecture periods.

Prerequisite: Permission of department.

Introduction to drafting principles and practices, including perspective; learning the symbolic language of structural design; measuring and scaling interior spaces and furnishings; residential space planning.

386C. Decorative Arts History II. 5 hours.

Prerequisite: ART 386A or permission of department.

Decorative arts of Europe and America in the twentieth century including styles of architecture, interiors and furnishings by principal architects, interior designers, interior decorators, industrial designers and other innovators.

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386D. Studio II: Residential Interior Design. 5 hours. Two lectures and four 2-hour lab periods. Prerequisite: ART 385A and 385B and permission of department.

Principles and elements of residential interior design. Exploration of multiple dwelling spaces that require environmental considerations such as building and barrier-free codes. Projects in space planning, furnishings, and graphic presentations.

387. Finishes and Materials. 3 hours. Two lectures and one 2-hour lab period.

Not open to students with credit in ART 387A.

Prerequisite: ART 385A and 385B and permission of department.

Materials and finishes used in interior environments. Selections, specifications, and applications to interior design problems.

387A. Decorative Materials in Interior Design. 5 hours. Four 2-hour periods and two lecture periods.

Prerequisite: ART 386B.

Decorative materials and color as applied to interior design. Studio problems in color, light, paint, wall paper, soft floor coverings, woods and wood finishes, fabrics; design and construction; fabric uses and curtain design and construction.

387B. Furniture Design and Detailing. 5 hours. Four 2-hour periods and two lecture periods.

Prerequisite: ART 386B.

Creative problems in cabinet and furniture design. The study of construction methods, sectional, isometric and oblique views; details, perspectives, and complete shop drawings.

387C. Contract Lighting Design. 5 hours. Four 2-hour periods and two lecture periods.

Prerequisite: ART 386B or permission of department.

Commercial lighting design, aesthetics of color and light controls; light sources, luminaries; influences on heating, ventilating and air conditioning; calculations; design theory; graphic symbols and professional design applications.

387D. Lighting Design. 3 hours. Two lectures and one 4-hour lab period.

Not open to students with credit in ART 387C.

Prerequisite: ART 386D and 387 and permission of department.

Light and lighting and their impact on human psychology and physiology in interior design. Analysis of lighting needs, lighting requirements, and graphic communication of lighting design.

388. Studio III: Contract Design. 5 hours. Two lectures and four 2-hour lab periods.

Not open to students with credit in ART 388A.

Prerequisite: ART 387B and 387D and permission of department.

Space planning and interior design for multi-space commercial design projects. Preliminary design methodologies including project goals, design concepts, and design schematics. Design and construction documentations are emphasized.

388A. Architectural Design and Construction. 5 hours. Four 2-hour periods and two lecture periods.

Prerequisite: ART 386B or permission of department.

Architectural materials and construction as related to interior design. Wall and floor construction systems and materials; wood, stone, brick, concrete block, tile, flooring materials, graphics and lighting. A study of their use and design possibilities and presentations through drafting and perspective.

388B. Delineation for Interior Design. 5 hours. Four 2-hour periods and two lecture periods.

Prerequisite: ART 386B or permission of department.

The examination and application of black and white and color delineation as applied to the professional presentation of interior space including elevations and perspectives. Emphasis on layout, composition and a variety of contemporary media.

388C. Professional Practice. 3 hours. Two lectures and one 2-hour lab period.

Not open to students with credit in ART 392.

Prerequisite: ART 387B and 387D and permission of department.

Interior design business practice, procedures, and professional ethics. Working knowledge of furniture catalogues, price lists, sources and vendors. Emphasis on the daily business routine.

388D. Introduction to CAD. 3 hours. Two lectures and two 2-hour lab periods.

Prerequisite: Permission of department.

Computer-aided design for interior design. Exploration of both two and three-dimensional CAD drawing procedures as well as related computer programs to generate CAD drawings.

390. Interior Design Internship. 5 hours.

Not open to students with credit in ART 394.

Prerequisite: ART 388A and 388C and permission of department.

Extension of the learning experience beyond the classroom into the profession as an intern in an interior design firm.

390A. Interior Design Practicum. 1-10 hours. Repeatable for maximum 10 hours credit.

Prerequisite: ART 385A and 385B and permission of department.

Individualized projects arranged with clients to explore various aspects of the interior design profession.

391. Contract Interior Design. 5 hours. Four 2-hour periods and two lecture periods.

Prerequisite: ART 386AB, 387ABC and 388AB. Comprehensive senior design problems. Commercial, institutional, environmental space problems. Emphasis on total design concept for client presentation with plans, specifications, graphics, lighting design, material samples and perspective presentation.

391A. Studio IV: Advanced Contract Design. 5 hours. Two lectures and four 2-hour lab periods. Not open to students with credit in ART 391.

Prerequisite: ART 390 and permission of department.

Design of non-residential interiors of advanced complexity. Experience in space planning and designing multi-space interiors; and the production of design drawings and construction documents.

392. Business Procedures in Interior Design. 5 hours. Four 2-hour periods and two lecture periods.

Prerequisite: ART 386AB, 387ABC and 388AB. Application of professional design procedures and ethical practices in interior design execution. Design problems, design sources and field trips to wholesale trade showrooms.

392A. Interior Design Thesis. 5 hours. Repeatable for maximum 15 hours credit.

Prerequisite: ART 390 and permission of department.

Interior design problem of advanced complexity and scope that demonstrates the student's interest in a professional interior design specialty.

393. Special Topics in Interior Design. 3-10 hours. Repeatable for maximum 10 hours credit. Prerequisite: ART 385A and 385B and permission of department.

Exploration of a special topic of importance to the built environment. Emphasis on mastery of course concepts in written and/or graphic form.

394. Interior Design Internship. 5 hours.

Prerequisite: 30 hours of interior design courses, permission of department and the firm where interning.

Minimum 10 hours per week for each week in the quarter enrolled, working in an established interior design or architectural firm or trade showroom. Opportunity to work in the professional field before graduation. An introduction to as many practical applications of design theory as possible within the selected firm.

Photographic Design

320A. Introductory Photography. 5 hours. Five 2-hour periods.

Prerequisite: ART 130 and permission of department.

The art and technique of photography, its history and criticism. Visual concepts of picture making and interpretation. Use of standard camera types and black and white materials. Application of basic light sensitive processes and optical principles.

320B. Intermediate Photography. 5 hours. Five 2-hour periods.

Prerequisite: ART 320A and permission of department.

A continuation of ART 320A. Emphasis on visual concepts and articulation of ideas. Intensive practice of camera skills and processing techniques for black and white negatives and prints.

320C. Color Photography. 5 hours. Five 2-hour periods.

Prerequisite: ART 320B and permission of department.

Fundamentals of color photography including white light color theory, color temperature, natural and artificial lighting. Emphasis on Type "C" printing of color negatives. Concepts presented in context of contemporary trends and practices.

335A. Large Format Photography. 5 hours. Five 2-hour periods.

Prerequisite: ART 320C and permission of department.

Fundamentals of large format photography using 4x5 view cameras. Advanced camera handling and techniques including perspective manipulation, selective focus, sheet film processing, refined contact printing and enlarging. Lighting applications for black and white and color in the studio and on location.

335B. Alternative Methods and Media. 5 hours. Five 2-hour periods.

Prerequisite: ART 335A and permission of department.

Alternative methods and media from photography's past and present. Traditional practices and new technologies including non-silver printing, polaroid instant imaging, rephotography, non-camera photography, xerography, electronic imaging among others. Emphasis on experimental concepts and presentation.

521. Internship in Photography. 3-5 hours. Repeatable for maximum 15 hours credit.

Prerequisite: ART 320C and permission of department.

Practical experiences with appropriate professionals in the field including photographers, de-

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signers, editors, and curators. Work with photography faculty in creative research and production assistance in the field, studio, or lab.

522A. Special Topics in Photography. 5 hours. Prerequisite: ART 320C and permission of department.

Major historical movements in photography, including comparative studies of contemporary trends and criticism with an emphasis on research and the development of library archives.

535AB. Senior Exhibition and Portfolio. 5 hours each.

Prerequisite: ART 335B and permission of department.

The creation and presentation of a finished body of original work in photography. For review in two forms, the exhibition and the portfolio, with a written statement concerning the work.

Printmaking

325A. Printmaking: Intaglio I. 5 hours. Five 2-hour periods.

Prerequisite: ART 120, 130, 230, and 240 or permission of department.

An introductory examination of various printmaking techniques with concentrated work in intaglio.

325B. Printmaking: Intaglio II. 5 hours. Five 2-hour periods.

Prerequisite: ART 325A.

Individual projects in the intaglio processes stressing esthetic development on the advanced level.

326A. Printmaking: Lithography I. 5 hours. Five 2-hour periods.

Prerequisite: ART 120, 130, 230, and 240 or permission of department.

An introductory examination of various printmaking techniques with concentrated work in lithography.

326B. Printmaking: Lithography II. 5 hours. Five 2-hour periods.

Prerequisite: ART 326A.

Individual projects in lithography stressing esthetic development on the advanced level.

327A. Printmaking: Relief Processes I. 5 hours. Five 2-hour periods.

Prerequisite: ART 120, 130, 230, and 240 or permission of department.

An introductory examination of relief printmaking techniques with concentrated work in the processes of wood cut, wood engraving, and linoleum cut.

327B. Advanced Relief Processes. 5 hours.

Prerequisite: ART 327A and permission of department.

Advanced work in relief processes exploring large scale prints, the use of power tools and in-depth

exploration of multi-block techniques. Emphasis on experimentation within the medium while exploring a specific theme chosen by the student.

328AB. Book Art/Papermaking. 5 hours.

Prerequisite: Junior Standing.

Hand papermaking as a support for other media and as a creative medium in two or three dimensional form. The book, as seen as an art form, is examined in structure and content with skills learned in various binding techniques.

329AB. Fine Printing. 5 hours.

Prerequisite: Junior Standing.

Hand printing and letterpress with an emphasis on the creative synthesis of text and image in a narrative, serial, sequential, or experimental fashion. The book, seen as a fine art multiple, is examined in structure and content with skills learned in hand papermaking, binding, and printing techniques.

330. Senior Exit Studio in Printmaking. 5 hours.

Prerequisite: ART 327A or 328B or 329B; and permission of department.

Advanced approaches in printmaking.

Sculpture

370. Sculpture. 5 hours. Five 2-hour periods.

Prerequisite: ART 120, 130, 230, and 240 or permission of department.

A beginning course in sculpture. Basic forms are explored through a series of problems employing carving, modeling and constructive methods.

371. Sculpture. 5 hours per quarter; maximum of 15 hours. Five 2-hour periods.

Prerequisite: ART 120, 130, 230, and 240 or permission of department.

Course will provide structured, direct model sculptural experiences in both portrait and figure composition. Repeat students will be expected to build on previous experience.

372ABC. Sculpture-Materials I, II, III. 5 hours each. Five 2-hour periods.

Prerequisite: ART 370 or 371.

The A course covers beginning welding techniques and the use of metal in sculpture composition. The B course continues with wood and stone carving, and the C course works with cement and plastic casting and plaster and clay modeling.

373ABC. Sculpture-Casting I, II, III. 5 hours each. Five 2-hour periods.

Prerequisite: ART 370 or 371.

Introduction to methods of producing metal sculpture. The production of sculpture in refractory molds and sand casting will constitute the major emphasis of this course.

374. Sculpture Concepts. 5 hours. Four 2-hour lab periods.

Prerequisite: Permission of department.
Conceptual development of fully realized three-dimensional form beginning with drawings of objects, natural forms, the human figure, landscape, and architecture. Final form will materialize as a maquette or full-scale sculpture.

375. Stone Carving. 5 hours. Four 2-hour lab periods.

Prerequisite: Permission of department.
Exploration of form and spatial concepts through the use of stone carving techniques.

Technical Problems/Internship

301. Technical Problems. 5 hours. Repeatable for maximum 10 hours credit. Five 2-hour periods.
Prerequisite: Permission of department.

A special course for students qualified to carry out individual projects in studio areas. Work is done independently of the regularly scheduled classes.

302. Technical Problems. 5 hours. Repeatable for maximum 10 hours credit. Five 2-hour periods.
Prerequisite: Permission of department.
Continuation of ART 301.

303ABCDEF. Internship in Art. 1-15 hours each; maximum 15 hours credit in any combination.

Prerequisite: Permission of department and written approval of advisor and director of school on required form prior to quarter of enrollment.
Supervised experience in a professional environment such as cooperative programs, agencies, or artists' studios.

- A. Art History
- B. Graphic Design
- C. Computer Art
- D. Art Education
- E. Two-Dimensional Media
- F. Three-Dimensional Media

Honors Program

496H, 497H, 498H. Directed Reading and/or Projects. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

Artificial Intelligence (AI)

Contact Person: Dr. Donald Nute, 542-5110

302. (EPY/PSY) Introduction to Cognitive Science. 5 hours.
See EPY 302.

454. (CS) Artificial Intelligence Programming Techniques. 5 hours.
See CS 454.

Arts and Literature (ARL)

Contact Person: Dr. Alex Rosenberg,
542-3240

412H. Special Problems Seminar in Arts and Literature (Honors). 1-5 hours. Provides investigation and study of selected problems in the area of arts and literature which have special or current relevance to members of the University community. Topics will vary to meet interest and demand.

Biochemistry and Molecular Biology (BCH)

Contact Person: Dr. Michael Adams,
542-2060

310. (BIO) Introductory Biochemistry. 5 hours.
Prerequisite: CHM 240 and 240L or equivalent.
A survey of the chemistry, isolation, physical properties, structures and important reactions of biological molecules to include energetics, enzymology, metabolic pathways plus carbon and nitrogen utilization.

399. Directed Study. 1-5 hours per quarter; maximum of 15 hours.
Prerequisite: BCH(BIO) 310 and permission of department.

A course designed to give the advanced student the opportunity to conduct independent study and research under the direction of individual staff members.

401. Intermediate Biochemistry. 5 hours.
Prerequisite: BCH(BIO) 310 or permission of department.

An intermediate-level course in general biochemistry which stresses the physical and chemical properties of biological molecules. This course will not serve as a prerequisite for advanced subject matter specialty courses in biochemistry (ex. BCH 806, Enzymology).

402. Intermediate Biochemistry. 5 hours.
Prerequisite: BCH 401.

An intermediate-level course in general biochemistry which stresses intermediary metabolism. This course will not serve as a prerequisite for advanced subject matter specialty courses in biochemistry (ex. BCH 806, Enzymology).

403. Laboratory Techniques in Biochemistry. 5 hours. One lecture and four 3-hour lab periods. Prerequisite: BCH(BIO) 310 or BCH 401. (May be taken concurrently with BCH 401 with permission of department.)

A course designed to acquaint the student with basic techniques in biochemistry to include enzyme assay and purification, nucleic acid purification and characterization, chromatography, spectrophotometry, and other modern techniques.

496H, 497H, 498H. Directed Reading and/or Projects. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading, or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

This course provides opportunity for Honors students to undertake individual research in the field of their majors or in a closely related field.

Biology (BIO)

Contact Person: Dr. William Barstow,
542-1691

103-103L. Principles of Biology. 5 hours.

Not open to students with credit in BIO 101-101L, 105-105L, 106-106L, 111-111L, or BOT 121-121L. An introductory biology course which includes: cell structure and function: cell chemistry, cell division; genetics; gene expression and regulation; animal development; evolution; behavior; diversity of viruses and bacteria.

104-104L. Principles of Biology. 5 hours.

Prerequisite: BIO 103-103L. Not open to students with credit in BIO 102-102L, 105-105L, 106-106L, 112-112L, or BOT 122-122L. A second course in an introductory biology sequence which includes: cell respiration, photosynthesis; plant and animal phylogeny; structure and function of major plant and animal systems; ecology.

107-107L. General Biology. 5 hours.

Prerequisite: CHM 121 and 121L or 127H and 127L or 137 and 137L.

Not open to students with credit in BIO 101-101L, 111-111L, or BOT 121-121L.

A general biology course which includes: the scientific method; biological chemistry; cell structure and function; mitosis and meiosis; genetics;

gene expression and regulation; population genetics; evolution; origin of life.

107H-107L. General Biology (Honors). 5 hours. Prerequisite: CHM 121 and 121L or 127H and 127L or 137 and 137L.

Not open to students with credit in BIO 101-101L, 107-107L, 111-111L, or BOT 121-121L.

A general biology course which includes: the scientific method; biological chemistry; cell structure and function; mitosis and meiosis; genetics; gene expression and regulation; population genetics; evolution; origin of life.

108-108L. General Biology. 5 hours.

Prerequisite: BIO 107-107L.

Not open to students with credit in BIO 102-102L, 112-112L, 303-303L.

A second course in a general biology sequence which includes: microbial diversity and physiology; plant diversity, growth, reproduction, and physiology; animal diversity, growth, reproduction, and physiology; ecology.

108H-108L. General Biology (Honors). 5 hours.

Prerequisite: BIO 107-107L or 107H-107L.

Not open to students with credit in BIO 102-102L, 108-108L, 112-112L, 303-303L.

A second course in a general biology sequence which includes: microbial diversity and physiology; plant diversity, growth, reproduction, and physiology; animal diversity, growth, reproduction, and physiology; ecology.

199. Orientation to Biology Degree Programs. 1 hour.

Introduces students to the Division of Biological Sciences, its departments and the requirements for the biology degree, careers in the biological sciences.

205-205L. Biology for Middle School Teachers. 5 hours.

Prerequisite: BIO 105-105L and 106-106L or 102-102L or 104-104L.

Corequisite: ESC 443.

A survey of human biology, animal biology, and plant biology. Emphasis is on these topics covered in middle school science curricula. Restricted to majors in middle school science education.

299H. Sophomore Seminar in Modern Biology. 1 hour.

Repeatable for maximum 2 hours credit.

Prerequisite: BIO 101-101L or 107-107L or 107H-107L.

Corequisite: BIO 102-102L or 108-108L or 108H-108L.

Discussion of topics in modern biology with faculty members from the biological sciences. Topics will vary from year to year, and several topics will be considered each quarter.

310. (BCH) Introductory Biochemistry. 5 hours.
See BCH 310.

311. Basic Skills in Laboratory. 5 hours. Two 5-hour lab periods.

Prerequisite: BIO 107-107L and CHM 240 or 340. A laboratory course emphasizing acquisition of skills in common use in research laboratories. The course covers a spectrum of techniques ranging from solution preparation to isolation and analysis of DNA and protein. Includes proper procedures for keeping a laboratory notebook, laboratory safety and time management.

320. (GN) Genetics. 5 hours.

Prerequisite: BIO 102-102L or 108-108L or 108H-108L; organic chemistry; BCH (BIO) 310 is strongly recommended.

An integrated and comprehensive treatment which deals with genetic mechanisms in viruses, bacteria and eukaryotic cells in a comparative sense. Topics include molecular genetics and gene action, transfer systems and mapping, cytological, quantitative, and population aspects.

321. (GN) Experimental Genetics. 5 hours. Three 3-hour lab periods.

Prerequisite or corequisite: BIO(GN) 320.

A laboratory course in genetics utilizing *Drosophila*, bacteria, phage and fungal systems for the analysis of mutation, transfer systems, mapping, complementation, population studies, and other genetic principles. (Spring quarter.)

330. (CB) Developmental Biology. 5 hours.

Prerequisite: BIO 102-102L or 108-108L or 108H-108L and BCH(BIO) 310; BIO(GN) 320 recommended.

Cell differentiation and morphogenesis of animals, plants and prokaryotes. Topics include: gene regulation at the molecular level, gametogenesis, fertilization, normal embryonic development, cell and tissue interactions, hormonal regulation, and the developmental aspects of cancer and the immune response. (Winter quarter.)

331. (CB) Laboratory in Cellular and Developmental Biology. 5 hours. Three 3-hour lab periods.

Prerequisite: BIO 102-102L or 108-108L or 108H-108L, and BIO(CB) 330 or 340, and CHM 240 and 240L.

A laboratory course on the basic techniques for investigating properties of cells and differentiating systems. Experiments will be performed on the isolation and characterization of cell components, on induction of enzymes, and on developing embryos. Demonstrations of important techniques such as analytical ultracentrifugation, autoradiography and electron microscopy will be included. (Spring quarter.)

340. (CB) Cell Biology. 5 hours.

Prerequisite: BIO 102-102L or 108-108L or 108H-108L and BCH(BIO) 310; BIO(GN) 320 recommended.

An integrated approach to the structure and function of cells. Topics include: the cell architecture, cell cycle, nucleic acid and protein syntheses, membrane phenomena, organellogenesis, energy transductions and cellular control mechanisms.

350. (ECL) Ecology. 5 hours.

See ECL 350.

351. (ECL) Ecology Laboratory. 5 hours.

See ECL 351.

370. Animal Behavior. 5 hours.

Prerequisite: BIO 102-102L or 108-108L or 108H-108L.

An evolutionary approach to the principles of animal behavior emphasizing social organization, animal communication, and the genetic, developmental and physiological bases of behavior. (Winter quarter.)

371. Animal Behavior Laboratory. 5 hours.

Prerequisite: BIO 370 or permission of department.

A laboratory and field course designed to provide experience in methods and techniques used in a broad range of behavior research. First-hand experience with a variety of living animals will illustrate principles developed in BIO 370. Written communication of experimental results is an important emphasis.

380. (CB) Neurobiology. 5 hours.

Prerequisite: BIO 102-102L or 108-108L or 108H-108L.

An introduction to the structural organization and basic physiology of the nervous system. Emphasis is placed on the mechanisms of neural integration required to describe the model systems of motivation, locomotion, perception, and learning. The social and philosophical implications of mind-brain research are discussed. (Spring quarter.)

390. Readings in Biology. 1-5 hours. Repeatable for maximum 5 hours credit.

Prerequisite: Permission of department.

Small student groups will meet weekly with a faculty member to discuss readings in selected areas of biology. Much of the reading is from scientific journals.

421.(GN) Molecular Genetics Laboratory. 5 hours.

See GN 421.

460. (GN) Evolutionary Biology. 5 hours.

Not open to students with credit in BIO 360.

Prerequisite: BIO(GN) 320 or permission of department.

An introduction to the processes of evolution. Topics include: population genetics, speciation, systematics, coevolution, chemical origin of life, history of life, geological record and evolution of humans. (Fall quarter.)

496. Undergraduate Research. 5 hours. Repeatable for maximum 15 hours credit. Three 5-hour lab periods.

Prerequisite: Permission of department.

Research project under the direction of a faculty member done independently of the regularly scheduled classes.

496H, 497H, 498H. Directed Reading and/or Projects. 5 hours each.

Affords Honors students of upper division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

Provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

501. (CB) Theory of Electron Microscopy. 3 hours. Three lectures.

Prerequisite: BIO 102-102L or 108-108L or 108H-108L or equivalent, 3 quarters of Introductory Chemistry, 3 quarters of Introductory Physics, and/or permission of department.

Instrument theory and theory of specimen preparation with emphasis on transmission electron microscopy. Fundamentals of scanning electron microscopy.

503. (CB/VAR) Electron Microscopy Laboratory. 2 hours. Two 3-hour lab periods.

Corequisite: BIO(CB) 501.

Preparation and examination of specimens using ultramicrotomy, metal shadowing and other basic methods for preparing specimens primarily for transmission electron microscopy. Limited introduction to techniques used in scanning electron microscopy.

504. (CB/VAR) Scanning and Analytical Electron Microscopy. 3 hours.

Prerequisite: Permission of department.

The principles and applications of the scanning electron microscope and its imaging and analytical (X-ray) detector systems are presented. Emphasis is placed on specimen preparation, instrumentation and analysis.

505. (CB/VAR) Scanning Electron Microscopy Laboratory. 2 hours. Two 3-hour lab periods.

Corequisite: BIO(CB/VAR) 504.

Preparation and examination of specimens using critical point drying, freeze drying, carbon evaporation and other basic SEM methods.

508. Current Topics in Biology. 3 hours. Repeatable for maximum 15 hours credit.

Current topics in biology for high school teachers.

510P. Biology for Advanced Placement Teachers. 3 hours.

An extensive survey of modern biology designed to prepare secondary school teachers for extensive instruction of Advanced Placement biology students.

Botany (BOT)

Contact Person: Dr. David Porter, 542-1782 or 542-3732

121-121L. Elementary Botany. 5 hours. Four 1-hour lecture periods and one 3-hour lab period. Not open to students with credit in BIO 103-103L. A study of the biology of plants including cell structure and function, plant structure, growth and function and basic ecology.

122-122L. Elementary Botany. 5 hours. Four 1-hour lecture periods and one 3-hour lab period. Prerequisite: BOT 121-121L.

A study of (a) heredity, variation, and evolution of seed plants; (b) representative members of each of the major plant groups; and (c) the relations of plants to their environment.

121H-121L. Introductory Botany (Honors). 5 hours.

Not open to students with credit in BIO 101-101L or 103-103L or 107-107L or 107H-107L or BOT 121-121L or 126H-126L.

Cell structure and chemistry; plant growth; flowers and plant reproduction, photosynthesis; cell respiration; plant transport; ecology.

122H-122L. Introductory Botany (Honors). 5 hours.

Prerequisite: BOT 121-121L or 121H-121L.

Not open to students with credit in BIO 102-102L or 104-104L or 108-108L or 108H-108L or BOT 122-122L or 127H-127L.

Organismal and evolutionary biology are emphasized. Topics covered include: Mendelian genetics; evolution; speciation; bacterial and fungal diversity; non-vascular plant diversity and life history; vascular plant diversity and life history; evolution and diversity of flowering plants; plants in agriculture.

301. (PAT/ANT) Fungi: Friends and Foes. 5 hours.

See PAT 301.

344. (HOR/ANT) Herbs, Spices, and Medicinal Plants. 2 hours.

See HOR 344.

380-380L. Elementary Plant Physiology. 5 hours. Three 1-hour lectures and two 2-hour lab periods.

Prerequisite: BIO 104-104L or 108-108L or BOT 122-122L.

A survey of physiological processes occurring in plants and conditions which affect these processes.

390ABC. Special Problems in Botany. 1-5 hours each; maximum 15 hours.

Prerequisite: Two senior division courses in botany, permission of undergraduate advisor and department.

Independent research and research participation in selected problems.

403. (LAR) Plant Communities of the Southeast. 5 hours.

See LAR 403.

410-410L. Biology of the Algae. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: BIO 104-104L or 108-108L or BOT 122-122L.

Algal phylogeny, taxonomy, cytology, reproduction, and ecological relationships. Emphasis on the organismal biology of algae. Laboratories will concentrate on examination of living materials and will include methods for the isolation and culture of algae.

413. (GGY) Plant Ecology and Biogeography. 5 hours.

See GGY 413.

420-420L. (PAT) Introductory Mycology. 5 hours.

See PAT 420-420L.

423-423L. Plant Anatomy. 5 hours. Three lectures and two 3-hour lab periods.

Prerequisite: BIO 104-104L or 108-108L or BOT 122-122L and BIO(CB) 340 or equivalent or permission of department.

Structure and growth of meristems: development and structure of cells, tissues, and tissue systems; comparative anatomy of stems, roots, leaves, flowers, and fruits; survey of recent advances in study of growth and development of form with emphasis on experimental approaches. Assumes elementary knowledge of cell and tissue structure.

425. Biology of Secondary Plant Products. 5 hours.

Prerequisite: BOT 122-122L and CHM 241 and 241L or permission of department.

An examination of the role of secondary plant metabolites, such as alkaloids, terpenes and pigments, on the relationships and interactions among plants and between plants and animals.

426-426L. (ECL/ENT) Biological Collections Management. 5 hours.

See ECL 426-426L.

431. Evolutionary History of Land Plants. 5 hours. Three 1-hour lectures and two 2-hour lab periods.

Prerequisite: BIO 108-108L or BOT 122-122L or permission of department.

Major evolutionary events and trends that have shaped the history and diversification of land plants from their inception (Silurian) to present times. Both reproductive and vegetative character advances will be examined and analyzed. Course assumes elementary knowledge of land plant diversity (major taxa) and basic plant cell and tissue structure.

465-465L. Plant Taxonomy. 5 hours. Three 1-hour lectures and two 2-hour lab periods. Weekend field trips.

Prerequisite: BIO 104-104L or 108-108L or BOT 122-122L.

History of taxonomy, nomenclature, characters, identification principles, classification, taxonomic relationships, taxonomic literature, species biology, collecting and herbarium, floristic studies.

476. (GGY) Plant Geography. 5 hours.

Prerequisite: BIO 104-104L and ECL(BIO) 350, or equivalent; plus 5 hours at the 300 level or above in botany, or ecology, or geology, or physical geography.

Theories of phytogeographical zonation, plant-geographic processes, and current potential natural vegetation. Includes physical and environmental factors, plant-environmental relations, plant roles and types, vegetation dynamics, geographic responses to disturbance, and vegetation of main world biomes. Emphasis on global-scale patterns and relationships.

477-477L. Community Ecology. 5 hours. Three lectures and two lab periods.

Prerequisite: ECL(BIO) 350 and MAT 253 or permission of department.

The study of community structure, classification, distribution and development.

483-483L. Plant Physiology. 5 hours. Three lectures and one 3-hour lab period.

Prerequisite: BCH (BIO) 310 or equivalent.

Plant physiology for students with cell physiology or biochemistry background. Water relations, mineral nutrition, transport of materials, respiration, photosynthesis, growth and development.

496H, 497H, 498H. Directed Reading and/or Projects. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

Cellular Biology (CB)

The prefix CB supersedes the prefix ZOO. Students may not receive credit for a given numbered course taken under both the CB and ZOO designations.

Contact Person: Dr. David Lindsay,
542-3310

220-220L. Human Anatomy. 5 hours. Four lectures and one 3-hour lab period.

Not open to students with credit in ZOO 212-212L. Prerequisite: BIO 104-104L or equivalent.

Systematic study of human anatomy at the cellular, tissue, and gross levels. Not open to pre-med, pre-dent, or pre-vet students. This course is designed for pre-nursing, pre-physical therapy, and physical education students.

221-221L. Human Physiology. 5 hours. Four lectures and one 3-hour lab period.

Not open to students with credit in ZOO 213-213L. Prerequisite: BIO 104-104L and CHM 111 and 111L or equivalent.

Systematic study of the physiology of the human body. Not open to pre-med, pre-dent, or pre-vet students. This course is designed for pre-nursing, pre-physical therapy, and physical education students.

300-300L. Comparative Anatomy. 5 hours. Three lectures and three 2-hour lab periods.

Not open to students with credit in ZOO 326-326L. Prerequisite: BIO 108-108L or equivalent.

Structure, function, and development in animal groups of evolutionary and research significance.

320-320L. Anatomical Basis for Medical Physiology. 5 hours. Three lectures and one 3-hour lab period.

Not open to students with credit in ZOO 312-312L. Prerequisite: BIO 104-104L or 108-108L and admission to the College of Pharmacy.

Systematic study of human anatomy designed for pharmacy students. Not open to pre-med, pre-dent, or pre-vet students.

330. (BIO) Developmental Biology. 5 hours.

See BIO 330.

331. (BIO) Laboratory in Cellular and Developmental Biology. 5 hours.

See BIO 331.

340. (BIO) Cell Biology. 5 hours.

See BIO 340.

370-370L. Animal Physiology. 5 hours. Four lectures and one 3-hour lab period.

Not open to students with credit in ZOO 327-327L. Prerequisite: BIO 108-108L or equivalent.

A comparative study of physiological principles, including evolutionary and ecological factors in animal functions.

380. (BIO) Neurobiology. 5 hours.

See BIO 380.

400-400L. Cell Structure and Organization. 5

hours. Three lectures and two 3-hour lab periods. Not open to students with credit in ZOO 484-484L.

Prerequisite: CB 300-300L or equivalent.

A study of the tissues and their organization into organs and organ systems in animals.

410. (MIB) Immunology. 5 hours.

See MIB 410.

434. Biology of Aging. 5 hours.

Not open to students with credit in ZOO 465.

Prerequisite: BIO 104-104L or 108-108L.

Biological processes accompanying aging in humans and other organisms. Emphasis on physiological decline; theoretical explanations; attempts to prolong life; and the utility and limitations of model systems used to analyze human aging.

450-450L. Medical Parasitology. 5 hours. Three lectures and two 2-hour lab periods.

Not open to students with credit in ZOO 472-472L. A comparative study of internal parasites of man and the lower animals.

460-460L. Biology of Protists. 5 hours. Three lectures and two 2-hour lab periods.

Not open to students with credit in ZOO 402-402L.

A general and comparative study of unicellular eukaryotes (protozoa, algae, and zoosporic fungi) which are collectively known as protists. Topics include protistan structure and function, evolutionary relationships among protists, life histories, and symbiotic origin of organelles.

472. Adaptational Physiology. 3 hours.

Not open to students with credit in ZOO 424.

Prerequisite: Permission of department.

The environmental physiology of animals; osmotic and ionic regulation; temperature regulation; gas exchange.

473. Endocrinology. 5 hours.

Prerequisite: CB 300-300L or 370-370L or permission of department.

Not open to students with credit in ZOO 429.

A general and comparative study of vertebrate endocrinology and the principles of chemical integration, emphasizing the physiology and evolution of regulatory mechanisms and the molecular bases of hormone action.

496H, 497H, 498H. Directed Reading and/or Projects. 5 hours each.

Not open to students with credit in ZOO 496H, 497H, 498H.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

497. Directed Reading. 1-5 hours; repeatable for maximum 20 hours credit for CB 497 and 498.

Prerequisite: Permission of faculty supervisor and department.

Detailed study under the direction of a faculty supervisor of a restricted area of cellular biology, through reading and discussion of original papers, reviews and monographs with the preparation of critical oral and written evaluations of the material read.

498. Research in Cellular Biology. 1-5 hours; repeatable for maximum 20 hours credit for CB 497 and 498.

Prerequisite: 10 hours of senior division work in biological science and permission of department. Affords advanced students the opportunity to conduct independent laboratory research under direction of individual staff members.

499. Undergraduate Seminar in Cellular Biology. 1 hour per quarter; maximum 3 hours.

Prerequisite: A major in cellular biology.

Preparation, oral presentation and discussion of reports of original research or of critical surveys of the technical literature under supervision of the departmental faculty. Required of all cellular biology majors.

499H. Honors Thesis. 5 hours.

Not open to students with credit in ZOO 499H.

This course provides the opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

501. (BIO) Theory of Electron Microscopy. 3 hours.

See BIO 501.

503. (BIO/VAR) Electron Microscopy Laboratory. 2 hours.

See BIO 503.

504. (BIO/VAR) Scanning and Analytical Electron Microscopy. 3 hours.

See BIO 504.

505. (BIO/VAR) Scanning Electron Microscopy Laboratory. 2 hours.

See BIO 505.

Chemistry (CHM)

Contact Person: Dr. Robert S. Phillips, 542-2626

106. Physical Science for Teachers. 5 hours. An introduction to physical science. Limited to candidates for B.S. in Education degrees. Preparation for teaching physical science at the middle school level.

111, 112. Elementary Chemistry. 4 hours each. Not open to students with credit in chemistry.

Corequisite: CHM 111L, 112L, respectively.

A non-mathematical study of chemical principles. Cannot be used toward any B.S. degree requirements in Arts and Sciences.

111L, 112L. Elementary Chemistry Laboratory. 1 hour each.

Corequisite: CHM 111, 112, respectively.

121, 122. General Chemistry. 4 hours each.

Prerequisite or corequisite for CHM 121: MAT 116 or MAT 102 or equivalent.

Corequisite: CHM 121L, 122L, respectively.

The first course is a systematic treatment of fundamental chemical principles. The second course is a continuation of the first.

121L, 122L. General Chemistry Laboratory. 1 hour each.

Corequisite: CHM 121, 122, respectively.

123. Qualitative Analysis. 3 hours.

Prerequisite: CHM 121 and 121L, 122 and 122L.

Corequisite: CHM 123L.

The fundamental theories of qualitative analysis and analysis of common cations and anions by semi-micro methods.

123L. Qualitative Analysis Laboratory. 2 hours.

Corequisite: CHM 123.

127H, 128H, 129H. Advanced General Chemistry (Honors). 4, 4, and 3 hours, respectively.

Not open to students with credit in general chemistry.

Prerequisite: Admission based upon results of placement tests in chemistry and mathematics. See description for CHM 137, 138, 139. Registration through the Programs for Superior Students office.

127L, 128L, 129L. Advanced General Chemistry Laboratory. 1, 1, and 2 hours, respectively.

Corequisite: CHM 127H, 128H, 129H, respectively.

137, 138, 139. Advanced Modern Chemistry. 4, 4, and 3 hours, respectively.

Not open to students with credit in general chemistry.

Chemistry

Prerequisite for 137: Placement tests in chemistry and mathematics.

Corequisite for 137: CHM 137L, MAT 253.

Prerequisite for 138: CHM 137.

Corequisite for 138: CHM 138L, MAT 254.

Prerequisite for 139: CHM 138.

Corequisite for 139: CHM 139L.

A rigorous, in-depth study of chemical principles designed for the well-prepared student.

137L, 138L, 139L. Advanced Modern Chemistry Laboratory. 1, 1, and 2 hours, respectively. Corequisite: CHM 137, 138, 139, respectively.

240, 241. Fundamental Organic Chemistry. 4 hours each.

Prerequisite: CHM 122 and 122L or 138 and 138L.

A two-quarter sequence designed to teach students the basics of organic chemistry in preparation for entrance into veterinary medicine and pharmacy schools or for majors in bioscience fields. Credit cannot be used toward a major in chemistry.

240L, 241L. Fundamental Organic Chemistry Laboratory. 1 hour each.

Prerequisite or corequisite: CHM 240 and 241 respectively.

261. Elementary Organic Chemistry. 4 hours. Not open to students with credit in organic chemistry.

Prerequisite: Two quarters of college chemistry, numbered 111 or above.

A brief introduction to organic chemistry with material of special interest to students of agriculture, home economics, and forest resources.

261L. Elementary Organic Chemistry Laboratory. 1 hour.

Prerequisite or corequisite: CHM 261.

280. Quantitative Inorganic Chemistry. 3 hours.

Prerequisite: CHM 123 and 123L.

Corequisite: CHM 280L.

The fundamental principles of quantitative analysis using gravimetric, volumetric, and spectrophotometric measurements.

280L. Quantitative Inorganic Chemistry Laboratory. 2 hours.

Prerequisite or corequisite: CHM 280.

340, 341, 342. Modern Organic Chemistry. 4 hours each.

Prerequisite: CHM 121 and 121L, 122 and 122L or 137 and 137L, 138 and 138L.

A three-quarter sequence designed for chemistry majors and students preparing for medical and dental schools. The course content of CHM 240 and 241 does not parallel that of CHM 340 and 341 and consequently CHM 240 is not an acceptable prerequisite for CHM 341.

340L, 341L, 342L. Modern Organic Chemistry Laboratory. 1 hour each.

Prerequisite or corequisite: CHM 340, 341, 342, respectively.

347, 348, 349. Introduction to Research. 1-5 hours each. Repeatable for maximum 5 hours credit each.

Prerequisite: CHM 381 and 381L or 427 or 491C or permission of department.

381. Advanced Analytical Chemistry. 3 hours. Prerequisite: CHM 139 and 139L or 280 and 280L, 340 and 340L.

Corequisite: CHM 341 and 341L.

Separation methods including gas chromatography, quantitative spectrometric instrumentation and methods, and the interpretation of spectra.

381L. Advanced Analytical Chemistry Laboratory. 2 hours.

Prerequisite or corequisite: CHM 381.

390, 391. Fundamentals of Physical Chemistry. 3 hours each.

Prerequisite: CHM 280 and 280L or 139 and 139L and 341 and 341L, PCS 229-229L or 239-239L, MAT 254.

A two-quarter course in the basic concepts and techniques of physical chemistry. Designed for pre-medical and non-professional chemistry majors.

395. Physical Chemistry for Biologists. 5 hours. Prerequisite: CHM 341 and 341L, PCS 128-128L, MAT 253.

A condensed, one-quarter course stressing the topics of physical chemistry of most importance for students in the biological sciences. This course cannot be used as credit toward a chemistry major.

402L. Experimental Inorganic Chemistry. 2 hours.

Prerequisite or corequisite: CHM 426.

A laboratory course involving the synthesis and characterization by modern techniques of typical inorganic compounds.

426, 427. Intermediate Inorganic Chemistry. 3 hours each.

Prerequisite: CHM 491C or equivalent.

A two-quarter sequence designed as an introduction to modern theories of bonding and structure, reaction mechanisms and synthetic methods in inorganic systems.

437. Interpretive Spectroscopy in Organic Chemistry. 3 hours.

Prerequisite: CHM 342 and 342L.

Practical introduction to ultraviolet, infrared, ¹H and ¹³C nuclear magnetic resonance, and mass spectroscopy as tools for characterization of the structure of organic molecules, with particular

emphasis on identifying structures from representative sets of spectra.

444. Heterocycle Chemistry. 3 hours.

Prerequisite or corequisite: CHM 342 and 342L. A study of the structures, spectra, reactions and syntheses of heterocyclic compounds.

491ABC. Physical Chemistry. 4 hours each.

Prerequisite: CHM 139 and 139L or 280 and 280L, 341 and 341L, PCS 229 or 239, MAT 255.

A three-quarter sequence in the fundamental principles of physical chemistry. Kinetic molecular theory, thermodynamics, equilibria, electrochemistry, reaction kinetics, quantum mechanics and molecular spectroscopy. Intended for students who will enter chemistry as a profession or will do advanced study in chemistry.

496A. Experimental Physical Chemistry. 1 hour.

Prerequisite or corequisite: CHM 390 and 391 or 491A.

Treatment of experimental data, errors, graphical procedures and mathematical techniques.

496B. Experimental Physical Chemistry. 2 hours.

Prerequisite or corequisite: CHM 391 or 491BC. Laboratory experiments in selected areas of physical chemistry. Thermochemistry, colligative properties, electrochemistry, reaction kinetics and spectroscopy.

496H, 497H, 498H. Directed Reading and/or Projects. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

502P. Chemistry for Advanced Placement Teachers. 3 hours.

An extensive survey of general chemistry, designed to prepare in-service secondary school teachers for effective instruction of Advanced Placement students. Emphasizes significant facts and theories of modern chemistry.

580. Instrumental Methods of Analysis. 3 hours.

Prerequisite: CHM 341 and 341L, 381 and 381L and 496C.

The use of electrochemical (ion selective electrodes, polarography and coulometry) radiochemical, thermal (thermogravimetry, scanning calorimetry) and kinetic methods of analysis.

580L. Instrumental Methods of Analysis Laboratory. 2 hours.

Prerequisite or corequisite: CHM 580.

585. Modern Analytical Spectroscopy. 3 hours. Fundamental theory, instrumental principles, and current applications associated with modern optical analytical spectroscopy. Both atomic and molecular spectroscopic methods are covered including atomic absorption and emission, rotational, IR, Raman, electronic, and photoluminescence spectroscopy. Modern methods of analytical Fourier transform spectroscopy as applied to optical spectroscopy will also be covered.

Chinese (CHI)

See Comparative Literature.

Classics

Contact Person: Dr. R. A. LaFleur, 542-9264

Classical Culture (CLC)

All Classical Culture courses are given in English and require no knowledge of either the Latin or the Greek languages.

120. Classical Culture: Greece. 5 hours.

A study of the characteristics of Greek literature, made principally through translations of selections from Greek authors.

121. Classical Culture: Rome. 5 hours.

A study of the characteristics of Latin literature, made principally through translations of selections from Latin authors.

150. Mythology in Classical Literature. 5 hours.

An introduction to the myths and sagas of the Greeks and Romans, in particular through ancient literature.

205H. Classical Culture: Greece (Honors). 5 hours.

Not open to students with credit in CLC 120 or 305H.

This course involves studies of important phases of Greek civilization from the Bronze Age through the time of Alexander the Great. Attention is given to history, literature, government, art, and science.

206H. Classical Culture: Rome (Honors). 5 hours.

Not open to students with credit in CLC 121 or 306H.

This course involves studies of important phases of Roman civilization through the reading of Latin authors in translation. Attention is given to history, literature, government, art, and science.

Classical Culture

207H. Mythology in Classical Literature (Honors). 5 hours.

Not open to students with credit in CLC 150 or 307H.

This course involves study of the myths and sagas of the Greeks and Romans, in particular through ancient literature, and their function as a framework of reference for classical and subsequent Western literature.

211. Medical Terminology. 5 hours.

A course introducing medical terminology derived from Greek and Latin. The course will concentrate on recognizing the meanings of the components of medical terms and understanding the principles that govern their arrangement. History of ancient medicine will also be considered.

310. (LIN) English Derivatives from Greek and Latin. 5 hours.

General etymology and vocabulary of the English language. Prefixes, suffixes, and root words, as well as families of words will be studied.

411. Gender and Greek Religion. 5 hours.

Prerequisite: CLC 120 or 150 or WS 201.

Ancient Greek religion and culture in light of Feminist Theory; scrutiny of ancient Greek values pertaining to gender and religion; reconstructions, through examining literary and archaeological evidence, of ancient Greek religious beliefs and practices pertaining to a) goddesses, their sanctuaries and festivals, and b) life cycle events for males and females.

420. Selected Topics in Ancient Civilization. 5 hours. Repeatable for maximum 15 hours credit.

Prerequisite: CLC 120 or 121 or 205H or 206H or permission of department.

In-depth study of special topics in the civilization of Greece or Rome. Topics will vary as demand requires.

430. Directed Readings in Classical Culture. 5 hours. Repeatable for maximum 10 hours credit.

Prerequisite: Permission of department.

Individual study, reading, or projects under the direction of a faculty project director.

449. Archaic Greece. 5 hours.

Prerequisite: CLC 120 or 205H or HIS 325 or 438M or permission of department.

Close study of the expanding world of Greek culture in the period from 750 to 480 B.C., including consideration of the many new and influential developments in art, literature, history, political science, and philosophy, and their interrelationships.

451. Greek Sanctuaries and Festivals. 5 hours.

Prerequisite: CLC 120 or 205H or permission of department.

An examination of the major Greek sanctuaries and their physical remains, and of the Greek religious calendar and its important festivals, including the Olympic Games and the Panathenaica.

453. Ancient Cities of Greece and Rome. 5 hours.

Survey of selected Greek and Roman cities and their architecture to understand the principles upon which they were planned and laid out. Students will study the theories of Hippodamus and others, and the writings of Vitruvius. Detailed study of the topography of Athens and Rome.

454. The Etruscans and Early Rome. 5 hours.

Prerequisite: CLC 121 or HIS 325 or HIS 439F or permission of department.

A survey of the art and culture of the people of Northern Italy known as the Etruscans, with special attention to their relationship with the Greek world and their role in the development of Rome as a city.

455. Pompeii and Herculaneum: The Buried Cities. 5 hours.

Prerequisite: CLC 121 or 206H, or HIS 325 or 439F or 439P, or permission of department.

An in-depth study of Pompeii, Herculaneum, and the area destroyed by the eruption of Mt. Vesuvius. Concentration will be on political, social, religious, and economic life, combined with a study of the painting, sculpture, and architecture of the excavated cities and villas.

457. Ancient Tragedy. 5 hours.

Prerequisite: Five hours of literature or ancient history or drama.

Examination of the conventions of classical tragedy as exemplified in the plays (in English translation) of the Greek dramatists Aeschylus, Sophocles, and Euripides, as well as the Roman tragedian Seneca.

460. Roman Epic Poetry. 5 hours.

Prerequisite: CLC 121 or 206H or HIS 325 or 439F or 439P or permission of department.

A study of the epic poetry of ancient Rome with special emphasis on the three outstanding epic writers: Ennius, Vergil, and Lucan. The historical background of epic will be examined, and the poems will all be read in English translation, some attention being given to Renaissance and modern translations.

462. The Archaeology of the Greek Colonies. 5 hours.

Prerequisite: CLC 120 or HIS 111 or 325 or 438M or 438P or ART 287 or permission of department.

An examination of the archaeology of the Greek colonies in Ionia, Magna Graecia, and the Black Sea area to identify and explain the combination of Greek and indigenous cultures in these areas on the fringes of the Greek world.

463. The Hellenistic World. 5 hours.

Prerequisite: CLC 120 or ART 287 or HIS 111 or 325 or 438M or 438P or 439F or 439P or permission of department.

An in-depth examination of the archaeology, art, culture and history of Greece and the East from the rise of Alexander to Rome's annexation of Egypt.

464. The Archaeology of Rome's Provinces. 5 hours.

Prerequisite: CLC 121 or 206H or 453 or HIS 111 or 439P or ART 287 or 477 or permission of department.

An examination of the archaeology of the Western and/or Eastern provinces of the Roman Empire, concentrating on the major cities and sanctuaries and their physical remains.

480. Practicum in Classical Archaeology. 5 hours.

Prerequisite: CLC 120 or 121 or permission of department.

Corequisite: CLC 481.

Introduction to all aspects of modern field archaeology on a classical site, including excavation techniques, the keeping of field records, and the classification and conservation of finds from the moment of recovery to their final deposition in museums. Open only to students participating in the University's Mediterranean excavation.

481. Archaeology of Punic and Roman Carthage. 5 hours.

Prerequisite: CLC 120 or 121 or permission of department.

Corequisite: CLC 480.

An intensive study of the civilization of Roman North Africa from the Punic period through the Arab Conquest, using the important city of Carthage as a model. Open only to students participating in the University's Mediterranean excavation.

496H, 497H, 498H. Directed Reading and/or Projects. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading, or projects under the supervision of a project director.

499H. Honors Thesis. 5 hours.

This course provides the opportunity for an Honors student to undertake individual research in the field of his/her major, or in a closely related field.

Greek (GRK)**101. Elementary Greek I.** 5 hours.

Not open to students with credit in GRK 205 and 206.

An introduction to the pronunciation, grammar, reading, and translation of classical Attic Greek.

102. Elementary Greek II. 5 hours.

Not open to students with credit in GRK 205 and 206.

Prerequisite: GRK 101 or equivalent.

An introduction to the pronunciation, grammar, reading, and translation of classical Attic Greek, continued from GRK 101.

103. Readings in Greek. 5 hours.

Not open to students with credit in GRK 205 and 206.

Prerequisite: GRK 101 and 102.

Selected readings from Greek authors.

205. Intensive Elementary Greek I. 5 hours.

An intensive introduction to the pronunciation, grammar, reading, and translation of classical Attic Greek.

206. Intensive Elementary Greek II. 5 hours.

Not open to students with credit in GRK 102 or 103.

Prerequisite: GRK 205 or equivalent.

A continuation of GRK 205.

304. Intermediate Greek: Plato. 5 hours.

Prerequisite: GRK 103 or equivalent.

Close study of Plato's *Apology*, plus selections from his *Crito* and *Phaedo*. Attention to both style and philosophic thought.

310. Intermediate Greek: New Testament. 5 hours.

Prerequisite: GRK 103.

Intermediate readings in the Greek New Testament.

401. Homer. 5 hours.

Prerequisite: GRK 304 or equivalent.

A detailed study of selections from the *Iliad* and/or the *Odyssey*.

402. Hesiod. 5 hours.

Prerequisite: GRK 304 or equivalent.

Close study of Hesiod's two surviving poems, the *Theogony* and the *Works and Days*, with special attention to the relationship of his language and religious thinking to that of Homer.

403. Greek Lyric Poets. 5 hours.

Prerequisite: GRK 304 or equivalent.

A study of the whole body of extant Greek elegy and lyric, with attention to its political and social background, and to the relation of these literary types to epic and dramatic poetry.

404. Herodotus and Thucydides. 5 hours.

Prerequisite: GRK 304 or equivalent.

The Persian and Peloponnesian Wars through selected readings.

405. Aeschylus. 5 hours.

Prerequisite: GRK 304 or equivalent.

Close study of two or three of Aeschylus' seven surviving plays, with emphasis on his theology and special uses of the Greek language.

406. Sophocles. 5 hours.

Prerequisite: GRK 304 or equivalent.

Close study of two or three of Sophocles' seven surviving plays, with emphasis on the poet's religious and humanistic values and his dramatic style.

407. Euripides. 5 hours.

Prerequisite: GRK 304 or equivalent.

Close study of two or three of Euripides' nineteen surviving plays, with emphasis on the poet's dramatic style and his treatment of social, political, and religious themes.

408. Aristophanes. 5 hours.

Prerequisite: GRK 304 or equivalent.

Reading, translation, and analysis of selected comedies of Aristophanes. Emphasis is placed on the language, style, and thought of Aristophanes, and on the generic characteristics of Greek Old Comedy.

409. Advanced Readings: Plato. 5 hours.

Prerequisite: GRK 304 or equivalent.

Advanced reading, translation, and analysis of the dialogues of Plato. Emphasis is placed on the language, style, and philosophical thought of Plato.

410. Attic Orators. 5 hours.

Prerequisite: GRK 304 or equivalent.

A study of the orations of Demosthenes, Lysias, and Aeschines, with emphasis on the function and techniques of persuasion in oratory and on the political and social contexts of these orations.

420. Readings in Selected Greek Authors. 5 hours per quarter; maximum of 15 hours.

Prerequisite: GRK 304 or equivalent.

Study of less commonly read Greek authors, such as Pindar, Xenophon, Menander, Lucian, Plutarch, to be chosen according to the interests of students and instructor.

Latin (LAT)

Students continuing Latin begun in high school will be placed in the appropriate course on the basis of scores on the College Entrance Examination Board Achievement Test, the CEEB Advanced Placement Exam, or the MAPS placement test administered by the University of Georgia Counseling and Testing Center, together with other pertinent information.

101. Elementary Latin I. 5 hours.

An introduction to the Latin language: pronunciation, fundamentals of grammar, reading and translation.

102. Elementary Latin II. 5 hours.

Prerequisite: LAT 101 or one year of high school Latin.

An introduction to the Latin language, continued from Latin 101.

103. Elementary Latin III. 5 hours.

Prerequisite: LAT 102.

Completion of study of Latin grammar and syntax begun in LAT 101 and 102 and introduction to reading continuous Latin passages.

204. Readings in Golden Age Latin Literature. 5 hours.

Prerequisite: LAT 103.

Introduction to Golden Age Latin prose and poetry. Readings from a variety of authors, such as Cicero, Caesar, Livy, Vergil, and Horace. Review of elementary Latin grammar and syntax.

304. Vergil's *Aeneid*. 5 hours.

Prerequisite: LAT 204.

An introduction to Latin poetry, poetic syntax, meter, and style through reading Vergil's *Aeneid*.

402. Roman Epic. 5 hours.

Prerequisite: LAT 304 or equivalent.

Selected readings from the Latin epic poets Ennius, Vergil, Lucan, and others.

403. Roman Historians. 5 hours.

Prerequisite: LAT 304 or equivalent.

Selected readings from such Roman historical writers as Caesar, Sallust, and Ammianus Marcellinus.

404. Roman Elegy and Lyric. 5 hours.

Prerequisite: LAT 304 or equivalent.

Selected readings from the works of the poets Catullus, Tibullus, Horace, Ovid, and others. Studies in the development of Latin poetic form, meter, and diction.

405. Roman Epistles. 5 hours.

Prerequisite: LAT 304 or equivalent.

Selected readings from the letters of Cicero, Seneca, Pliny the Younger, and others.

406. Roman Satire. 5 hours.

Prerequisite: LAT 304 or equivalent.

Selected readings from the satirists Horace, Juvenal, and others.

408. Roman Didactic Poetry. 5 hours.

Prerequisite: LAT 304 or equivalent.

The poet as teacher. Major portions of Lucretius's poetic treatise on Epicureanism, the *De Rerum Natura*, and Vergil's *Georgics*. The manner in which poetic form and imagery express philosophy.

409. Medieval Latin. 5 hours.

Prerequisite: LAT 304 or equivalent.

Selected readings from one or more Medieval Latin authors. A study of Latin vocabulary and style during the Middle Ages.

413. Livy. 5 hours.

Prerequisite: LAT 304 or permission of department.

Selected readings from the *Ab Urbe Condita* of Livy, with attention given to literary and historical issues surrounding the author and his work.

414. Tacitus. 5 hours.

Prerequisite: LAT 304 or permission of department.

Selected readings from the *Annales*, *Historiae*, and/or minor works of Tacitus, with attention given to literary and historical issues surrounding the author and his works.

415. Horace. 5 hours.

Prerequisite: LAT 304 or equivalent.

Readings from the works of Horace, including studies in the cultural context of Roman poetry, as well as the development of Latin poetic form, meter, and diction.

416. Ovid. 5 hours.

Prerequisite: LAT 304 or equivalent.

Readings from the *Metamorphoses* and non-elegiac works of Ovid, including studies in the cultural context of Roman poetry, as well as the development of Latin poetic form, meter, and diction.

417. Roman Elegy. 5 hours.

Prerequisite: LAT 304 or equivalent.

Readings from the elegiac work of Tibullus/Sulpicia, Propertius, and Ovid, including studies in the cultural context of Roman poetry, as well as the development of Latin poetic form, meter, and diction.

418. Catullus. 5 hours.

Prerequisite: LAT 304 or equivalent.

Readings from the *Carmina* of Catullus, including studies in the cultural context of Roman poetry, as well as the development of Latin poetic form, meter, and diction.

420. Advanced Readings in Latin. 5 hours.

Repeatable for maximum 15 hours credit.

Prerequisite: LAT 304 or equivalent.

Selected readings in one or more Latin authors or genres. Topics to be selected on the basis of students' needs.

519P. Latin Poetry for Advanced Placement Teachers. 3 hours.

Prerequisite: LAT 304 or equivalent.

An introduction to the reading, translation, and analysis of Latin lyric and epic poetry for teachers, with emphasis on the authors taught in Advanced Placement courses (Catullus, Horace, Vergil),

and attention to current methods and materials for the high school classroom.

Comparative Literature (CML)

Contact Person: Dr. Masaki Mori, 542-2360

210. (GGY/ANT/HIS/SOC) Introduction to Africa. 5 hours.

See GGY 210.

221, 222. Western World Literature. 5 hours each.

Prerequisite: ENG 102 or 105H.

A survey of Western World Literature from Homer to the 20th Century.

225H, 226H. Western World Literature (Honors). 5 hours each.

Not open to students with credit in CML 221 and 222.

Prerequisite: ENG 102 or 105H.

A survey of Western World Literature from Homer to the 20th Century for Honors.

240. Asian American Literature. 5 hours.

A survey of representative works of literature by Asian American writers, including works written in English and translations of works originally written in Asian languages.

310. Speculative Fiction. 5 hours.

Prerequisite: Completion of Arts & Sciences literature requirement or permission of department. An historical and thematic treatment of fictional speculation about scientific matters from the dialogues of Plato to the contemporary science fiction of Vonnegut.

311. The Text of the Self. 5 hours. Repeatable for maximum 10 hours credit.

Prerequisite: CML 221 or 222 or 225H or 226H. Comparative study of the self as presented in literature of the first person (such as lyric poetry and autobiography) with particular emphasis on questions of genre, rhetoric and poetics.

314. Introduction to Early Women Writers. 5 hours.

Prerequisite: Completion of Arts & Sciences literature requirement or permission of department. An introductory survey of Western World literature as represented by women writers from the 7th Century B.C. through the 17th Century A.D.

315. Introduction to Modern African Literature. 5 hours.

Prerequisite: Completion of Arts & Sciences literature requirement or permission of department.

Comparative Literature

An introductory survey of the literature of 20th-Century Africa in translation, with emphasis on the African novel.

316. Classical Mythology in Modern Literature. 5 hours.

Prerequisite: Completion of Arts & Sciences literature requirement or permission of department. A discussion of 20th-Century literary works (emphasis on narrative and drama) dealing with reinterpretation of ancient classical myths, inclusive of English, American, Italian, French, Spanish, German and Russian literatures.

317. Detective Fiction. 5 hours.

An historical study of the evolution of the mystery story in the United States, England, and Europe, based on readings from acknowledged masters of the genre such as Poe, Doyle, Christie, Simenon, Hammett, Chandler, et al. No foreign language requirement.

318. (ANT) Introduction to East Asian Cultures. 5 hours.

Prerequisite: Completion of Arts & Sciences literature requirement or permission of department. Cultures of China, Japan, Korea, and Vietnam, with emphasis on the formation of Chinese culture and its diffusion and variation within the other national groups.

320. Contemporary World Literature. 5 hours. Repeatable for maximum 10 hours credit.

Prerequisite: Completion of Arts & Sciences literature requirement or permission of department. A study of selected works of contemporary world literature, with emphasis on works from Eastern Europe, the Middle East, Asia, Africa, and Latin America.

399. Directed Study in Comparative Literature. 1-5 hours. Repeatable for maximum 15 hours credit.

Prerequisite: Permission of department. Independent study and research under the direction of individual faculty members.

401. Approaches in Comparative Literature. 5 hours.

Prerequisite: Satisfaction of core curriculum literature requirement.

An introduction to the methods and literary theories encompassed by the discipline of comparative literature.

402. Senior Seminar in Comparative Literature. 5 hours.

The capstone course for the undergraduate major in Comparative Literature, focusing on a particular theme, methodology, theory or problem. Enrollment limited to CML majors.

405. Literature and Nature. 5 hours. Repeatable for maximum 10 hours credit.

Prerequisite: Satisfaction of core curriculum literature requirement or permission of department. A comparative study of literary and philosophical texts of various historical periods that reveal the changing relationship between human beings and their nonhuman environment.

407. Renaissance European Literature. 5 hours.

Prerequisite: Satisfaction of sophomore literature requirement.

A survey of the literature of Western Europe (Italian, French, Spanish, Germanic, and English), 1450-1600, with emphasis on literary types and prevailing ideas. Reading of representative works.

408. Romantic European Literature. 5 hours.

Prerequisite: Satisfaction of sophomore literature requirement.

A comparative study of the rise and development of Romanticism in the 18th and 19th Centuries, with reading of selected literature and criticism.

410. Mannerist and Baroque Literature. 5 hours.

Prerequisite: Completion of Arts & Sciences literature requirement or permission of department.

An examination of literary forms and issues in Europe ca. 1550-1700, with special attention to the intellectual background, and the interrelationships between literature and the other arts and sciences.

411. Medieval European Literature. 5 hours.

Prerequisite: Satisfaction of sophomore literature requirement.

A study of the literatures of medieval Europe with emphasis on major literary genres and the philosophical and social presuppositions which inform them.

412. 18th-Century European Literature. 5 hours.

Prerequisite: Satisfaction of sophomore literature requirement.

A survey of the literature of England, France, and Germany in the 18th Century, with emphasis on literary types and prevailing ideas. Reading of representative works.

415. The Novel to 1900. 5 hours.

Prerequisite: Satisfaction of sophomore literature requirement.

A study of the novel as a genre. Origins of prose fiction, theory of the novel, and representative readings of novels in the Western tradition from the 16th through the 19th Centuries.

417. The Modern Novel. 5 hours.

Prerequisite: Satisfaction of sophomore literature requirement.

A study of experimental trends in the 20th-century novel, with reading of representative works in the Western tradition.

420. Literature and the Visual Arts. 5 hours. Repeatable for maximum 10 hours credit.

Prerequisite: Completion of sophomore literature sequence or graduate status in Division of Language and Literature or Fine Arts, or permission of department.

This course will treat formal, philosophical, and thematic relationships between literature and one or more of the visual arts in a given period. Instructor will determine focus of course.

421. Literature and Cinema. 5 hours. Repeatable for maximum 10 hours credit.

Formal, philosophical, and thematic relationships between literature and cinema.

425. Seminar in the Comic Mode. 5 hours.

Prerequisite: Satisfaction of sophomore literature requirement.

A seminar exploring the relation of humor to the philosophical and ideological orientation of culture in comic literature from Europe and Latin America from the Middle Ages to the present.

426. Seminar in the Tragic Mode. 5 hours.

Prerequisite: Satisfaction of sophomore literature requirement.

A study of the nature of the tragic and the relationship of tragic literature to the philosophic, religious, and ideological orientation of culture from Antiquity to the present in the literatures of Europe and America.

427. Seminar in the Didactic Mode. 5 hours.

Prerequisite: Satisfaction of sophomore literature requirement.

A study of didactic literature in relation to the ideology of its culture (dominant or subversive) in European and American letters.

440. Central European Literature. 5 hours.

Prerequisite: Satisfaction of core curriculum literature requirement.

The literature of Central Europe, including selected works from Central European nations.

460. Survey of East Asian Literature I. 5 hours.

A survey and analysis of poetry, prose, and drama in traditional China and Japan. The works will be in English translation.

461. Survey of East Asian Literature II. 5 hours.

A continuation of a survey and analysis of poetry, prose, and drama in China and Japan. The emphasis will be on the nineteenth and twentieth centuries, and the works will be in English translation.

462. East Asian Novel. 5 hours.

A survey and analysis of the major/minor novelists and their works, especially those of the nineteenth and twentieth centuries. The novels are in English translation.

487. (LIN) Language, Gender, and Culture. 5 hours.

See LIN 487.

496H, 497H, 498H. Directed Reading and/or Projects. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

571. (JUR) Law and Literature. 3 hours.

Literature and literary theory relevant to procedural problems in death cases; criminal responsibility and plea bargaining; rape; obscenity; modern tort law; and the parole evidence rule. Works include Euripides, Koestler, Kierkegaard, Fisch, Durskin, Ecco, Nussbaum, Posner, Fish, Foucault and Nietzsche.

Chinese (CHI)

Contact Person: Dr. Kam-ming Wong,
542-2129

101. Elementary Chinese I. 5 hours.

Fundamentals of grammar, pronunciation, composition and conversation.

102. Elementary Chinese II. 5 hours.

Prerequisite: CHI 101.

A continuation of CHI 101, Elementary Chinese I.

103. Elementary Chinese III. 5 hours.

Prerequisite: CHI 102.

A continuation of CHI 102, Elementary Chinese II.

201. Intermediate Chinese I. 5 hours.

Prerequisite: CHI 103 or permission of department.

Intermediate grammar, reading, conversation and composition.

202. Intermediate Chinese II. 5 hours.

Prerequisite: CHI 201 or permission of department.

A continuation of CHI 201.

300. Intermediate Chinese III. 5 hours.

Prerequisite: CHI 202 or permission of department.

A continuation of CHI 202.

301. Advanced Chinese I. 5 hours.

Prerequisite: CHI 300 or permission of department.

A continuation of CHI 300.

302. Advanced Chinese II. 5 hours.

Prerequisite: CHI 301 or permission of department.

Chinese • Japanese • Korean

A continuation of CHI 301.

303. Advanced Chinese III. 5 hours.

Prerequisite: CHI 302 or permission of department.

A continuation of CHI 302.

399. Directed Study in Chinese Language and Literature. 1-5 hours. Repeatable for maximum 15 hours credit.

Prerequisite: Permission of department.

Independent study and research under the direction of individual faculty members.

Japanese (JPN)

Contact Person: Dr. Masaki Mori, 542-2360

101. Elementary Japanese I. 5 hours.

Basic Japanese, with emphasis on pronunciation and the mastery of simple conversational forms and simple sentence patterns. Focus on the spoken language, with some attention to the Japanese kana phonetic syllabary.

102. Elementary Japanese II. 5 hours.

Prerequisite: JPN 101.

More complex structures; practice in conversational Japanese; practice in reading and writing, with a limited number of kanji.

103. Elementary Japanese III. 5 hours.

Prerequisite: JPN 102.

Attention to achieving familiarity with a wide range of constructions and further practice in spoken Japanese; also emphasis on reading and writing.

110. Intensive Japanese. 5 hours.

Prerequisite: Knowledge of Japanese beyond beginning level.

Japanese language course with focus on reading, writing, speaking, and understanding Japanese for students beyond the beginning level.

201. Intermediate Japanese I. 5 hours.

Prerequisite: JPN 103.

Equal emphasis on fluency in spoken Japanese and reading skills.

202. Intermediate Japanese II. 5 hours.

Prerequisite: JPN 201 or equivalent.

A continuation of JPN 201.

300. Intermediate Japanese III. 5 hours.

Prerequisite: JPN 202 or equivalent.

A continuation of JPN 202.

301. Advanced Japanese I. 5 hours.

Prerequisite: JPN 300 or permission of department.

A continuation of JPN 300.

302. Advanced Japanese II. 5 hours.

Prerequisite: JPN 301 or permission of department.

A continuation of JPN 301.

303. Advanced Japanese III. 5 hours.

Prerequisite: JPN 302 or permission of department.

A continuation of JPN 302.

399. Directed Study in Japanese Language and Literature. 1-5 hours. Repeatable for maximum 15 hours credit.

Prerequisite: Permission of department.

Independent study and research under the direction of individual faculty members.

411. Advanced Japanese IV. 5 hours.

Prerequisite: JPN 303 or permission of department.

A continuation of JPN 303, with emphasis on improved proficiency in the four language skills of reading, writing, speaking, and listening and concentration on the reading of literary texts in Japanese.

412. Advanced Japanese V. 5 hours.

Prerequisite: JPN 411 or permission of department.

A continuation of JPN 411, including the introduction of basic concepts of translating and interpreting from English into Japanese and from Japanese into English and the reading of literary texts in Japanese.

413. Advanced Japanese VI. 5 hours.

Prerequisite: JPN 412 or permission of department.

A continuation of JPN 412.

450. Readings in Japanese Literature. 5 hours.

Repeatable for maximum 15 hours credit.

Prerequisite: JPN 303 or equivalent proficiency in Japanese.

Selected readings of Japanese literature in the original language. Texts will vary, with focus on reading of works of literature and discussion of issues in literary criticism in Japanese.

Korean (KRN)

101. Elementary Korean I. 5 hours.

Pronunciation, grammar: particles and basic sentence construction. Sentence patterns. Reading and writing in Hangul, the national writing system.

102. Elementary Korean II. 5 hours.

Prerequisite: KRN 101.

A continuation of KRN 101.

103. Elementary Korean III. 5 hours.

Prerequisite: KRN 102.

A continuation of KRN 102.

201. Intermediate Korean I. 5 hours.

Prerequisite: KRN 103.

Pronunciation, grammar: particles and sentence construction. Speech styles: declarative, interrogative, propositive, and imperative. Sentence

patterns. Reading and writing in Hangul, the national writing system.

202. Intermediate Korean II. 5 hours.

Prerequisite: KRN 201.

A continuation of KRN 201.

203. Intermediate Korean III. 5 hours.

Prerequisite: KRN 202.

A continuation of KRN 202.

Computer Science (CS)

Contact Person: Dr. Daniel Everett,
542-2749

101-101L. Introduction to Information Processing and Microcomputers. 5 hours. Three lectures and two 2-hour lab periods.

Not open to students with credit in a CS course, STA 221 or STA 210H or MS 209-209L.

Introduction to computers and how they are used in the business, professional, and academic worlds. The history, terminology, and social effects of computers are considered. Laboratory sessions provide hands-on experience in file management, word-processing, spreadsheet applications and database management.

201-201L. Introduction to Computing. 5 hours. Three lectures and two 1-hour lab periods.

Prerequisite: MAT 116 or equivalent.

Algorithms, programs, and computing systems. Fundamental techniques of program development. Programming projects in a structured computer language. Hands-on experience using microcomputers.

202-202L. Intermediate Computer Programming. 5 hours. Three lectures and two 1-hour lab periods.

Prerequisite: CS 201-201L.

An intermediate programming course emphasizing systems methods: top-down design, modularity, testing, and structured techniques. Applications and exercises from areas of numeric and non-numeric processing, internal and external data structures, and file processing.

203. Programming Project Design. 3 hours.

Prerequisite: CS 202-202L and CS(MAT) 261.

Design, construction, and evaluation of a medium length program. Topics include tools for software construction, evaluation and maintenance; design principles; and design, construction and evaluation of abstract data types and algorithms.

261. (MAT) Discrete Structures I. 3 hours.

Not open to students with credit in MAT(CS) 467.

Prerequisite: CS 201-201L.

Survey of discrete structures for computer scientists, including sets, set equations, propositional logic, Boolean algebra, induction proofs, functions, relations, and combinatorics.

262. (MAT) Discrete Structures II. 3 hours.

Not open to students with credit in MAT(CS) 467.

Prerequisite: CS(MAT) 261 and MAT 253.

Survey of discrete deterministic and non-deterministic systems useful to computer scientists, including number systems, modular arithmetic, graph theory, elements of probability, reliability, queuing systems, and networks.

303. Data Structures. 3 hours.

Prerequisite: CS 203 and CS(MAT) 262.

Basic concepts of information as data. Lists and strings. Tree structures. Storage devices and structures. Sorting and searching techniques. Storage allocation and collection.

361. Automata. 3 hours.

Prerequisite: CS(MAT) 262.

An introductory overview of the theory and utility of finite state machines and Turing machines in computer science. Deterministic and nondeterministic finite automata, multitape Turing machines, and the universal Turing machine.

371. Introductory Computer Laboratory. 3 hours.

Prerequisite: CS(MAT) 261.

This course will provide hands-on experience for computer students in microcomputer-based systems, assembler-level programming, and links from higher languages to assembler.

405. Software Engineering. 3 hours.

Prerequisite: CS 303 and 361.

Provides an in-depth study and practicum of the system's engineering methodologies as applied to the complete life cycle of software systems.

414. Numerical Methods for Computation I. 3 hours.

Prerequisite: CS 303 and MAT 255.

Corequisite: MAT 256.

Computer arithmetic and errors, numerical solutions of nonlinear equations, polynomial interpolation, numerical differentiation and integration, numerical solution of systems of linear equations, and computer problems and applications.

415. Numerical Methods for Computation II. 3 hours.

Prerequisite: CS 414.

Spline functions, numerical solutions of ordinary differential equations (initial and boundary value problems), numerical solutions of systems of ordinary differential equations, numerical solutions of partial differential equations, scientific problem solving using standard mathematical software, and computer problems and applications.

427. (MAT) Graph Theory. 3 hours.

See MAT 427.

437. Database Management I. 3 hours.

Prerequisite: CS 303.

A two-quarter sequence on computerized data management. The first quarter concentrates on computer file organization, access, and retrieval techniques. Consideration is given to sequential files, indexed sequential files, and direct files.

438. Database Management II. 3 hours.

Prerequisite: CS 437.

A continuation of CS 437. Large database management systems based on the hierarchical model, the network model, and the relational model are studied.

447. (MAT) The Design and Analysis of Computer Algorithms I. 3 hours.

See MAT 447.

448. (MAT) The Design and Analysis of Computer Algorithms II. 3 hours.

See MAT 448.

449. The Design and Analysis of Computer Algorithms III. 3 hours.

Prerequisite: MAT (CS) 448.

Matrix operation, the fast Fourier transform, NP-complete problems, intractable problems.

450. Programming Languages. 3 hours.

Prerequisite: CS 303 and 361.

A survey of the structure and design of modern programming languages. Topics include procedure, control, object and data abstraction, modularization and concurrency, as well as vector operations, list processing, string manipulation, logical inferencing and exception handling.

454. (AI) Artificial Intelligence Programming Techniques. 5 hours. Three lectures and two 1-hour lab periods.

Prerequisite: CS 203 or permission of department.

Corequisite: CS(PHY) 455.

An introduction to programming in LISP and PROLOG, with emphasis on artificial intelligence techniques. Other languages used for artificial intelligence work will be presented more briefly.

455. (PHY) Artificial Intelligence. 5 hours.

Prerequisite: CS 203 or permission of department or [PHY 110 and one of PHY 301, 303, or 361].

An examination of the artificial intelligence approach to modeling cognitive processes. Includes an introduction to heuristic methods, problem representation and search methods, classic AI techniques, and a review of the controversial issues of the AI paradigm of cognition as computation.

457. Design and Construction of Compilers I. 3 hours.

Prerequisite: CS 303 and 361 and 371.

First of a three-quarter sequence covering compilers for high-level programming languages. Emphasis is on context free grammars, various parsing techniques, and a project in which a working compiler is developed.

458. Design and Construction of Compilers II. 3 hours.

Prerequisite: CS 457.

A continuation of CS 457.

467. (MAT) Introduction to Combinatorics I. 3 hours.

See MAT 467.

468. (MAT) Introduction to Combinatorics II. 3 hours.

See MAT 468.

472. Computer System Architecture. 3 hours.

Prerequisite: CS 303 and 361 and 371.

Functional structure of hardware components and their interrelationship, input/output facilities, control functions, and microprocessors.

473. Computer Operating Systems. 3 hours.

Prerequisite: CS 303 and 371.

Introduction to the theory and structure of operating systems. Issues of efficient resource allocation and management in multiprogramming systems.

474. Systems Programming. 3 hours.

Prerequisite: CS 473.

Introduction to computer languages, equipment, techniques for developing operating system facilities, and interfacing and control of external devices to computing facilities.

476. Data Communications and Networks. 3 hours.

Prerequisite: CS 303 and 361 and 371.

Planning, design, and implementation of data communication and distributed processing networks. Overview of existing systems and current and future technologies. Algorithms and analysis techniques pertaining to scheduling, routing, and performance.

481. Introduction to Computer Graphics. 3 hours.

Prerequisite: CS 303 and 371 and MAT 256.

Corequisite: MAT 255.

An introductory course in the principles and practices of display in computing systems, including plotters and window-oriented refreshed displays. Hardware characteristics and software methods and conventions for display systems are discussed, including data structures.

482. Computer Graphics. 3 hours.

Prerequisite: CS 481.

A course in the principles and practices of display, especially raster displays. Hardware characteristics and software methods and conventions are discussed, with emphasis on data and code structures for color raster displays and interaction with the user.

490. Special Topics in Computer Science. 1-5 hours. Repeatable for maximum 10 hours credit.

Prerequisite: CS 303 and 361.

A special topics course for upper division computer science majors. Various advanced topics.

495. Directed Study in Computer Science. 1-5 hours. Repeatable for maximum 10 hours credit.

Prerequisite: Permission of department.

Content will vary in response to the interests, needs, and capabilities of the students and faculty involved. Individual, guided study in computer science.

500P. Computer Science I for Advanced Placement Teachers. 3 hours.

An extensive survey of computer programming, computer systems, and their effects on society, designed to prepare in-service secondary school teachers for effective instruction of Advanced Placement students. Software design methodologies in a structured programming language will be emphasized.

504. Introduction to UNIX™ and C Programming. 3 hours.

Prerequisite: CS 201-201L or equivalent.

An introduction to the UNIX™ operating system, including basic system commands, editing, shell programming, and use of software management tools. An introduction to the C programming language.

506. UNIX™ Systems Administration. 3 hours.

Prerequisite: CS 504 or equivalent.

Management and administration of UNIX™ computer systems. Includes account, process, disk, terminal, and network management; installation, startup and shutdown; backups and troubleshooting. Hands-on lab emphasized.

533. Data and File Processing. 5 hours.

Prerequisite: CS 201-201L or STA 221 or 222 or MS 219H-219L.

Data and file processing for upper-division non-majors and graduate students. Computer applications to file and data processing such as sorting, merging, updating of master files, and others in data processing systems.

Drama and Theatre (DRA)

Contact Person: Dr. Sylvia J. H. Pannell,
542-2836

200. Appreciation of Theatre. 5 hours.

Not open to students with credit in DRA 300. Introduction to all aspects of the theatrical experience on stage, screen, and TV, emphasizing the role of the audience, as well as that of the artist. May not be used for credit towards the drama major.

205ABC. Applied Drama Laboratory. 1 hour each. Repeatable for maximum 2 hours credit each.

Prerequisite: Successful completion of at least 45 undergraduate credit hours.

Open only to drama majors. Three quarter hours required of lower division majors. Individually assigned production and/or performance crew.

210H. Appreciation of Theatre (Honors). 5 hours.

Not open to students with credit in DRA 200, 300, or 310H.

See DRA 200.

212. Introduction to Cinema. 5 hours.

An introduction to film aesthetics and an analysis of film as an art form. Critical viewing of selected films in laboratory. Discussions and analyses of film in class lecture. Papers on topics in film and audience values.

213. American Ethnic Cinema. 5 hours.

Cultural history of the most important ethnic filmmakers in the American cinema from the 1920's to the present. Stories and styles of the films, as well as the underlying economic and social contexts.

230. Introduction to Theatrical Design. 5 hours.

Basic design for theatre technicians with emphasis on drafting, perspective, color theory, rendering in various media and drawing the human form.

250. Beginning Acting. 5 hours.

Open only to drama majors. Participation in daily regimen of exercises for the body and the voice as well as a series of group and individual activities designed to introduce and develop basic acting skills.

301. Introduction to Acting. 5 hours.

A course for the non-drama major designed to introduce and develop basic acting skills.

302. Basic Dramatic Writing. 5 hours.

An introduction to dramatic writing for various media including stage, film and television. Writing short scripts for reading performance.

Drama and Theatre

333. Stage Costuming. 5 hours. Lecture-laboratory course.
Prerequisite: DRA 230 or equivalent.
Fundamental techniques of planning, pattern making, and construction of stage and screen costumes.

334. Scene Building and Painting. 5 hours. Lecture-laboratory course.
Prerequisite: DRA 230 or equivalent.
An introductory course in the arts of the theatre with emphasis on construction and painting of scenery.

352. Make-up for Stage and Screen. 5 hours.
Prerequisite: DRA 230 or equivalent.
Primarily for majors in drama, visual arts, journalism. Basic principles and practices in make-up for stage, screen and television. Practice in use of cosmetics, wigs, hair pieces and facial prosthetics, masks. Work with departmental productions.

353. Theatrical Dance and Movement. 5 hours.
Primarily for drama majors. An introduction to basic stage movement and dance for performers and directors. A lecture-laboratory course with opportunities for performance.

400. Playwriting. 5 hours.
Prerequisite: DRA 302 or equivalent.
Laboratory course in dramatic writing, including study and practice in writing for the modern stage and screen.

420. History of the Theatre. 5 hours.
Prerequisite: Two senior division courses in English or drama.
A study of the history of dramatic art from Greece through Shakespeare.

421. History of the Theatre. 5 hours.
Prerequisite: Two senior division courses in English or classics or drama.
A study of the history of dramatic art from Elizabethan period to Ibsen.

422. History of the Theatre. 5 hours.
Prerequisite: Completion of two senior division courses in the humanities.
A study of 20th-century dramatic art and media.

425. History of Cinema I. 5 hours.
A study of the development of the international film and of film theories from 1895 to 1945, with emphasis on cinema as a dramatic medium.

426. History of Cinema II. 5 hours.
A development of international film and film theories from 1945 to present with emphasis on cinema as a dramatic medium.

428. Women in Performance. 5 hours.
Women's contributions to the performing arts, focusing on contemporary American artists in such fields as theatre, film, dance, performance art, and other contemporary performance genres.

429. Play Analysis. 5 hours.
Prerequisite: Two senior division courses in English, drama, speech or permission of department.
A study of a method of analysis for dramatic scripts and an intensive examination of selected modern and period play scripts.

433. Period Dress, Manners and Movement for the Theatre. 5 hours.
An advanced survey of dress, manners and movement of selected theatrical periods, concentrating on the dictates of dress and manners upon dance and movement.

446. History of Dramatic Art in Italy. 5 hours.
Prerequisite: Must be registered in the Cortona program and participate on-site.
Offered only in conjunction with summer quarter in Cortona, Italy. A study of dramatic art in Italy and Sicily from the Greek colonists to the present. Special emphasis on field trips to archaeological sites and special museums. Visits to contemporary performances.

448. Afro-American Drama. 5 hours.
A study of the emergence of a distinct and conscious African American theatre in the United States.

464. (TMI) History of Costume: Antiquity to 19th Century. 5 hours.
See TMI 464.

496H, 497H, 498H. Directed Reading and/or Projects. 5 hours each.
These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.
This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

500. Advanced Dramatic Writing. 5 hours.
Prerequisite: DRA 400 or equivalent.
A laboratory course for the advanced writer interested in developing dramatic properties and materials for contemporary markets.

501. Intermediate Acting. 5 hours.
Prerequisite: DRA 250 or 301 or equivalent.
An intermediate course in acting intended for students not in the B.F.A. program. Study in voice, movement, and characterization. Practical work in Showcase productions.

505ABC. Applied Drama Laboratory. 1 hour each. Repeatable for maximum 5 hours credit.
Open only to drama majors. Individually assigned production and/or performance crew. Required each quarter of drama majors in the B.F.A. program.

506. Senior Preparatory. 1 hour.

Prerequisite: Completion of at least 20 hours of drama courses including all drama core courses below 300.

A survey of the preparations needed to commence a career in the dramatic arts. Required of all drama majors. Open only to drama majors.

531. Technical Problems. 5 hours. Repeatable for maximum 10 hours credit.

Prerequisite: DRA 334 or permission of department.

Advanced study of the theory and techniques of scenery construction with emphasis on materials, equipment, organization, and relations between the production staff. Course may be repeated once for credit with change of subject matter.

533. Stage Costume Design and Research. 5 hours.

Prerequisite: DRA 230 and 333 or permission of department.

Research sources and techniques with application to the design of costumes for dramatic presentations.

534. History of Costume and Decor. 5 hours.

Prerequisite: DRA 230 or equivalent.

An investigation into the styles of costuming, architecture, furnishings, and ornamentation in significant theatrical periods.

535. Scene Design. 5 hours. Lecture-laboratory course.

Prerequisite: DRA 230 or equivalent.

The principles and techniques of scene design and scene painting. Development of floor plans, sketches and scaled models. Suggested elective for majors in the visual arts.

536. Stage Lighting. 5 hours.

Prerequisite: DRA 230 or equivalent.

Study of problems of lighting for the stage and screen; lighting instruments, lighting control; operation of lighting equipment. Practical assignments in stage and film production.

552. Actor Training I. 5 hours.

Prerequisite: DRA 250 or equivalent.

An intensive course in voice and body training.

553. Actor Training II. 5 hours.

Prerequisite: DRA 552 or equivalent.

An intensive course in voice and body training.

554. Characterization for the Actor. 5 hours.

Prerequisite: DRA 553 or equivalent.

A study of role analysis and the problems and techniques of creating subtext with special relation to the actor's natural qualities.

555. Advanced Acting. 5 hours.

Prerequisite: DRA 554 or equivalent.

A study of the problems and techniques of acting in periods and styles through intensive scene study and performance.

557. Acting for TV and Cinema. 5 hours.

Prerequisite: DRA 555.

Advanced work in the special problems of applying acting technique to the demands of the modern media. Practical work in class and in actual productions with the vocal and physical problems of dramatic material designed for TV and cinema.

559. Special Projects in Drama. 5 hours.

Corequisite: DRA 230 or 250 and permission of department.

Individual projects offered in conjunction with such special programs of the department as the Highlands Playhouse Internship Program. Usually offered for off-campus activity only.

560. Play Direction. 5 hours.

Prerequisite: DRA 230 and 250 or 301, or equivalent.

An introduction to the methods and procedures of the art of dramatic directing.

561. Play Direction Laboratory. 5 hours.

Prerequisite: DRA 560 or equivalent.

Course concentrates on the director's analysis of the script, the actor-director relationship and theatrical style. Each student directs a one-act play or short film.

563. Producing the New Script. 5 hours.

Prerequisite: Permission of department.

A course for directors, actors, and scriptwriters in the problems of producing the new script for stage, screen, or other media. Full collaboration of dramatic artists in producing a selection of new scripts by student writers.

564. Directing for the Cinema. 5 hours.

Prerequisite: DRA 561 or equivalent.

Lab-lecture course dealing with theories and techniques of the art of directing dramatic cinema.

575. Seminar in Advanced Scene Design. 5 hours.

Prerequisite: DRA 535.

Advanced study of techniques and resources of scene design, dealing with principles and practices of rendering and composition, design research and styles of scene design.

576. Seminar in Advanced Stage Lighting. 5 hours.

Prerequisite: DRA 536.

Advanced study of theory and practice of lighting, dealing with advanced forms of circuitry and control equipment, design and execution of light plots for complex stage productions and methods of lighting applied in varying forms of theatrical presentation.

Ecology (ECL)

Contact Person: Dr. Gary W. Barrett,
542-2968

100-100L. Ecological Basis of Environmental Issues. 5 hours. Three lectures and two 1-hour lab periods.

Not open to students with credit in ECL(ANT/IDS) 307.

Ecological concepts that form the basis for understanding environmental issues confronting us; population growth, loss of diversity, resource limitation, pollution, and global climate change.

307. (ANT/IDS) Environment and Humans. 5 hours.

Not open to students with credit in ZOO(ANT/IDS) 307.

Prerequisite: BIO 104-104L or 108-108L or equivalent.

Study of macro-environmental problems currently faced by humans, placing them in historical perspective, and relating them to the natural laws and ecological process which govern the outcome of human-environmental interactions.

326-326L. Vertebrate Diversity and Evolution. 5 hours. Three lectures and two 3-hour lab periods.

Prerequisite: BIO 108-108L.

Survey of the evolution, diversity, and higher order relationships of vertebrate animals and their principal adaptations to life.

350. (BIO) Ecology. 5 hours. Four lectures and one discussion.

Not open to students with credit in BIO 250.

Prerequisite: BIO 102-102L or 108-108L or 108H-108L, MAT 253, and CHM 121.

A first course in the science of biotic populations and communities. The course covers population structure and dynamics, organization and classification of communities, nutrient and energy flows in ecosystems, and the principles of systems ecology. (All quarters.)

351. (BIO) Ecology Laboratory. 5 hours. Three 3-hour lab periods.

Prerequisite: ECL(BIO) 350 or permission of department.

A laboratory course designed to illustrate the principles developed in ECL(BIO) 350. Particular emphasis will be placed on structure, function and control mechanisms at the community ecosystem level of organization. (Spring quarter.)

352. Ecological Applications. 3 hours.

Prerequisite: ECL(BIO) 350.

Current ecological approaches to quantify impacts of natural and human disturbances on ecosystem structure and function. Case studies

illustrate impacts and management strategies in fields such as environmental toxicology, conservation ecology, agroecosystem ecology, and restoration ecology.

358-358L. (FRS) Natural History of Vertebrates. 5 hours.

See FRS 358-358L.

400-400L. Organismal Ecology. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: ECL(BIO) 350 and MAT 254; STA 421 recommended.

Ecological interactions and processes at the level of the organism. The evolutionary basis of biodiversity, the distribution and classification of taxa in time and space. Form and function of organisms from the perspective of anatomical, physiological, and behavioral adaptations, and the effects of environmental modification on adaptation.

401-401L. Population and Community Ecology. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: ECL(BIO) 350 and MAT 254; STA 421 recommended.

Ecological patterns and processes at the level of populations and communities, including population dynamics, species interactions, and community organization. Laboratories illustrate techniques for quantifying population size, spatial patterns, predation, competition, and mutualism.

402-402L. Ecosystem Ecology. 5 hours. Three lectures and one 4-hour lab period.

Prerequisite: ECL(BIO) 350 and MAT 254; STA 421 recommended.

Ecosystem structure and function with emphasis on energetic and biogeochemical processes in natural and managed ecosystems. Methodology of ecosystem analysis, including field and laboratory instrumentation, computer analysis and simulation techniques.

403-403L. Mammalogy. 5 hours. Three lectures and two 2-hour lab periods.

Not open to students with credit in ZOO 403-403L. Prerequisite: CB 300-300L or equivalent.

A study of the taxonomy, distribution, ecology, and evolution of mammals. (Offered alternate years.)

404-404L. Herpetology. 5 hours. Three lectures and two 2-hour lab periods.

Not open to students with credit in ZOO 404-404L. Prerequisite: CB 300-300L or equivalent or permission of department.

The evolution, ecology, behavior, structure and physiology of amphibians and reptiles. (Offered alternate years.)

405-405L. Ichthyology. 5 hours. Three lectures and two 2-hour lab periods.

Not open to students with credit in ZOO 405-405L. Prerequisite: CB 300-300L or equivalent. A study of the taxonomy, distribution, ecology, and evolution of the marine and freshwater fishes of eastern North America.

406-406L. Ornithology. 5 hours. Three lectures and two 2-hour lab periods.

Not open to students with credit in ZOO 406.

Prerequisite: CB 300-300L or equivalent.

An introduction to the study of birds, emphasizing the identification, classification, life histories, and behavior of Georgia species.

407-407L. Invertebrate Zoology. 5 hours. Three lectures and two 3-hour lab periods.

Not open to students with credit in ZOO 407-407L.

Prerequisite: BIO 108-108L or permission of department.

Functional morphology, taxonomy, phylogeny, and general biology of invertebrates.

421. (ANT) Zooarchaeology. 5 hours.

See ANT 421.

426-426L. (ENT/BOT) Biological Collections Management. 5 hours.

Not open to students with credit in ZOO(ENT/BOT) 426-426L.

Prerequisite: One course in upper division of Biological Sciences and permission of department.

Theories, policies and operational procedures in the management of biological research collections including higher category classification, field collecting, accessioning, preparation, curation, and data management. Two weekend field trips.

429. (ANT) Environmental Archaeology. 5 hours.

See ANT 429.

431-431L. (FRS) Limnology. 5 hours. Three lectures, two 2-hour lab periods, and field trips.

Not open to students with credit in FRS(ZOO) 431-431L.

Prerequisite for FRS 431-431L: FRS 330.

Prerequisite for ECL 431-431L: ECL(BIO) 350 or permission of department.

Consideration will be given to common organisms found in aquatic habitats associated with forest lands and to the various factors which influence them.

497. Directed Reading. 2-5 hours. Repeatable for maximum 5 hours credit.

Prerequisite: Junior or senior standing; permission of department.

Reading and discussion of original papers and reviews in ecology under the direction of a faculty supervisor.

498. Research. 2-5 hours. Repeatable for maximum 10 hours credit.

Prerequisite: Senior standing; permission of department.

Independent research in ecology under the direction of individual faculty members.

English (ENG)

Contact Person: Dr. Hugh Ruppensburg, 542-9266 or Dr. Blue Calhoun, 542-2258

099R. Review of Written English. 3 institutional hours.

Prerequisite: Open to students who have not passed the Regents' Test.

Review of usage, sentence structure, mechanics of writing, diction, paragraph structure, and theme development. A refresher course in the elements of composition. May not be used for graduation credit.

101. English Composition. 5 hours.

Expository themes on both general and literary topics developed by basic rhetorical methods.

102. English Composition. 5 hours.

Prerequisite: Credit for ENG 101 by the placement test or earned with a grade of C or better.

Themes on fiction, poetry, and drama.

102M. Multicultural English Composition. 5 hours.

Not open to students with credit in ENG 102.

Prerequisite: ENG 101.

Themes on fiction, poetry, and drama using multicultural literature.

105H. Composition and Literature (Honors). 5 hours.

Not recommended for students without credit for ENG 101 or equivalent, and not open to students with credit for ENG 102.

Literary works as specimens of effective writing.

231G. English Literature from the Beginnings to 1700. 5 hours.

Prerequisite: ENG 102.

Writers studied typically include the *Beowulf* poet, *Gawain* poet, Chaucer, Spenser, Sidney, Marlowe, Donne, Jonson, Shakespeare, and Milton. Satisfies core literature requirement.

232G. English Literature from 1700 to the Present. 5 hours.

Prerequisite: ENG 102.

English literature from 1700 to the present. Writers studied typically include Pope, Swift, Johnson, Blake, Wordsworth, Coleridge, Keats, Tennyson, Arnold, Browning, one or two 19th century novelists, Yeats, Woolf, and Joyce. Satisfies core literature requirement.

233G. American Literature from the Beginnings to 1865. 5 hours.

Prerequisite: ENG 102.

American literature from the beginnings to 1865. Study of the most significant work by writers in America from the 17th-century colonists through the Revolution to the Civil War. Writers may include Anne Bradstreet, Benjamin Franklin, Washington Irving, Nathaniel Hawthorne, Ralph Waldo Emerson, Frederick Douglass, Herman Melville, Harriet Beecher Stowe, and Emily Dickinson. Satisfies core literature requirement.

234G. American Literature from 1865 to the Present. 5 hours.

Prerequisite: ENG 102.

The most significant work by American writers between the end of the Civil War and the present. Writers may include Mark Twain, Henry James, Edith Wharton, William Faulkner, Langston Hughes, T.S. Eliot, Zora Neale Hurston, Richard Wright, Elizabeth Bishop, Saul Bellow, and Adrienne Rich. Satisfies core literature requirement.

235H. Masterpieces of Literature in English (Honors). 5 hours.

Not open to students with credit in ENG 231G.

Prerequisite: ENG 102 or 105H.

Masterpieces of English literature from the beginnings to 1700.

236H. Masterpieces of Literature in English (Honors). 5 hours.

Not open to students with credit in ENG 232G.

Prerequisite: ENG 102 or 105H.

Masterpieces of English literature from 1700 to the present.

237H. Masterpieces of American Literature (Honors). 5 hours.

Not open to students with credit in ENG 233G.

Prerequisite: ENG 102 or 105H.

Major works in American literature since 1800.

240G. Multicultural Literature in America. 5 hours.

Prerequisite: ENG 102 or 102M.

Important writers and movements in the mosaic of American culture and literature with special attention paid to African American, Native American, Hispanic American, and Asian American literatures. Satisfies core literature requirements.

300. Introduction to the English Language. 5 hours.

Prerequisite: ENG 102.

An introduction to the history, structure, and modern varieties of the English language.

301. Introduction to Folklore. 5 hours.

Prerequisite: ENG 102.

An introduction to the discipline of folklore, its aims, methods, and subject matter. The course emphasizes the major genres of verbal folklore—folk speech, superstitions, proverbs, riddles, rhymes, legends, folktales, ballads, and folksong.

302. Fantasy Literature. 5 hours.

Prerequisite: ENG 102.

An analysis of fantasy literature: its general characteristics, special qualities, and current popularity, including the works of one or more of the important fantasy writers and selected critical and theoretical works.

305. Lyric Poetry. 5 hours.

Prerequisite: ENG 102.

Types, techniques, and interpretations of poems selected from English and American literature.

323. (AAM) Development of African American Literature. 5 hours.

Prerequisite: ENG 102.

Afro-American literature, chiefly of the 20th century: Richard Wright, Langston Hughes, Ralph Ellison, James Baldwin, Chester Hines, and Leroi Jones, with side glances at lesser writers, at Negro folktales, and at recent African novelists.

330. Women in Literature. 5 hours.

Prerequisite: ENG 102.

Reading and analysis of works in British and American literature by and about women.

359. Technical Writing. 5 hours.

Prerequisite: ENG 102.

Intensive practice in communicating through technical correspondence, reports, and proposals.

360. Advanced Composition. 5 hours.

Prerequisite: Permission of department.

Expository writing.

361. The Short Story. 5 hours.

Prerequisite: ENG 102.

The short story as a literary form.

365. Drama. 5 hours.

Prerequisite: ENG 102.

Representative plays in English.

380T. Creative Writing. 5 hours; repeatable for a maximum of 15 hours.

Prerequisite: ENG 102.

Emphasis upon poetry and fiction. No more than 10 credits total in ENG 380T and ENG 480T may be counted toward the English major.

400T. (LIN) History of the English Language. 5 hours.

Prerequisite: Two of ENG 231G, 232G, 233G or any two courses that satisfy the Arts and Sciences literature requirement of the core curriculum.

The development of present English through the stages of Old English, Middle English, and early Modern English. Emphasis is placed on the growth of the vocabulary and changes in pronunciation, although grammatical changes receive some attention. Elementary phonetics and phonemics are studied in connection with sound change and dialectal variations in pronunciation.

401. (LIN) American English. 5 hours.

Prerequisite: Ten hours of sophomore literature courses.

The history, present status, and future prospects of American English, including standards and internal variation.

402T. (LIN) Language Variation. 5 hours.

See LIN 402T.

406T. (LIN) Old English. 5 hours.

Prerequisite: Two of ENG 231G, 232G, 233G or any two courses that satisfy the Arts and Sciences literature requirement of the core curriculum.

The language and literature of England before the Norman conquest, with reading of selected texts.

411T. (LIN) English Grammar. 5 hours.

Prerequisite: Two of ENG 231G, 232G, 233G or any two courses that satisfy the Arts and Sciences literature requirement of the core curriculum.

English grammar in the scholarly tradition of Curme and Jespersen.

413T. English Grammar: Phonology and Morphology. 5 hours.

Prerequisite: Two of ENG 231G, 232G, 233G or any two courses that satisfy the Arts and Sciences literature requirement of the core curriculum.

The phonological and morphological structure of Modern English.

415T. (LIN) Transformational Syntax. 5 hours.

See LIN 415T.

417T. (LIN) Second Language Acquisition. 5 hours.

Prerequisite: ENG(LIN) 411T.

Study of linguistic theories of second language acquisition, with emphasis on the acquisition of English. Topics include order of acquisition, socio-cultural factors with linguistic bases, and neurolinguistic models.

418T. (LIN) ESL Error Analysis. 5 hours.

Prerequisite: ENG(LIN) 411T.

Psycholinguistic theory applied to problems in second language learning, and the prediction of language behavior through use of contrastive analysis.

421T. Old English Literature. 5 hours.

Prerequisite: ENG(LIN) 406T or reading knowledge of Old English.

Prose and poetry of the Old English period, exclusive of *Beowulf*, with emphasis on poetry. Works will be read in Old English, with supplementary translations.

422T. Beowulf. 5 hours.

Prerequisite: ENG(LIN) 406T or reading knowledge of Old English.

The poem in the original Old English, with attention to important critical studies.

423T. Medieval Literature. 5 hours.

Prerequisite: Two of ENG 231G, 232G, 233G or any two courses that satisfy the Arts and Sciences literature requirement of the core curriculum.

Masterpieces of medieval literature, exclusive of Chaucer. Most works will be read in Modern English translation.

424T. Chaucer. 5 hours.

Prerequisite: Two of ENG 231G, 232G, 233G or any two courses that satisfy the Arts and Sciences literature requirement of the core curriculum.

Canterbury Tales, *Troilus and Criseyde*, and minor poems.

430T. Elizabethan Literature. 5 hours.

Prerequisite: Two of ENG 231G, 232G, 233G or any two courses that satisfy the Arts and Sciences literature requirement of the core curriculum.

Poetry and prose of the earlier English Renaissance, such as works by More, Sidney, and Spenser, and Shakespeare's sonnets.

432G. Shakespeare: Part I. 5 hours.

Prerequisite: Two of ENG 231G, 232G, 233G or any two courses that satisfy the Arts and Sciences literature requirement of the core curriculum.

The early plays.

433G. Shakespeare: Part II. 5 hours.

Prerequisite: Two of ENG 231G, 232G, 233G or any two courses that satisfy the Arts and Sciences literature requirement of the core curriculum.

The later plays.

434T. Renaissance Drama. 5 hours.

Prerequisite: Two of ENG 231G, 232G, 233G or any two courses that satisfy the Arts and Sciences literature requirement of the core curriculum.

English drama from 1576 to 1642 exclusive of Shakespeare, emphasizing dramatists such as Marlowe, Jonson, Webster, and Middleton.

435T. 17th-Century Poetry. 5 hours.

Prerequisite: Two of ENG 231G, 232G, 233G or any two courses that satisfy the Arts and Sciences literature requirement of the core curriculum.

Major English poets of the period, such as Donne, Jonson, Herbert, and Marvell.

436T. 17th-Century Prose. 5 hours.

Prerequisite: Two of ENG 231G, 232G, 233G or any two courses that satisfy the Arts and Sciences literature requirement of the core curriculum.

Works of fiction and non-fiction by major writers of the later English Renaissance, such as Donne, Bacon, Hobbes, Browne, Milton, and Bunyan.

437T. Milton. 5 hours.

Prerequisite: Two of ENG 231G, 232G, 233G or any two courses that satisfy the Arts and Sciences literature requirement of the core curriculum.

The works and times of John Milton.

440T. Restoration and 18th-Century English Drama. 5 hours.

Prerequisite: Two of ENG 231G, 232G, 233G or any two courses that satisfy the Arts and Sciences literature requirement of the core curriculum.

Outstanding dramatists of the period: Dryden, Wycherly, Addison, Goldsmith, Sheridan, and others.

442T. Early 18th-Century Prose and Poetry. 5 hours.

Prerequisite: Two of ENG 231G, 232G, 233G or any two courses that satisfy the Arts and Sciences literature requirement of the core curriculum.

Poetry and prose of the earlier 18th century, emphasizing Addison, Steele, Defoe, Swift, and Pope.

443T. The 18th-Century English Novel. 5 hours.

Prerequisite: Two of ENG 231G, 232G, 233G or any two courses that satisfy the Arts and Sciences literature requirement of the core curriculum.

The English novel from Defoe to 1800, including novels by Richardson, Fielding, Smollett, and Sterne, the Gothic novel, and the novel of purpose.

444T. The Age of Johnson. 5 hours.

Prerequisite: Two of ENG 231G, 232G, 233G or any two courses that satisfy the Arts and Sciences literature requirement of the core curriculum.

English literature of the late 18th century, emphasizing Johnson, Boswell, and their group.

450T. Early Romantic Literature. 5 hours.

Prerequisite: Two of ENG 231G, 232G, 233G or any two courses that satisfy the Arts and Sciences literature requirement of the core curriculum.

Wordsworth, Coleridge, and other writers.

451T. Later Romantic Literature. 5 hours.

Prerequisite: Two of ENG 231G, 232G, 233G or any two courses that satisfy the Arts and Sciences literature requirement of the core curriculum.

Byron, Shelley, Keats, and other writers.

452T. The 19th-Century British Novel. 5 hours.

Prerequisite: Two of ENG 231G, 232G, 233G or any two courses that satisfy the Arts and Sciences literature requirement of the core curriculum.

The development of the British novel in the 19th century.

453T. Victorian Poetry. 5 hours.

Prerequisite: Two of ENG 231G, 232G, 233G or any two courses that satisfy the Arts and Sciences literature requirement of the core curriculum.

Tennyson, Browning, and Arnold.

454T. Victorian Prose. 5 hours.

Prerequisite: Two of ENG 231G, 232G, 233G or any two courses that satisfy the Arts and Sciences literature requirement of the core curriculum.

A study of the major Victorian prose writers, chiefly Carlyle, Newman, Mill, Ruskin, and Arnold.

462. (AAM) African American Poetry. 5 hours.

Prerequisite: Any two courses that satisfy the Arts and Sciences literature requirement of the core curriculum.

African American poetry from the colonial period to the present, including slave and folk songs of the mid-19th century, the Harlem Renaissance of the 1920's, and contemporary poetry. Emphasis on such figures as Langston Hughes, Margaret Walker, Gwendolyn Brooks, Sonia Sanchez, Amiri Baraka, and others.

463. (AAM) African American Fiction. 5 hours.

Prerequisite: Any two courses that satisfy the Arts and Sciences literature requirement of the core curriculum.

Important African American stories and novels from the 19th and 20th centuries, including works by such authors as Frances Harper, Jean Toomer, Ralph Ellison, James Baldwin, Alice Walker, and Toni Morrison.

464T. Film as Literature. 5 hours.

Prerequisite: Two of ENG 231G, 232G, 233G or any two courses that satisfy the Arts and Sciences literature requirement of the core curriculum.

The interpretation of films, with emphasis on the relationships between motion pictures and British and American literature.

465T. Modern Drama. 5 hours.

Prerequisite: Two of ENG 231G, 232G, 233G or any two courses that satisfy the Arts and Sciences literature requirement of the core curriculum.

The drama of Europe and America from the realism of Ibsen and Strindberg to the present.

466T. 20th-Century British Poetry. 5 hours.

Prerequisite: Two of ENG 231G, 232G, 233G or any two courses that satisfy the Arts and Sciences literature requirement of the core curriculum.

British poetry since the 1890's.

467T. The 20th-Century British Novel. 5 hours.

Prerequisite: Two of ENG 231G, 232G, 233G or any two courses that satisfy the Arts and Sciences literature requirement of the core curriculum.

Fiction of such representative British novelists of the 20th century as Bowen, Conrad, Forster, Joyce, Lawrence, Waugh, Woolf, and Greene.

468T. Modern Irish Literature. 5 hours.

Prerequisite: Two of ENG 231G, 232G, 233G or any two courses that satisfy the Arts and Sciences literature requirement of the core curriculum.

Fiction, poetry, and drama of the Irish Renaissance and after.

470T. Early American Literature. 5 hours.

Prerequisite: Two of ENG 231G, 232G, 233G or any two courses that satisfy the Arts and Sciences literature requirement of the core curriculum. American literature from the beginning through Irving.

471T. American Romanticism. 5 hours.

Prerequisite: Two of ENG 231G, 232G, 233G or any two courses that satisfy the Arts and Sciences literature requirement of the core curriculum. Representative works of the Romantics and Transcendentalists, with emphasis on Poe, Emerson, Thoreau, Hawthorne, Melville, Whitman, and Dickinson.

472T. American Realism and Naturalism. 5 hours.

Prerequisite: Two of ENG 231G, 232G, 233G or any two courses that satisfy the Arts and Sciences literature requirement of the core curriculum. Representative work of the realists and naturalists, with emphasis on James, Clemens, Crane, Norris, and Dreiser.

473T. American Poetry to 1900. 5 hours.

Prerequisite: Two of ENG 231G, 232G, 233G or any two courses that satisfy the Arts and Sciences literature requirement of the core curriculum. A study of representative poets from Edward Taylor through Stephen Crane.

474T. The American Novel to 1900. 5 hours.

Prerequisite: Two of ENG 231G, 232G, 233G or any two courses that satisfy the Arts and Sciences literature requirement of the core curriculum. The works of major novelists from Cooper through Norris.

475T. Southern Literature. 5 hours.

Prerequisite: Two of ENG 231G, 232G, 233G or any two courses that satisfy the Arts and Sciences literature requirement of the core curriculum. Literary achievement in the South from 1610 to the present, with emphasis upon Poe, Clemens, and Faulkner.

476T. 20th-Century American Poetry. 5 hours.

Prerequisite: Two of ENG 231G, 232G, 233G or any two courses that satisfy the Arts and Sciences literature requirement of the core curriculum. American poetry from the Imagist Movement to the present.

477T. The 20th-Century American Novel. 5 hours.

Prerequisite: Two of ENG 231G, 232G, 233G or any two courses that satisfy the Arts and Sciences literature requirement of the core curriculum. The American novel since World War I.

478T. American Poetry Since World War II. 5 hours.

Prerequisite: Two of ENG 231G, 232G, 233G or any two courses that satisfy the Arts and Sciences literature requirement of the core curriculum. American poetry since World War II.

479T. The American Novel Since World War II. 5 hours.

Prerequisite: Two of ENG 231G, 232G, 233G or any two courses that satisfy the Arts and Sciences literature requirement of the core curriculum. American novels since World War II.

480T. Advanced Creative Writing. 5 hours.

Prerequisite: Two courses in English numbered 400 or above, at least 5 hours of ENG 380T, and permission of department, based upon student's work submitted in advance.

Advanced instruction in the craftsmanship of poetry and fiction writing. No more than 10 credits total in ENG 380T and ENG 480T may be counted toward the English major.

481T. History of Literary Criticism. 5 hours.

Prerequisite: Two of ENG 231G, 232G, 233G or any two courses that satisfy the Arts and Sciences literature requirement of the core curriculum. A survey of literary theory from Plato to the early modern period, examining changing concepts of genre, style, and the social function of literature.

487T. Folklore Studies. 5 hours. Repeatable for maximum credit of 10 hours.

Prerequisite: Two of ENG 231G, 232G, 233G or any two courses that satisfy the Arts and Sciences literature requirement of the core curriculum. One or more folk groups, folklore genres, or topics concerning folklore.

488.(AAM) Topics in African American Literature. 5 hours. Repeatable for maximum 10 hours credit.

Prerequisite: Any two courses that satisfy the Arts and Sciences literature requirement of the core curriculum.

Selected topics in African American literature such as African American autobiography, Harlem Renaissance, Gwendolyn Brooks and Richard Wright, and Black American literature and aesthetics.

489T. Topics in English. 5 hours. Repeatable for maximum credit of 10 hours.

Prerequisite: Two of ENG 231G, 232G, 233G or any two courses that satisfy the Arts and Sciences literature requirement of the core curriculum. Study of a special topic not otherwise offered in the English curriculum. Topics and instructors vary from quarter to quarter. Normally, only one such course may be counted toward the major in English.

496H, 497H, 498H. Directed Reading and/or Projects (Honors). 5 hours each.

Prerequisite: Two of ENG 231G, 232G, 233G or any two courses that satisfy the Arts and Sciences literature requirement of the core curriculum.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading, or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

590P. English Literature for Advanced Placement Teachers. 3 hours.

A detailed introduction to the college-level study of English literature, designed to prepare in-service secondary school teachers for effective instruction of Advanced Placement students. Emphasizes interpretive strategies for approaching and writing about key texts of English literature.

Entomology (ENT)

Contact Person: Dr. John N. All, 542-7589

201. Insects and Our Society. 5 hours.

Designed to acquaint the non-biology major with our dependence on and interaction with insects in today's world.

250-250L. The Hive and the Honey Bee. 5 hours.

Three lectures and one 3-hour lab period.

Prerequisite: BIO 104-104L or 108-108L recommended.

A study of the behavior, life history and seasonal activities of honey bees. The relation of honey bees as the major pollinator of economically important plants will be discussed. Special attention will be given to theory and practice of apiary management.

314-314L. Insect Natural History. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: BIO 104-104L or 108-108L.

An introduction to insect biology with emphasis on factors which have made insects the most abundant, and one of the most successful animal groups. Topics include ecological and life-style diversity, communication and social organization, and costs and benefits. Most lab periods will be spent in the field. Not open to entomology majors.

327.(AGY) Weed and Insect Control in Turf. 2 hours.

See AGY 327.

365-365L. Medical Entomology. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: BIO 104-104L or 108-108L.

Introduction to medical entomology. Emphasizes identification, biology, disease importance, and control of arthropods having public health importance.

374-374L. Agricultural Entomology. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: BIO 104-104L or 108-108L.

A brief introduction to entomology followed by a study of the recognition and control of insect pests of crops and animals. An introductory course designed for non-entomology majors.

382-382L. Forest Entomology. 3 hours. Two lectures and one 2-hour lab period.

An introduction to insects of forest trees: identification, biology and management.

390. Special Problems in Entomology. 1-5 hours. Repeatable for maximum 10 hours credit.

Prerequisite: Permission of department.

A course designed to permit interested and well-prepared undergraduate students to pursue an entomology problem approved by the staff member under whom the work will be done.

393. Entomology Undergraduate Seminar. 1 hour; may be repeated once.

Prerequisite: ENT 400-400L.

Selected entomological topics of current and special interest by invited speakers and student presentations. Required for the entomology major but open to students in related fields.

400-400L. Advanced General Entomology. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: BIO 107-107L and 108-108L.

An overview of the science of entomology which includes the following areas: functional anatomy and physiology, behavior, ecology, insects as vectors of pathogens, chemical and biological control of pests. Laboratory sessions are devoted primarily to collecting and the identification of major families of insects.

401-401L. Insect Taxonomy. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: ENT 400-400L.

The principles of taxonomy with practice in the classification of all orders of insects.

425-425L. (CSS/ET) Pesticide Management and Utilization. 5 hours. Four lectures and one 3-hour lab period.

Prerequisite: CHM 121, 121L and 122, 122L and 240, 240L or 261, 261L or permission of department.

426-426L. (ECL/BOT) Biological Collections Management. 5 hours.

See ECL 426-426L.

440-440L. Insect Behavior. 5 hours. Two double lectures and one 3-hour lab period.
Prerequisite: ENT 400-400L.

An evolutionary approach to the principles of behavior; coverage includes communication, sexual behavior, anti-predator behavior, insect-plant interactions and the development of sociality.

460-460L. Insect Morphology. 5 hours. Two lectures and three 2-hour lab periods.
Prerequisite: ENT 400-400L.

An introduction to insect structure, function and phylogeny.

482-482L. Entomology in Natural Resources Management. 5 hours. Three lectures and two 2-hour lab periods.

A study of arthropods which are important in forest resources management, including timber, wild-life, and recreation.

496H, 497H, 498H. Directed Reading and/or Projects. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading, or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

573. Entomology for Teachers. 5 hours. Five lectures with demonstrations.

Prerequisite: Two elementary courses in biological sciences and two courses numbered 300 or above in biological science or education.

Insects and related forms, their identification and life habits with emphasis on the use of these forms in teaching.

Genetics (GN)

Contact Person: Dr. Michael Arnold,
542-1407

320. (BIO) Genetics. 5 hours.
See BIO 320.

321. (BIO) Experimental Genetics. 5 hours.
See BIO 321.

420. Advanced Genetics. 5 hours.
Prerequisite: BIO(GN) 320.

This course will discuss a limited number of procaryotic, fungal, and mammalian genetic systems which form the basis of our understanding of molecular genetics. Techniques used in the analysis of the structure and function of viral and eucaryotic genomes will be emphasized. (Fall quarter.)

421.(BIO) Molecular Genetics Laboratory. 5 hours. Three 3-hour lab periods.
Prerequisite: BIO(GN) 320 and 321 or BIO(CB) 331 or MIB 350-350L and GN 420.

Laboratory techniques in molecular genetics for advanced undergraduate students. Basic genetic and recombinant DNA approaches in contemporary molecular biology; use of computers for database searches, DNA sequence analysis, and molecular modeling.

460. (BIO) Evolutionary Biology. 5 hours.
See BIO 460.

495. Senior Seminar in Genetics. 1 hour per quarter; maximum of 3 hours.
Prerequisite: BIO(GN) 320, senior standing, permission of department.

Discussion and critical appraisal of reports of original research and/or surveys of the technical literature in genetics. Students will be responsible for oral presentations on current topics. (Fall, Winter, and Spring quarters.)

496. Directed Reading and/or Projects. 1-5 hours per quarter; maximum of 10 hours.
Prerequisite: BIO(GN) 320, junior or senior standing.

This course affords students of upper division standing the opportunity to engage in individual study, reading, or projects under the direction of a faculty member.

496H, 497H, 498H. Directed Readings and/or Projects. 5 hours.

Prerequisite for 496H: BIO(GN) 320.

Prerequisite for 497H: GN 496H.

Prerequisite for 498H: GN 497H.

These courses afford Honors students of upper division standing the opportunity to engage in individual study, reading, or research projects under the direction of a faculty member.

499H. Honors Thesis. 5 hours.

Prerequisite: GN 496H, senior standing, permission of department.

This course provides the opportunity for an Honors student to write an Honors thesis under the guidance of a faculty member.

Geography (GGY)

Contact Person: Dr. Kavita Pandit, 542-1058

Human and Regional Geography

101. Introduction to Human Geography. 5 hours.
A survey of global patterns of resources, population, culture, and economic systems. Emphasis is placed upon the factors contributing to these patterns and the distinctions between the techno-

Geography

logically advanced and less advanced regions of the world.

200-200L. Resources, Society, and the Environment. 5 hours. Four lectures and one 2-hour lab period.

Interactions between physical systems and human activities, and their effects on environmental quality and sustainability are emphasized. Topics include: geography of population and resource consumption, food production, water and air quality, energy policy, land/biotic resource management. Contrasting social, ethical, and technological perspectives on environmental concerns are explored.

210. (ANT/CML/HIS/SOC) Introduction to Africa. 5 hours.

A general survey of Africa. There are three foci: history of the region; the physical environment (including landforms, vegetation, and climate); and, the sociocultural environment (including artistic, political, and social development).

215H. World Cultural Geography (Honors). 5 hours.

Not open to students with credit in GGY 101. Identification and use of basic geographic concepts in analysis of social, economic, and political problems at local, regional, and worldwide scales. Field observations provided in field trips.

320. United States and Canada. 5 hours.

Prerequisite: Sophomore standing. A topical and regional analysis of the U.S. and Canada, designed to bring students to a fuller understanding of their environs. Physical environment, population, culture, economy and government are considered in their regional contexts. Adjustment strategies in a time of rapid change are explored.

358. Economic Geography. 5 hours.

Prerequisite: GGY 101 or ECN 107 or 117H. Location factors and principles, utilizing theoretical and empirical studies. Focus upon the spatial organization of economic production, consumption, and exchange systems.

399. Internship in Geography. 5-15 hours.

Prerequisite: Completion of at least 30 hours of courses in 300 series, GGY 350-350L and 358. Students will be placed in an outside private or governmental agency where they will utilize geographic techniques in approaching practical problems relevant to the agency's mission. An initial orientation and a postinternship evaluation with the internship committee is required. The latter will include both a written and oral presentation of the intern's activities.

412. Geography of Development. 5 hours.

Prerequisite: 10 hours in geography or an equivalent background in related disciplines. Geographical aspects of Third World development, including topics such as population growth, migration, industrialization, trade, and foreign aid. The spatial characteristics of economic development are viewed at the conceptual level and implications for policy discussed.

429. Special Problems in Area Analysis. 1-5 hours. Repeatable for maximum 15 hours credit. Prerequisite: 15 hours in courses numbered above 300 in geography. Permission of department must be obtained for admission to this course prior to registration.

434. Geography of Sub-Saharan Africa. 5 hours. Prerequisite: 10 hours in geography or permission of department.

Geographic and socio-economic issues that face sub-Saharan economies as they enter the twenty-first century. Emphasis will be placed on the physical landscape, environmental conditions, social and cultural distributions, and on strategies and theories of economic development.

442. South America. 5 hours.

Prerequisite: 10 hours in geography or an equivalent background in either Spanish or history. A regional analysis of the geography of equatorial and southern South America including physical, cultural, and economic characteristics of the several regions. Stress upon prospects for expansion of settlement, development of resources, and growth of industries.

444. Europe and the Mediterranean. 5 hours.

Prerequisite: 10 hours in geography, or in history, political science, or modern languages. A regional analysis of Europe, exclusive of the Soviet Union, designed to reveal the unique cultural, physical, and economic character and problems of the several European nations.

447. Geography of China. 5 hours.

Prerequisite: 10 hours of geography or related social sciences or area studies. A systematic and regional analysis of the physical and human geography of contemporary China. Emphasis is on modernization and development of agriculture, industry, and transportation within the context of China's resource base and large population.

448. Geography of East and Southeast Asia. 5 hours.

Prerequisite: 10 hours of geography or 10 hours in the culture or language of the region. A systematic and regional analysis of the physical and human geography of East and Southeast Asia (excluding China, see GGY 447). Major focus on resources, land utilization, population

characteristics and distributions as they relate to economic and political problems. Emphasis is on Japan, Korea, Indonesia, Philippines, and Indo-China.

453. Urbanization in Developing Countries. 5 hours.

Prerequisite: ANT 400 or POL 431 or GGY 358 or permission of department.

This course offers a detailed understanding of the processes of urbanization and development in the areas of the world undergoing modernization and cultural change. The city and its role are traced from pre-industrial manifestations to the modern urban centers of the eastern and western worlds.

459. Urban Geography. 5 hours.

Prerequisite: Two courses from GGY 350-350L, 358, or ECN 233.

Analysis of urban land occupation and its morphological-functional aspects. Introductory location theory in urban areas. Procedures in geographical analysis of agglomerated settlements.

460. Industrial Geography. 5 hours.

Theories in industrial location. Detailed locational analysis of selected manufacturing industries. Regional treatment of the spatial structure of North American manufacturing.

462. Location Decision-Making for Retail and Service Firms. 5 hours.

Prerequisite: GGY 358 or MKT 360 or 10 hours of economics or permission of department.

Principles and theories of the location of retail and service firms. Analysis of locational decision-making and practical approaches to developing location strategies for retailing and public services. Analysis of urban retailing systems.

463. Geography of Transportation. 5 hours.

Prerequisite: GGY 358 or MKT 559.

Survey of historical, engineering and economic aspects of North American transport. Influence of modal characteristics on economic phenomena. Survey of regional commodity movements at various scales. Principles and theories explaining role of transportation in regional planning, and in location of economic and political phenomena.

468. Urban Transportation and Land Use. 5 hours.

Prerequisite: GGY 459 or MKT 559.

Reciprocal relations between urban transportation, both freight and passenger, and urban land use organization in terms of site requirements, traffic generation characteristics and circulation problems.

472. Population Geography. 5 hours.

Prerequisite: GGY 101 and any five hours of geography, or permission of department.

Processes associated with the distribution of world population and an introduction to population data and to basic demographic techniques. Topics include theories of population change, fertility, mortality, migration, population policy, and population-environment relationships, with a focus on regional variations.

496H, 497H, 498H. Directed Reading and/or Projects. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

Physical Geography

104. Earth Science Survey. 5 hours.

Not open to students with credit in either GGY 120-120L, 121-121L or 122-122L.

An introduction to physical geography, surveying climate, vegetation, soils, landforms, and water resources in their areal interrelations and distributions.

120-120L. Introductory Weather and Climate. 5 hours. Three lectures and two lab periods.

Components of weather, weather processes, and their measurement. Climatic elements and their control factors. Geographic classification of climatic and vegetative types on the earth's surface.

121-121L. Introduction to Landforms. 5 hours. Three lectures and two lab periods.

Introductory analysis and classification of major types of land surfaces, stressing geographic characteristics. Study and interpretation of relationships between landforms and other phenomena through maps, air photos, and field observations. World coverage with stress on North America.

122-122L. Introduction to Bio and Soil Geography. 5 hours. Three lectures and two lab periods.

Analysis of world variation and distribution of vegetation and soils and the special climates associated with these distributions. Also studied are the distributions of some related animal populations. Field trips provide first-hand information.

200-200L. Resources, Society, and the Environment. 5 hours.

(See description in Human and Regional Geography.)

214H. World Physical Geography (Honors). 5 hours.

Not open to students with credit in GGY 120-120L, 121-121L, or 122-122L or 104.

Geography

Study of processes of weather, climate and landforms; analysis of relationships among climate, landforms, vegetation, soils and water; assessment of broad patterns of these phenomena on the earth. Field observation provided in field trips.

399. Internship in Geography. 5-15 hours.
(See description in Human and Regional Geography.)

400. Advanced Geomorphology. 5 hours.
Prerequisite: GGY 121-121L or GLY 125-125L, or permission of department.

Weathering and hydrological processes that create inselberg, karst, periglacial, and arid landforms on Earth. Relationships to significant climate/environmental changes that occurred during the Quaternary, Aeolian, fluvial and periglacial landforms on Mars. Course includes a field trip to a karst area.

406. Regional Synoptic Meteorology. 5 hours.
Prerequisite: GGY 120-120L or permission of department.

Investigation of the dynamics and general circulation of the atmosphere including analyses of surface-upper atmosphere links. Tropospheric waves, vorticity influences, jet streams, cyclogenesis, tropical depressions, hurricanes. Implications for long-range forecasting; geographic expressions of mean tropospheric wave patterns. As a synthesis, examination of regional climatic patterns and anomalies throughout the world. Term project required.

407. Fluvial Geomorphology. 5 hours.
Prerequisite: GGY 121-121L or GLY 125-125L or permission of department.

Landforming effects of surface-water movement with emphasis on surface-water hydrology, streamflow mechanics, floods, sediment transport and storage, and landform evolution. Field trips included.

408. Global Environmental Change During the Quaternary. 5 hours.

Prerequisite: GGY 121-121L or GLY 125-125L and GGY 400 or equivalent, or permission of department.

The geomorphic, isotopic and palynological evidence of Quaternary paleoclimates is examined and chronology problems discussed. The effects of past climatic changes upon present landscapes are evaluated. Attention is given to short-term fluctuations in temperature and precipitation that have occurred in historic times and to possible explanations for climatic change.

409. Bioclimatology. 5 hours.
Prerequisite: GGY 120-120L or 122-122L or permission of department.

In this course the interaction of climate with organisms, communities and ecosystems is discussed

and then demonstrated in the field. The mechanisms of heat flow, radiation exchanges and water vapor flux; environmental variables in time and space are investigated, as well as the basic statistics needed to deal with climatic data. Case studies are examined which demonstrate climate's specific role in the functioning of ecosystems. Attention is directed to the use of bioclimatic methods to improve environmental impact assessment.

410. Conservation Ecology and Resource Management. 5 hours.

Prerequisite: GGY 120-120L and ECL(BIO) 350 or GGY 122-122L or permission of department. Ecological and economic analysis of human use of global and regional resources, emphasizing ecological requirements, sustainable use, and holistic decision-making. Particular topics include ecosystem dynamics, functional biodiversity landscape management, socioeconomic traps, global change, and ecological restoration. Term project required.

413. (BOT) Plant Ecology and Biogeography. 5 hours.

Prerequisite: [(GGY 120-120L or 122-122L) and BIO 104-104L] or equivalent.

Patterns of plant distribution in the contemporary landscape are stressed, including treatment of species ranges, historical and environmental factors influencing the geography of plant assemblages, and soil-plant interactions. Consideration of disturbance, succession, and human influence on vegetation promotes awareness of landscape dynamics. Field trip and term paper required.

417. Animal Geography. 5 hours.
Not open to students with credit in ECL(BIO) 350. Prerequisite: (GGY 120-120L or 122-122L) and (BIO 104-104L or equivalent).

Factors affecting animal distributions at scales from organisms to biomes. Influence of ecological factors on animal distribution, historical biogeography, animal assemblages of the earth's biomes, and human influences on animal populations.

425. Field Methods in Physical Geography. 5 hours.

Prerequisite: 15 hours in geography including GGY 350-350L or equivalent.

Methods in measurement, observation, recording and synthesis of field data in physical geography. Students conduct field research and present oral and written reports (with maps) of findings.

429. Special Problems in Area Analysis. 1-5 hours.

(See description in Human and Regional Geography.)

476. (BOT) Plant Geography. 5 hours.
See BOT 476.

496H, 497H, 498H. Directed Reading and/or Projects. 5 hours each.
(See description in Human and Regional Geography.)

499H. Honors Thesis. 5 hours.
(See description in Human and Regional Geography.)

Geographic Techniques and Methods

305. Geographic Data Analysis. 5 hours. Four lectures and one 2-hour lab period.
Prerequisite: STA 200 or permission of department.

Review of methods and techniques required at various stages of geographic data analysis, including the collection, manipulation, description, presentation, analysis, and interpretation of data. Exercises using statistical and GIS software packages on microcomputers integrate data analysis with geographic information systems.

350-350L. Cartography and Graphics. 5 hours. Three lectures and two lab periods.

Introduction to methods of preparing maps, charts and diagrams. Cartographic theory and techniques; use of basic cartographic equipment; compilation of, symbolization on and design of drawings; methods of map reproduction.

399. Internship in Geography. 5-15 hours.
(See description in Human and Regional Geography.)

403. Introductory Spatial Analysis. 5 hours.
Prerequisite: GGY 350-350L and STA 200 or permission of department.

Introduction to techniques used to study the patterns of points, lines, areas, and surfaces depicted on maps. Use of parametric and nonparametric statistical techniques to describe and make inferences from information contained on maps.

416. Cartographic Design and Reproduction. 5 hours. Three lectures and two lab periods.
Prerequisite: GGY 350-350L or permission of department.

Principles of design, readings from the literature, map reproduction methods and their effects on design. Practice in the production of thematic maps from the collection of data to their final form; use of advanced instruments.

418-418L. Introduction to Geographic Information Systems. 5 hours.

Prerequisite: Junior standing with four or more courses in one or any combination of the following subject areas: geography, anthropology, ecol-

ogy, geology, agriculture, environmental design, forestry, or permission of department.

Principles and applications of Geographic Information Systems (GIS). Examines the nature and accuracy of spatially referenced data, as well as methods of data capture, storage, retrieval, visualization, modeling, and output using one or more GIS software packages.

419. Computer-Assisted Cartography and Graphics. 5 hours.

Prerequisite: GGY 350-350L.

Introduction to the theory and application of computer technology in the preparation of thematic maps and other graphics. Emphasis is placed on the creation, analysis, and display of statistical surfaces. Students experiment with existing computer mapping programs and develop their own cartographic software in certain instances.

420-420L. The Use and Interpretation of Aerial Photographs. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: Four or more quarters of geography, geology, environmental design, forestry, agriculture, or permission of department.

Principles and techniques of extracting descriptive and metric information of the environment from aerial photographs acquired in analog and digital forms. Applications emphasize planimetric mapping and interpretation of physical and cultural landscapes. Students are required to complete a term project making use of the techniques.

422. Advanced Photogrammetry. 5 hours. Lecture and laboratories arranged as required.

Prerequisite: GGY 420-420L.

Theories of analytical and digital (soft copy) photogrammetry as applied to topographic mapping. Topics include refinement of photographic measurements, coordinate transformations, stereoscopic parallax, collinearity equations, aerial triangulation, orthophotography, and digital image correlation.

423. Remote Sensing of Environment. 5 hours.
Prerequisite: PCS 128-128L, GGY 420-420L, or permission of department.

A consideration of the principles of remote sensing with emphasis on aerospace applications in the natural sciences. A review of fundamental properties of the electromagnetic spectrum followed by studies of remote sensing devices such as multispectral cameras, thermal infrared line scanners, and television and radar imaging systems. The course is oriented toward the particular interest of participating students.

424-424L. Geographic Analysis and Geographic Information Systems. 5 hours.

Four lectures and one 2-hour lab period.

Geography • Geology

Prerequisite: GGY 418-418L and (GGY 305 or 403) and (CS 201-201L or equivalent).

Geographic analytical methods and implementation. Theory and concepts of spatial analysis. Description, reduction, and comparison of point, line, area, and volumetric geographic data sets are examined. Implementation and limitation of geographic information systems.

429. Special Problems in Area Analysis. 1-5 hours.

(See description in Human and Regional Geography.)

496H, 497H, 498H. Directed Reading and/or Projects. 5 hours each.

(See description in Human and Regional Geography.)

499H. Honors Thesis. 5 hours.

(See description in Human and Regional Geography.)

Geology (GLY)

Contact Person: Dr. Raymond Freeman-Lynde, 542-2391

115-115L. Earth Processes and Environments. 5 hours. Four lectures and one lab period.

Earth processes and utilization of geological materials (plate tectonics, earthquakes, volcanism, hydrology, and erosion). Earth hazards, pollution, and energy resources in the context of environmental geology. Will not satisfy the science-sequence requirements of the B.S. in Arts and Sciences.

116-116L. The Earth Through Time. 5 hours. Four lectures and one lab period.

Prerequisite: GLY 115-115L.

Origin and evolution of Earth, its atmosphere, oceans, and life. The changing Earth: a record of continental drift, mountain building, volcanism, erosion, and sedimentation. Fossils, ancient environments, and evolution of life. Prehistoric man. May not be used to fulfill the science-sequence requirement of the B.S. degree in Arts and Sciences.

125-125L. Physical Geology. 5 hours. Three lectures and two lab periods.

Not open to students with credit in GLY 115-115L. Fundamentals of physical geology: characteristics and origins of rocks and minerals; mechanisms and processes of volcanism, plutonism, metamorphism, weathering, erosion, sedimentation, and lithification; evolution of landforms. Tectonic processes of continental drift, sea-floor spreading, and plate tectonics. Emphasis on scientific methods.

126-126L. Historical Geology. 5 hours. Three lectures and two lab periods.

Prerequisite: GLY 115-115L or 125-125L.

Methods and concepts by which Earth history is interpreted. The geologic time scale; interactions of physical, chemical, and biological processes through time. Origin of life; evolution and distribution of plants and animals; the geologic time scale. Geologic history of North America. Emphasis on interpretation of the rock record.

212-212L. Introduction to Environmental Geology. 5 hours. Three lectures and two lab periods.

Prerequisite: GLY 115-115L or equivalent.

A course on environmental geology focusing on understanding global and current environmental problems and their relationship with geological processes. Topics include geologic hazards, environmental impact of resource extraction and use, surface and groundwater pollution, fossil fuels, alternative energy sources, waste disposal and land management.

235H. Physical Geology (Honors). 5 hours. Three lectures and two lab periods.

Not open to students with credit in GLY 125-125L. Characteristics and origins of minerals and rocks. Structure of the Earth's interior. Geologic processes that affect the Earth's surface. Volcanism, earthquakes, and other geologic hazards. Plate tectonics and mountain building. Earth resources.

236H. Historical Geology (Honors). 5 hours. Three lectures and two lab periods.

Not open to students with credit in GLY 126-126L. Prerequisite: GLY 125-125L or 235H.

Measurement of geologic time. Physical and biological history of Earth as recorded in rocks and fossils. Development of the major features of Earth, with particular emphasis on North America.

301. Gems and Gem Materials. 5 hours.

Gem materials; historical, cultural, mineralogical, technological, and scientific aspects. The identification and evaluation of gems.

303. Elementary Oceanography. 5 hours.

Introduction to oceanography, especially its geologic and biologic aspects. Origin, development and major physiochemical properties of marine waters, basins, sediments, and mineral resources. Classification of marine environments. Overview of interdisciplinary relationships. This course may not be used in sequence to satisfy the physical science requirement for the A.B. degree.

312-312L. Geologic Hazards. 5 hours. Three lectures and two lab periods.

Consequences of hazardous geologic processes, including volcanic activity, earthquakes, landslides, flooding, shoreline erosion, and ground failure. Emphasis on developing an understanding of the

geologic processes that result in hazards and delineating risk potential. Evaluation of methods of prediction and control through laboratory analysis of case studies.

313. Geology of the National Parks. 5 hours. Three lectures and two 1-hour lab periods.

Prerequisite: GLY 115-115L and 116-116L or 125-125L and 126-126L or permission of department.

Geological features of selected national parks used as type examples for understanding rock-forming processes (igneous, sedimentary, and metamorphic) and orogenic processes. Exploitation of mineral resources in and around national parks and conflicts that ensue.

320. Rocks and Minerals. 5 hours. Three lectures and two lab periods.

Prerequisite: GLY 125-125L or equivalent and CHM 121.

Basic properties, origins, and methods for describing and classifying the common minerals and rocks. Emphasis on identifying and describing samples on the hand specimen and outcrop scale. Field trips required.

321. Introduction to Mineralogy and Crystallography. 5 hours. Three lectures and two lab periods.

Prerequisite: CHM 121.

Physical and chemical properties, identification, and modes of occurrence of minerals. Mineral crystallography. Introduction to optical properties of minerals.

322. Optical Mineralogy and Petrology I. 5 hours. Three lectures and two lab periods.

Not open to students with credit in GLY 408.

Prerequisite: GLY 321 or equivalent.

Determination of the optical properties of minerals with the petrographic microscope. Identification of the common rock-forming minerals using thin-section techniques. Introduction to the petrographic description of rocks. Characteristics, identification, and origins of igneous rocks.

323. Petrology II. 5 hours. Three lectures and two lab periods.

Prerequisite: GLY 322.

Characteristics, classification, identification, and origins of the common sedimentary and metamorphic rocks. Continuation of GLY 322.

332. Structural Geology. 5 hours. Four lectures and one lab period.

Prerequisite: GLY 115-115L or 125-125L; 323 recommended.

Geologic structures and their recognition in the field. Framework of the earth's crust; origin of mountains, continents, oceans. Physical properties and behavior of rocks; solution of structural problems.

402. Geohydrology Seminar. 1 hour. Repeatable for maximum 6 hours credit.

Prerequisite: GLY 422 or equivalent.

Current and classical studies in geohydrology.

403. Invertebrate Paleontology. 5 hours. Three lectures and two lab periods.

Prerequisite: GLY 126-126L or BIO 104-104L or 108-108L.

Principles of invertebrate paleontology. Study of fossil specimens, emphasizing relationships between living and extinct marine organisms. Classification and history of major invertebrate phyla.

404. Geology Seminar. 1-6 hours. Repeatable for maximum 6 hours credit.

Reviews and discussions of classical studies; lectures on current research, new developments in the field. Special lectures by visiting scientists.

405. Sedimentation and Stratigraphy. 5 hours. Three lectures and two lab periods.

Prerequisite: GLY 126-126L; 323 recommended.

The origin and distribution of sedimentary rocks. Environmental conditions involved in the transportation and deposition of sediments. Vertical sequences and lateral correlations in layered rocks. Typical stratigraphic associations.

409. Marine Geology. 5 hours.

Prerequisite: GLY 125-125L and 126-126L.

Study of the geologic aspects of ocean basins, including morphology, sedimentation processes, and mode of origin.

411. Principles of Geochemistry. 5 hours.

Prerequisite: CHM 122 and 122L and GLY 323.

Composition of the earth. Distribution of elements in minerals and rocks. Principles governing the migration and concentration of elements. Introduction to nuclear geology and geochemical prospecting.

414. X-Ray Crystallography. 5 hours. Three lectures and two lab periods.

Prerequisite: MAT 253.

Symmetry elements, crystal projections, point groups, space groups, crystal systems, crystal notation, optical goniometry. Determination of cell dimensions and space group; X-ray powder methods, single-crystal X-ray methods.

422. Hydrogeology. 5 hours.

Prerequisite: GLY 125-125L and 126-126L or equivalent.

The hydrologic cycle and review of the quantitative treatment of its elements. Quantitative methods for ground-water flow, open-channel flow, sediment transport, channel characteristics, and drainage networks. Introduction to water chemistry and quality. Water as a resource. (Surface hydrography is covered in detail in FRS 411.)

Geology

425. Field Methods in Geology. 1 hour.

Prerequisite: GLY 323.

Theory and practice of field measurement, large scale planimetric and topographic mapping, and grid surveying. Graphic presentation of field data.

427. Geology Field School. 12 hours. Five field weeks in June and early July.

Prerequisite: GLY 321, 323, 332; GLY 405 recommended.

Introduction to geologic mapping techniques: training in the use of aerial photographs, topographic maps, and stereographic projections; basic methods of description and measurement of stratigraphic sections. Regional geologic settings stressed through reports which accompany field maps.

428. Environmental Geology Field School. 6 hours.

Prerequisite: GLY 422.

Corequisite: GLY 427 (6 hours) or equivalent.

Field environmental geological problems with emphasis on hydrologic testing methods, aquifer characteristics of rock units, subsurface contamination and remediation, and mining methods and reclamation.

431. Metallic Ore Deposits. 5 hours. Five lectures plus field trips.

Prerequisite: GLY 321 and 332.

Classification and origin of metallic ore deposits; relationships between mineral deposits and host rocks; ore controls. Discussion of the major deposits of base metals, precious metals, and ferrous metals.

434. (ANT) Archaeometry. 5 hours. Four lectures and one lab period.

Prerequisite: GLY(ANT) 470 or permission of department.

Methods of archaeometric analysis including chronometric and instrumental techniques. Absolute age dating and characterization of archaeological materials by physico-chemical analysis.

437. Geostatistics. 5 hours. Four lectures and one lab period.

Prerequisite: STA 200 or 421.

Statistics applied to geology. Distributions, sampling, inference, analysis of variance distributions and transformations, geological sampling, variability in geological data.

441ABCDEFJK. Introduction to Research. 2-5 hours each. Repeatable for maximum 15 hours credit.

An introduction to the literature of geology, research procedures, and instrumental techniques.

A. Minerology

B. Geochemistry

C. Geophysics

D. Hydrogeology

E. Tectonics

F. Petrology

J. Sedimentation/Stratigraphy

K. Paleontology

451. Micropaleontology. 5 hours. Three lectures and two lab periods.

Prerequisite: GLY 126-126L or BIO 104-104L or 108-108L.

Morphology and systematics of principal groups of animal microfossils. Stratigraphic, paleoecologic, and phylogenetic relationships, with particular emphasis on Foraminifera.

452. Introduction to Paleocology. 5 hours. Four lectures and one lab period.

Prerequisite: GLY 403 or equivalent.

Study of factors governing the abundance and distribution of ancient organisms, with emphasis on marine invertebrates. Comparisons with ecology of extant organisms. Survey of ecologic principles, adaptations of organisms, and environmental parameters. Preservability and taphonomy of organisms. Paleocology as a tool in sedimentary geology.

460. Solid Earth Geophysics. 5 hours.

Prerequisite: GLY 323, 332, and PCS 128-128L.

The student will use the principles of geophysics in evaluating the dynamics and bulk properties of the earth. Topics will include earthquake seismology, geodesy, geomagnetism, the thermal history of the earth, earth resistivity methods, the composition and state of the earth's interior, and the new Global Tectonics hypothesis.

462. Exploration Geophysics. 5 hours. Three lectures and two lab periods.

Prerequisite: GLY 323, 332, and PCS 128-128L.

Geophysical techniques used to determine the presence and extent of deposits of minerals and the subsurface structure of a selected locality from field measurements.

466. Field School in Shallow Geophysics. 6 hours. Six lectures and 6 7-hour lab periods.

Prerequisite: GLY 115-115L or 125-125L or a course in archaeology.

Theory and use of techniques for the geophysical prospection of near surface geology, geohydrology and geomorphology. Techniques include: Electro-magnetic; radar; sonar; and magnetism.

467. Instrumental Analysis in the Geosciences. 3-5 hours.

Prerequisite: GLY 321 or equivalent.

Operating principles of commonly used instruments in the geosciences, with an emphasis on the practical operation and use of instruments for chemical analysis of rocks, minerals, and water samples.

469. Applied Environmental Geology. 5 hours. Three lectures plus field trips.

Prerequisite: [GLY 125-125L or equivalent] and [CHM 121 or PCS 127-127L].

Field-based studies on environmental geological problems including sanitary landfills, barrier island development, underground storage tank pollution and remediation, mine land pollution and reclamation, and wetland development. Field trip participation is required.

470. (ANT) Archaeological Geology. 5 hours. Prerequisite: GLY 115-115L or equivalent.

Archaeological Geology. Archaeological problems amenable to solution by geological methodology. Paleogeography and paleoenvironment of archaeological sites. Analytical studies of artifacts and remains.

475. Earth Sciences for Middle School. 5 hours.

Fundamentals of earth sciences for middle school teachers. Maps interpretation. Minerals and rocks. Principles of meteorology and oceanography. Processes at the surface and inside the earth. Emphasis on plate tectonics. Geologic time scale, evolution of life, and a study of fossils. Geology and resources of Georgia. Earth in space, generalities on astronomy.

496H, 497H, 498H. Directed Reading and/or Projects. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading, or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

Germanic and Slavic Languages

Contact Person: Dr. Ralf Nicolai, 542-3663

German (GER)

Any course numbered below 200 is considered elementary and will not count toward the minimum of 40 hours required to major in the language. GER 103 and higher numbered courses are conducted largely in German.

101, 102. Elementary German. 5 hours each.

Fundamentals of grammar, pronunciation, conversation, composition, reading, and translation. Additional language laboratory work required.

103. Intermediate German. 5 hours.

Prerequisite: GER 102 or two entrance units in German.

Grammar, reading and translation of intermediate texts, composition, and conversation. Additional language laboratory work required.

114H. Intermediate German (Honors). 5 hours. Not open to students with credit in GER 221.

A substitute for GER 103 and 221.

Grammatical construction will be discussed and reviewed. There will be intense classroom practice of conversational German, and the student will also be required to do extensive reading and translating of current German literature.

221. Intermediate German. 5 hours.

Not open to students with credit in GER 104.

Prerequisite: GER 103.

Readings in modern German prose, composition and conversation. Additional language laboratory work available.

222. Conversation and Composition. 5 hours.

Not open to students with credit in GER 210.

Prerequisite: GER 221 or equivalent.

A course offering three recitation periods and two double periods for oral practice per week.

306. Business German. 5 hours.

Not open to students with credit in GER 206.

Prerequisite: GER 221.

Introduces business students to the German language through an approach that emphasizes conversational skills and business terms. It attempts to acquaint students with the environment of Germany as it relates to business.

307. Advanced Business German. 5 hours.

Prerequisite: GER 306.

Advanced intercultural study of the language of business in contemporary united Germany, particularly with respect to European Community and German-American transactions; emphasizes advertising, trade, banking, postal and telecommunications systems, stock market, business strategies, energy and industry, import and export, computer programming, and business correspondence. Taught in German.

310. Literature and German Culture. 5 hours.

Prerequisite: GER 221 or permission of department.

The interrelationship between literature and culture in 19th- and 20th-century Germany. The course will consider the role of literature as a primary influence in the significant philosophical, political, and sociological trends of the time.

320. German Landeskunde. 5 hours.

Prerequisite: GER 222.

The Federal Republic of Germany since reunification, with emphasis on geography, political,

German

social, educational and cultural institutions, within the framework of recent change from homogeneous to multi-ethnic society.

320H. German Classical Literature (Honors). 5 hours.

Prerequisite: GER 221 or 114H or permission of Honors Program.

A study of representative works of German classical literature. The course will emphasize drama, poetry and critical writings of authors such as Goethe, Lessing, and Schiller. The culture and philosophy of the German classical period (1750-1815) will be dealt with in detail.

322. Intermediate Composition and Conversation. 5 hours.

Not open to students with credit in GER 315.

Prerequisite: GER 222 or permission of department.

A broad and deep coverage of syntax and vocabulary in both the spoken and written language. Course work will emphasize oral and written reports, original compositions, and selected readings concerning German culture and literature.

325. German Literature from the Beginnings to 1700. 5 hours.

Prerequisite: GER 322 or permission of department.

Intensive reading and analysis of representative German works from the Old High German and Middle High German periods, Humanism, the Reformation, the Renaissance and the Baroque. Taught in German.

326. German Literature from 1700 to 1900. 5 hours.

Prerequisite: GER 322 or permission of department.

Intensive reading and analysis of representative German works of the Enlightenment, Storm and Stress, Classicism, Romanticism, and Realism, drawing upon related historical conditions and intellectual movements. Taught in German.

327. German Literature of the Twentieth Century. 5 hours.

Not open to students with credit in GER 202.

Prerequisite: GER 322 or permission of department.

A study of the main literary movements and representative works of the 20th century in the original language.

338. (LIN) Contrastive Grammar: German/English. 5 hours.

Not open to students with credit in GER(LIN) 438.

Prerequisite: German 322 or permission of department.

Prepares future teachers of German to isolate and identify pedagogically important structural similarities and differences.

350. Techniques of Translation. 5 hours.

Review of grammar, idioms, and vocabulary; practice in translating moderately difficult technical and non-technical German texts into correct English.

360H. Early Heroic Literature (Honors). 5 hours.

The oldest northern European medieval literary movements studied as historical remnants from the Age of Migrations to the Viking Period, with influences from mythology and folklore.

399. Directed Study. 1-5 hours.

Prerequisite: GER 221.

Affords the advanced student opportunity to conduct independent study and research under the direction of individual staff members.

422. Advanced Grammar and Composition. 5 hours.

Not open to students with credit in GER 410.

Prerequisite: GER 322.

Vocabulary building and review of grammar. Emphasis on common errors of English speakers and on distinctions in meaning.

425. Survey of German Literature. 5 hours.

Prerequisite: GER 322 or permission of department.

German literature from the Old High German Period to the present. Texts from the older period will be read in New High German translation.

430. German Drama. 5 hours.

Prerequisite: GER 322 or permission of department.

Reading and interpretation of texts in their historical and literary-historical context.

431. German Drama II. 5 hours.

Prerequisite: GER 322 or permission of department.

Interpretation of dramas representative of the significant literary movements from Naturalism until today.

433. Age of Goethe (1805-1832). 5 hours.

Prerequisite: GER 322 or permission of department.

The older Goethe, from Schiller's death in 1805 to 1832. Emphasis on Goethe's mature works, *Wahlverwandtschaften*, *Westöstlicher Divan*, and *Wilhelm Meisters Wanderjahre*.

435. German Novelle of the 19th and 20th Centuries. 5 hours.

Prerequisite: GER 322 or permission of department.

Prescriptive and descriptive analyses of this German literary genre. Interpretation of short, lively, readable texts by representative authors.

437. Modern German Literature. 5 hours.

Prerequisite: GER 322 or permission of department.

Drama, poetry, and shorter prose of major German authors from early 20th century (Arthur Schnitzler) to the late postwar period (Peter Weiss).

439. German Poetry. 5 hours.

Prerequisite: GER 322 or permission of department.

German poetry from the Middle Ages to the present.

441. German Prose. 5 hours.

Prerequisite: GER 322 or permission of department.

Reading and interpretation of selected important novels and novelle.

446. (LIN) Linguistic Structure of German. 5 hours.

Prerequisite: Two years of college German or permission of department.

Structure of German with explanation of relevant linguistic terms. Emphasis on phonetics, phonology, and intonation.

448. German Realism and Naturalism. 5 hours.

Prerequisite: GER 322 or permission of department.

Representative works of the major realists and naturalists of the 19th century including authors such as Hebbel, Keller, Storm, Meyer, Fontane, and Hauptmann.

460. History of the German Language. 5 hours.

Study of the origins of modern standard German from the Indo-European parent language through proto-Germanic, Old and Middle High German, and the early modern period.

496H, 497H, 498H. Directed Reading and/or Projects. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

Russian (RUS)

101, 102. Elementary Russian. 5 hours each.

Grammar and composition, conversation, reading and dictation.

103. Intermediate Russian. 5 hours.

Prerequisite: RUS 102.

Intermediate, grammar, reading, conversation, dictation, and composition.

104. Russian Grammar, Composition, and Conversation. 5 hours.

Prerequisite: RUS 103.

Advanced grammar, reading, oral and written composition, conversation, dictation.

210. Current Soviet Prose. 5 hours.

Prerequisite: RUS 104.

Developing comprehension and building vocabulary by reading a variety of current materials; audio and video sources will be used.

222. Intermediate Russian Grammar. 5 hours.

Prerequisite: RUS 104.

A review of the Russian grammar, including a thorough examination of particularly difficult features.

310. Russian Composition and Conversation. 5 hours.

Prerequisite: RUS 104 or equivalent.

The course is designed to promote the student's ability to express himself/herself accurately in speaking and in writing Russian and to develop his/her ability to understand native Russian speech. The course is conducted in Russian.

320. Russian Culture. 5 hours.

Prerequisite: RUS 310 or equivalent.

A survey of Russian culture from the beginning to the present. The course will assist students in attaining a higher degree of proficiency in all language skills, especially in the area of vocabulary building. This course is to be conducted exclusively in Russian.

399. Directed Study in Russian. 1-5 hours.

This course affords the advanced student opportunity to conduct independent study and research under the direction of individual faculty members.

400. Business Russian. 5 hours.

Prerequisite: RUS 101 and 102.

Introduction to the nomenclature and protocol of East-West trade relations. Acquisition of Russian business terminology.

401. Introduction to 19th-Century Russian Literature. 5 hours.

Prerequisite: RUS 310 or equivalent.

A study of representative works in the original language. The course is conducted in Russian.

402. Introduction to 20th-Century Russian Literature. 5 hours.

Prerequisite: RUS 310 or equivalent.

A study of representative works in the original language. The course is conducted in Russian.

410. Advanced Russian Conversation and Composition. 5 hours.

Prerequisite: RUS 310.

Advanced oral-aural language study combined with emphasis upon grammar, composition, and stylistics.

420. Advanced Readings in Russian. 5 hours.

Prerequisite: RUS 310.

Reading of texts excerpted from sources such as newspapers, magazines, and books.

425. Pushkin. 5 hours.

Prerequisite: RUS 310.

Alexander Pushkin's major works in poetry and prose and his role in the development of the Russian language. Given in Russian.

430. Historical Russian Grammar. 5 hours.

Prerequisite: RUS 310.

Major phonological and morphological changes and the role which (old) church Slavonic played in the development of Russian literary language. Given in Russian.

496H, 497H, 498H. Directed Reading and/or Projects. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

Russian Translation (RUT)

405. 19th-Century Russian Prose in English Translation. 5 hours.

This course will cover various topics in Russian literature. The class will be conducted in English, and all readings will be done in translation.

406. 20th-Century Russian Prose in English Translation. 5 hours.

Reading and discussion, in an historical context, of works by A. Bely, A. Solzhenitsyn, B. Pasternak, V. Nabokov, M. Bulgakov, Ye. Zamyatin, and Yu. Olesha.

Scandinavian (SCA)

208. Viking Civilization. 5 hours.

A cultural survey of Scandinavian civilization from the first known Viking forays to the saga-writing period in Iceland, from the heart of Russia and the harbor of Constantinople to the settlements in Greenland and the shores of North America. Readings will include several Icelandic sagas.

Swedish (SWE)

399. Directed Study in Swedish. 1-5 hours; maximum 15 hours.

This course affords the student opportunity to conduct independent study and research under the direction of individual staff members.

History (HIS)

Contact Person: Dr. William Stueck, 542-2053

111. History of Western Civilization to 1500. 5 hours.

Development of the institutions of the Western world from earliest times to 1500.

121. Early Modern Western Civilization. 5 hours. Credit for both HIS 112 and HIS 121 will not be allowed.

A cultural survey of Western civilization from the Renaissance to the end of the Napoleonic Era, emphasizing ideas of the period.

122. Modern Western Civilization. 5 hours. Credit for both HIS 112 and HIS 122 will not be allowed. A cultural survey of Western civilization from the Congress of Vienna to the present, emphasizing ideas of the period.

131. (ANT) An Introduction to Latin America. 5 hours.

See ANT 131.

210. (GGY/ANT/CML/SOC) Introduction to Africa. 5 hours.

See GGY 210.

215H. History of Western Civilization to 1500 (Honors). 5 hours.

Not open to students with credit in HIS 111. Development of the institutions of the Western world from earliest times to 1500. Taught in seminar fashion, with extensive outside readings in both the principal secondary and primary sources.

216H. History of Western Civilization 1500-1815 (Honors). 5 hours.

Not open to students with credit in HIS 112 or 121. Development of the institutions of the Western world from 1500 to 1815. Taught in seminar fashion, with extensive outside readings in both the principal secondary and primary sources.

217H. History of Western Civilization Since 1815 (Honors). 5 hours.

Not open to students with credit in HIS 112 or 122. Development of the institutions of the Western world since 1815. Taught in seminar fashion, with extensive outside readings in both the principal secondary and primary sources.

231. History of the Americas. 5 hours.

Not open to students with credit in HIS 332H. The new world from pre-Columbian times to the present, with emphasis on social and economic development and the evolution of political cultures in the Western Hemisphere from the American Revolution to the present.

241. Introduction to the History of Africa: Earliest Times to 1600. 5 hours.

Not open to students with credit in HIS 381. Cultural history of Africa to 1600. Such topics as the origins of agriculture, the rise and growth of complex societies and states, the spread and impact of Islam, the impact of Europe and the slave trade, and Africa in Diaspora will be covered.

242. Introduction to the History of Africa: 1600 to the Present. 5 hours.

Not open to students with credit in HIS 382. Cultural and political history of Africa since 1600, including the development of African societies and their increasing interaction with, and assimilation of, diverse ethnic groups and non-African peoples after 1600.

251. American History to 1865. 5 hours.

Development of the American nation from the Age of Discovery to 1865. Also see pages on Examinations on the Constitutions in the Academic Information section.

252. American History Since 1865. 5 hours.

Development of the American nation from 1865 to the present. Also see pages on Examinations on the Constitutions in the Academic Information section.

253H. History of the U.S., 1500-1865 (Honors). 5 hours.

Not open to students with credit in HIS 251. Development of the American nation from the Age of Discovery to 1865. More attention will be given to cultural history and to themes which are usually treated briefly in traditional courses. Also see pages on Examinations on the Constitutions in the Academic Information section.

254H. History of the U.S., 1865-Present (Honors). 5 hours.

Not open to students with credit in HIS 252. Development of the American nation from 1865 to the present. More attention will be given to cultural history and to themes which are usually treated briefly in traditional courses. Also see pages on Examinations on the Constitutions in the Academic Information section.

255. Latinos in the United States. 5 hours.

A history of the Latino people in the United States (and their diversity, their contributions to American culture and society). Approximately fifty percent of the course will address political, social, and economic issues of importance to Latinos and Latinas since about 1960.

262. The Middle East Since 1914. 5 hours.

Not open to students with credit in HIS 264H.

History of the Middle East from World War I to the present, focusing on political, religious, cultural, and economic circumstances.

264H. Religion, Nationalism, and Revolution in the Middle East, 1900 to the Present (Honors). 5 hours.

Not open to students with credit in HIS 262. Evolution of religious, nationalist, and cultural identities in the region of the Modern Middle East and their contribution to political revolutions throughout the 20th century.

278. East Asian Civilizations I. 5 hours.

Historical, religious, political, economic, and social traditions of East Asia, from prehistory to the seventeenth century, emphasizing political and cultural interaction within the region.

279. East Asian Civilizations II. 5 hours.

Historical, religious, political, economic, and social traditions of East Asia, from the seventeenth century to the present, emphasizing political and cultural interaction within the region.

300M. Junior Seminar in History: Methods, Theories of History, and Historiography. 5 hours.

Prerequisite: History majors only and permission of department.

A seminar for history majors on the methods of historical research and writing as well as a brief study of the philosophy of history and historiography. Required of all history majors.

311E. Colonial and Revolutionary America. 5 hours.

Exploration and settlement of the English colonies in North America; development of colonial life through blending of European backgrounds and American environment.

311H. America and the World, I (Honors). 5 hours.

An Honors undergraduate seminar. An introduction to the principles of geopolitics, emphasizing their effects on the development of the U.S. during the formative colonial and national periods. Topics such as national interest and security, manifest destiny, balance of power and concepts of power politics will be treated.

312E. From Jefferson to the Civil War. 5 hours.

Covers the period in American history from the election of Jefferson in 1800 to the election of Lincoln in 1860. Development of political, social, and economic factors.

312P. The Trans-Mississippi West. 5 hours.

American political, social, and economic institutions as they developed in the region west of the Mississippi River. The impact of the frontier upon the American people.

History

315C. (REL) Religion in the United States. 5 hours.

A survey of the most significant developments in American religious history and thought from Puritanism to the present. Particular attention will be given to the social and cultural contexts in which various religious movements arose.

316P. Survey of American Diplomacy Since 1914. 5 hours.

A survey of American foreign relations from 1914 to the present.

320F. History of Science to the Scientific Revolution. 5 hours.

A survey of the history of early science beginning with some major ancient and medieval natural philosophers and ending with the Scientific Revolution of the 1500s and 1600s, which has decisively shaped modern civilization.

320P. History of Science Since the Scientific Revolution. 5 hours.

Continuation of the survey of the history of science, from the culmination of the Scientific Revolution in the late 1600s to the twentieth century, considering science and scientific ideas in relation to broader social, religious and intellectual issues.

321. History of Medicine. 5 hours.

Overview of the history of Western medicine with emphasis on the demographic and social consequences of epidemic diseases, medical theory and practice, public health, and the relationship between science and medicine.

325. Ancient History. 5 hours.

A survey of the political and economic world from the Stone Age to the end of the Western Roman Empire in 476 A.D.

330F. History of European Women. 5 hours.

A survey of the role of women in European history from ancient to modern times with major emphasis on cultural, social and political developments.

331F, 331P. Latin American Civilization. 10 hours (5 hours each of two quarters; either course may be taken for final credit).

A survey of Latin American history and culture from pre-conquest period to 1800, and since 1800.

332H. Comparative History of the Americas, 1750 to the Present (Honors). 5 hours.

Not open to students with credit in HIS 231.

The Americas viewed from a comparative perspective from the mid-eighteenth century imperial crisis to the major issues of the present. Emphasis will be on explaining the dissimilarities in political, economic, and social development in independent states and colonies.

333. History of Mexico. 5 hours.

A survey of Mexican history from pre-Aztec times to the present, emphasizing social, cultural, and political changes.

334. History of Brazil. 5 hours.

Brazilian history from pre-Columbian times to the present. Themes covered include early Indian societies, Portuguese colonization independence, the Dom Pedro era, the abolition of slavery, the Vargas years, military rule, and re-democratization after 1985.

344M. Medieval Civilization. 5 hours.

Europe from the fall of Rome to the Renaissance: the barbarian invasions, growth of power of the Church, struggle with temporal rulers, feudalism, the Crusades, social and literary development.

350F. Renaissance and Reformation. 5 hours.

A study of the transition from medieval conditions with emphasis on religious upheaval of the 16th century.

363F. English History to 1660. 5 hours.

A survey of English history from earliest times to 1660.

363P. English History since 1660. 5 hours.

A survey of English history from 1660 to the present.

365. Early Modern France to 1799. 5 hours.

French social and political history from the 16th century to the end of the French revolution.

366. Modern France Since 1799. 5 hours.

French social and political history in the 19th and 20th centuries. Processes of urbanization and industrialization in the 19th century and French political and cultural development in the 20th are examined.

375. Multiculturalism in America. 5 hours.

A multicultural, multiethnic, and multidimensional perspective of United States history. The roles that Native Americans, European Americans, African Americans, Asian Americans, and Hispanic Americans have played in forging a distinctly "American" culture will be examined.

378. Japan to 1640: Foundations of Culture and State. 5 hours.

Medieval and early modern Japan, focusing on the institutional and cultural foundations of the Japanese state.

379. Japan Since 1640: From Shogun to Superpower. 5 hours.

Modern Japan: the transformation of Japan from an isolationist, agrarian country to a military giant, to a broken and defeated nation, and to an economic superpower.

380H. Introduction to Asian Civilizations (Honors). 5 hours.

Introduction to the sources of Indian, Chinese, and Japanese traditions; provides a broad survey of the major historical developments of these nations.

383. Southern Africa 1600-1902. 5 hours.

Southern African societies and their increasing interaction with European peoples, including reciprocal trade and cultural assimilation, conflicts over land, cattle, labor, and control of trade, and the consolidation of European power in South Africa after the Boer War.

384. 20th Century Southern Africa. 5 hours.

The development of 20th century southern African societies amid the growth of South Africa as an industrialized nation and regional power and the Africans' struggle to maintain control of their economic, social, and political lifestyle.

385H. Communist China (Honors). 5 hours.

Rise of Communism in Contemporary China; specific topics will include, among others: Marxism and Maoism, the Chinese Civil War, the Great Leap Forward, the Great Proletarian Cultural Revolution, and China after Mao.

400S. Senior Seminar in History. 5 hours.

Not open to students with credit in HIS 499S.

Prerequisite: HIS 300M.

A continuation of HIS 300M, this seminar is designed to provide instruction on selecting, researching and preparing a formal paper on a valid historical topic. The student must assume responsibility for considerable independent work, producing a satisfactory formal paper. Required of all history majors.

403. The History and Philosophy of Women in Science. 5 hours.

Prerequisite: HIS 320F or 320P or two courses in science.

This course explores the role women and issues of gender played in the development of Western science. We will examine (a) current theoretical approaches to the field of gender and science; (b) the history of women's participation in scientific culture; (c) women as the object of scientific research and technological innovation; and (d) sciences and technologies proposed and/or practiced by women.

404. History of Science in America. 5 hours.

Prerequisite: HIS 320P or two courses in science. Scientific thought and research in the United States from the colonial period to the present, with particular attention to the impact of American society on developing a distinctively American scientific tradition.

405. American Lives. 5 hours.

American culture and intellectual history with focus on autobiographical works. In addition to written texts, documents from American music and art will be considered.

410. (ESS) Teaching United States History. 5 hours.

See ESS 410.

412T. The Ante-Bellum South. 5 hours.

Begins with the late colonial period, when settlers were pushing across the southern Appalachians, and continues to the secession of the South. Southern life and civilization will be studied.

413F. The Civil War Period of American History. 5 hours.

Civilian activities of the people; problems of the Northern and Southern governments. Emphasis on the Confederacy. Only major military campaigns will be considered.

413P. The Era of Reconstruction, 1865-1877. 5 hours.

The reconstruction of the South along all lines, as well as the remaking of the North. Beginnings will be found during the Civil War; the process will be continued to 1877.

414C. The South Since Reconstruction. 5 hours.

The South since the Reconstruction period with emphasis upon social, economic, and political developments of the region.

414F. The Origins of Modern America, 1877-1917. 5 hours.

An examination of the expansion, industrialization, and urbanization of the United States, of the emerging political, economic and social problems, and of the political responses to the developments of the era.

414P. Recent America, 1917-1945. 5 hours.

The history of political, economic, social and cultural development during the present century.

414T. Modern America, 1945-Present. 5 hours.

An examination of social, economic, diplomatic, and political trends in the United States during the post-World War II era.

415E. Constitutional History of the United States. 5 hours.

A study of how actual political and social conditions in American history have produced fundamental constitutional principles and practices. Also see pages on Examinations on the Constitutions in the Academic Information section.

415F. Modern American Legal History. 5 hours.

A survey of American legal history from the early nineteenth century to the present, which emphasizes the evolution of legal thought and institutions, changes in the nature of the legal profession

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and legal education, and the role of law and the courts in American political, economic, and social development.

415W. Women in American History and Culture. 5 hours.

An introduction to the social science background of the American feminist movement. Emphasis will be placed on women in the 19th-century social movements, in the drive for suffrage and liberation and in contemporary feminism.

416M. Problems in American Foreign Policy, 1776-Present. 5 hours.

A study of selected problems with emphasis on readings.

417M. History of Georgia. 5 hours.

Not open to students with credit in HIS 417N and 417P.

Georgia from its first occupation by the Spaniards to the present. A comprehensive discussion of all aspects of Georgia's development. Also see pages on Examinations on the Constitutions in the Academic Information section.

418P. Modern Black America. 5 hours.

The 20th-century struggle for civil rights, black identity and self-determination. The response to industrialism and urbanization. The role of black institutions and political organizations. The philosophy and tactics of accommodation, integration, and separatism.

431F. The Caribbean Area. 5 hours.

Conquest and settlement of the islands and Caribbean periphery by the Spanish, the intrusions by the French, Dutch, and English, and the more recent developments of the 19th and 20th centuries.

433F. The United States and Latin America. 5 hours.

A history of the political, economic, and cultural relations between the U.S. and Latin America from 1776 to the present. Topics include Spanish-American revolutions, Monroe doctrine, U.S. expansionism, Pan American system, U.S. intervention, Good Neighbor policy, Latin America in the Cold War, and U.S. and Latin American revolutions.

433P. Latin America: A Socioeconomic History Since 1930. 5 hours.

Latin American social and economic development from the onset of the Depression until the 1990s. The role of the state in economic development; the impact of modernization on traditional social systems; persistence of social inequity amidst development; and the liberal and revolutionary responses to social needs.

437M. Ancient Near East. 5 hours.

A survey of the ancient peoples and cultures of the Near East from earliest historical times through the Persian empire.

438M. Greek History. 5 hours.

A study of Greek history to the time of Alexander the Great.

438P. Hellenistic History. 5 hours.

Problems in Hellenistic History from 330 B.C. to the Roman conquest with emphasis on the Antigonid, Seleucid, and Ptolemaic dynasties.

439F. Roman Republic. 5 hours.

A study of Roman history to the end of the republic.

439P. Roman Empire. 5 hours.

History of the Roman Empire from 27 B.C. to A.D. 337 with special emphasis on the government of Augustus, reasons for its decline, and the final attempt at unification of the empire under Constantine.

445F. Norman and Early Angevin England, 1066-1307. 5 hours.

A detailed study of English political, constitutional, legal, and feudal history from the Norman conquest to the death of Edward I.

445G. England in the Age of Chaucer, 1307-1485. 5 hours.

An investigation of political, social, and intellectual developments from the beginning of the reign of Edward II through that of Richard III, the epoch of Shakespeare's great historical dramas and of Chaucer.

445M. Medieval Intellectual Survey. 5 hours.

Survey of medieval intellectual history. An examination of European intellectual development from Constantine to Dante.

445P. Medieval France, 987-1498. 5 hours.

An intensive study of France under the Capetian and early Valois kings. Emphasis will be placed upon political, feudal, and social history, unified by the story of the growth of the national state focused upon the king.

449A. The Golden Age of European Natural History. 5 hours.

Prerequisite: BIO 104-104L or 108-108L.

A study of the discoveries, controversies, and speculations in 18th- and 19th-century zoology and paleontology which profoundly shaped modern thought about man and nature. Readings from various biological traditions include works by Buffon, Kant, Goethe, Cuvier, Lamarck, Lyell, Darwin, Huxley.

History

450M. Intellectual History of the Renaissance. 5 hours.

Survey of Renaissance intellectual history. An examination of European intellectual history from Dante to Erasmus.

450P. Intellectual History of Early Modern Europe. 5 hours.

Intellectual history of early modern Europe. An examination of intellectual developments in 16th- and 17th-century Europe.

451E. History of the Reformation. 5 hours.

Intensive study of selected aspects of the Reformation with emphasis on the late medieval background, the theology of the major reformers, the establishment of the major denominations, the Council of Trent and modern historiography of the Reformation.

451M. The Age of Absolutism. 5 hours.

Europe from 1648 to 1789, with particular emphasis upon France. The political history of the age will be supplemented by examination of economic and social institutions and the Enlightenment.

451W. European Intellectual History, 1914 to the Present. 5 hours.

European thought from 1914 to the present, with emphasis on the relationship between political developments and dominant ideas and beliefs.

452F. The French Revolution and Napoleon. 5 hours.

Europe from 1789 to 1815, centering upon events in France. Stress is placed upon the political, diplomatic and military history of the era.

453F. 20th-Century Europe. 5 hours.

The history of Europe from 1914 to the present. The main political, social, economic, cultural, and intellectual movements will be stressed.

457A. Military History to 1815. 5 hours.

A history of warfare in ancient, medieval and early modern times. Its techniques, theory and role in the evolution of western society.

457B. Recent Military History. 5 hours.

The history of warfare and the development of weapons, techniques, and military thought in the 19th and 20th Centuries.

457E. The Age of World War I. 5 hours.

The origins of modern world politics, culminating in World War I and the peace settlement of 1918-24. The interaction between world politics and the 20th-century ideologies—welfare-state, democracy, fascism, and communism—and the intellectual and technological roots of these ideologies.

457F. The Age of World War II. 5 hours.

A continuation of HIS 457E. The interwar period, the war, and its consequences with emphasis on Europe.

457M. Germany Under the Weimar Republic to the Present. 5 hours.

A survey of political and social developments since 1918. Emphasis will be given to the breakdown of the Weimar Republic and the rise and structure of Nazism.

457N. Nazism and Fascism in Europe, 1919-1945. 5 hours.

A survey of the two totalitarian movements, Italian Fascism and German National Socialism (Nazism), emphasizing the intellectual origins of anti-democratic impulses both before and after 1919, the unique social and political factors present in each nation, the personalities of Hitler and Mussolini, and the growth of the totalitarian one-party state.

457T. The Age of the Cold War. 5 hours.

A continuation of HIS 457F. The political, ideological, and military conflicts and the search for a new world order in the aftermath of World War II.

464E. The Tudor Period of English History, 1485-1603. 5 hours.

England's emergence as a modern state. Its political, religious, economic, social, and intellectual development during the Renaissance and Reformation.

464M. The Stuart Period of English History, 1603-1714. 5 hours.

England during the evolution of parliamentary supremacy: problems leading to the Civil War, interregnum, restoration, and revolution settlement.

465F. Britain in the Age of Revolution 1714-1868. 5 hours.

This course will discuss British foreign and domestic policies under the stresses of the American War of Independence, the French Revolution, and the Industrial Revolution. Special attention will be given to the establishment of political stability and the growth of industrial society.

465G. Modern British History, 1868-Present. 5 hours.

A survey of the political, economic, social and diplomatic developments in Great Britain during the period 1868-present.

466M. History of Canada, 1763-Present. 5 hours.

A study of selected problems in Canadian History from the middle of the eighteenth century to the present day.

471F. The Russian Revolution and the Rise of Stalin, 1881-1927. 5 hours.

The final phase of the Russian revolutionary movement and the collapse of the empire under the impact of the wars of 1904-05 and 1914-17. The 1917 Revolutions, Bolshevik victory, and the period of the New Economic Policy.

History

471P. Soviet Union Since 1927. 5 hours.

Soviet Union from Stalin Revolution to present. Stresses domestic developments and rise of USSR to world power. Post-Stalin internal changes and polycentrism in Communist world.

472E. Eastern Europe in the Modern Age. 1800-Present. 5 hours.

Efforts of East European nations to gain and maintain independence. Emphasis on Eastern Europe during the Cold War, the 1989 national liberation, subsequent political-economic-social problems, and importance of the area in international relations.

478A. History of China I: The Traditional Order from Prehistory to the Sung Dynasty. 5 hours.

An examination of the political, economic, social and cultural life of ancient China from its earliest beginnings to the Sung dynasty. Emphasis is on traditional Confucianism, Taoism, and Buddhism, the primary molders of Chinese culture.

478B. History of China II: The Transitional State from the Sung Dynasty to the 1911 Revolution. 5 hours.

An examination of significant changes in Chinese culture, as well as an analysis of those forces within and without China that contributed to or inhibited modernization.

478C. History of China III: The Modern Transformation from the 1911 Revolution to the Present. 5 hours.

A study of China in the 20th century with the focus on the Republic of China, its disintegration, the rise of Communism, and the changes in the nature of the People's Republic of China.

479A. Japan and the Samurai. 5 hours.

Evolution of Japan's warrior class from earliest times to its abolition in the late 1800's, the changing political and social roles of the samurai, and the development of warfare and martial art.

479B. Women in Japanese History. 5 hours.

Prerequisite: HIS 378 or 379 or 479A or permission of department.

Changing political, social, and economic positions of women in Japan from ancient times to the present.

481. The History of Eastern Africa: Earliest Times to 1800. 5 hours.

Economic, political, and cultural history of eastern Africa to 1800. Such topics as the origins of agropastoralism, and rise and growth of city-states and kingdoms, the Indian Ocean trading network, and slavery will be covered.

482. History of Eastern Africa: 1800-1900. 5 hours.

Economic and cultural history of east Africa from 1800-1900s. Regional systems of food produc-

tion, trade, and ethnicity, missionary and merchant activity, colonial penetration, African nationalism, and independence.

483. History of Famine and Food Systems in Africa. 5 hours.

Antiquity and complexity of African agricultural achievement from the Later Stone Age to 1990, including the contemporary climate of opinion on food and famine in Africa, the development of food systems between 15th and 20th centuries, attempts by international capital to gain control of African food systems.

491. Tutorial in British History. 5 hours.

Prerequisite: Limited to students enrolled in the University of Georgia Summer-at-Oxford Program. Individual study with a recognized Oxford University tutor in a designated area of British cultural, intellectual or political history. Areas change each summer depending on the tutor. Offered only through the University of Georgia Summer-at-Oxford Program.

493M. Philosophy of History. 5 hours.

An introduction to both classical and modern views on the nature of history. Consideration will also be given to the analysis of the conceptual foundations of historical methods, theories or explanation, the problem of historical objectivity, and the purpose of history and its relation to other disciplines.

495T. Topics in History. 5 hours. Repeatable for maximum 10 hours credit.

Prerequisite: Junior or senior standing.

A study of a special subject not otherwise offered in the history curriculum. Topics, methodology, and instructors vary from quarter to quarter. Normally, only one such course may be counted toward the major or minor in history, exceptions being made only by the Coordinator of Instruction.

496H, 497H, 498H. Directed Reading and/or Projects. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field. The honors thesis may be used to fulfill the HIS 400S requirement, but the student must attend a senior seminar section.

590P. United States History for Advanced Placement Teachers. 3 hours.

An extensive survey of United States history, designed to prepare in-service secondary school teachers for effective instruction of Advanced

Placement students. Emphasizes significant factual, chronological, and interpretive knowledge and current historiographical themes in United States history.

Honors Program

(Special Problems Seminars)

Arts and Literature (ARL)

411H, 412H, 413H. Special Problems Seminar in Arts and Literature (Honors). 1-5 hours each. See description under ARTS AND LITERATURE section.

Science (SCI)

421H, 422H, 423H. Special Problems Seminar in Science (Honors). 1-5 hours each. See description under SCIENCE section.

Social Science (SOS)

401H, 402H, 403H. Special Problems Seminar in Social Science (Honors). 1-5 hours each. See description under SOCIAL SCIENCE section.

Interdisciplinary Studies (IDS)

Contact Person: Dr. Clifton W. Pannell, 542-3400

307. (ANT/ECL) Environment and Humans. 5 hours. See ECL 307.

499. Senior Thesis. 5 hours. Prerequisite: Senior standing in the Interdisciplinary Studies Program. Individual research or project in the major area. Required of all IDS majors.

Japanese (JPN)

See Comparative Literature.

Korean (KRN)

See Comparative Literature.

Linguistics (LIN)

Contact Person: Dr. Fredric Dolezal, 542-2256

210. The Study of Language. 5 hours. An introduction to the scientific study of language, emphasizing such topics as the organization of

grammar, language in space and time, and the relationship between the study of language and other disciplines.

310. (CLC) English Derivatives from Greek and Latin. 5 hours. See CLC 310.

320H. Introduction to Linguistics (Honors). 5 hours. Not open to students with credit in LIN 210.

A survey of the field of linguistics and of linguistic theory. Students will be encouraged to conduct individual explorations into the relationship between linguistics and their major field.

338. (GER) Contrastive Grammar: German/English. 5 hours. See GER 338.

400T. (ENG) History of the English Language. 5 hours. See ENG 400T.

401. (ENG) American English. 5 hours. See ENG 401.

402T. (ENG) Language Variation. 5 hours. Theory and assessment of regional and social language variation within one language; historical and present-day illustrations come primarily from English, with consideration of the significance of language variation in our modern social context.

406T. (ENG) Old English. 5 hours. See ENG 406T.

409. (ANT) Cognitive Anthropology. 5 hours. See ANT 409.

411T. (ENG) English Grammar. 5 hours. See ENG 411T.

414. (PHY) Introduction to Philosophy of Language. 5 hours. See PHY 414.

415T. (ENG) Transformational Syntax. 5 hours. Study of techniques and formalisms for analyzing syntactic phenomena of human languages within the framework of transformational grammar. Examples will be drawn primarily from English.

417T. (ENG) Second Language Acquisition. 5 hours. See ENG 417T.

418T. (ENG) ESL Error Analysis. 5 hours. See ENG 418T.

421. Introduction to Indo-European Studies. 5 hours. The history and development of the Indo-European language family; the various early Indo-European dialects, their grammatical structures, and the evolution of those structures from the proto-language.

Linguistics

430. Generative Phonology. 5 hours.

Prerequisite: LIN 481.

Study of techniques and formalisms for analyzing sound systems of languages by means of distinctive features.

446.(GER) Linguistic Structure of German. 5 hours.

See GER 446.

449. Psychology of Language. 5 hours.

Prerequisite: Permission of department.

Theories and relevant data are studied from the perspective of language as a communicative device.

450. (PSY/CSD) Language Development. 5 hours.

See CSD 450.

461. Structure of Sanskrit I. 5 hours.

An introduction to the phonology, morphology, and syntax of the classical Sanskrit language, emphasizing the position of Sanskrit within the Indo-European language family and its importance for Indo-European linguistics.

462. Structure of Sanskrit II. 5 hours.

Prerequisite: LIN 461.

Continued studies in both the synchronic and diachronic grammar of classical Sanskrit.

469. Historical Linguistics. 5 hours.

Traditional methods of historical linguistics are reviewed, with examples from several different language families. Various kinds of possible phonological and syntactic change are investigated in relation to modern linguistic theory.

471. Languages in Contact. 5 hours.

Prerequisite: LIN 210 or 320H or permission of department.

The study of the influence of languages on other languages spoken in the same or neighboring areas, with consideration of interference in phonology, morphology, syntax, semantics, and vocabulary.

481. Phonetics and Phonology. 5 hours.

Prerequisite: LIN 210 or permission of department.

Phonetic transcription of various languages dictated by native and non-native speakers; understanding of the phonemic principle by the solution of selected problems which consist of phonetically transcribed data.

482. Morphology. 5 hours.

Prerequisite: LIN 210 or permission of department.

Grammatical analysis of phonemically transcribed data from numerous languages of the world.

486. (ANT/EFL) Language in Culture and Society. 5 hours.

Prerequisite: LIN 210 or permission of department.

An introduction to the study of language as a cultural and social phenomenon. Topics include language and meaning, language and world view, language and social behavior, and language and social issues.

487. (CML) Language, Gender, and Culture. 5 hours.

Prerequisite: LIN 210 or equivalent.

An inter-disciplinary study of the role of language and culture in the formation of the philosophical assumptions about gender differentiation in society.

490. Topics in Indo-European Linguistics. 5 hours. Repeatable for maximum 15 hours credit.

Prerequisite: Permission of department.

A study of the synchronic and diachronic grammar of an older Indo-European language not otherwise taught at the University. Possible offerings include Avestan, Hittite, Lithuanian, Old Church Slavic, and Old Irish. Occasionally other languages or topics, such as Indo-European phonology, morphology, or syntax may be covered.

491. Special Topics in Linguistics. 5-15 hours. Repeatable for maximum 15 hours credit.

Prerequisite: LIN 210 or permission of department.

A program of directed study including reading and discussions of current developments and issues in linguistics.

496H, 497H, 498H. Directed Reading and/or Projects. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

507F. (FR) Applied French Linguistics. 5 hours. See FR 507F.

507S. (SP) Applied Spanish Linguistics. 5 hours. See SP 507S.

557F. (FR) French Phonetics. 5 hours. See FR 557F.

557S. (SP) Spanish Phonetics. 5 hours. See SP 557S.

570F. (FR) History of the French Language. 5 hours. See FR 570F.

570S. (SP) History of the Spanish Language. 5 hours.
See SP 570F.

Marine Sciences (MAR)

345-345L. Marine Biology. 5 hours.

Not open to students with credit in ZOO 345-345L.
Prerequisite: BIO 108-108L or equivalent.

The origin and distribution of life in the sea, marine primary and secondary production, with focus on the ecological dynamics of population growth and maintenance in the world's oceans. Comparison of marine biological systems with terrestrial biological systems to elucidate their common or unique physiological and ecological processes.

410. General Oceanography. 5 hours.

Not open to students with credit in GLY 410.

Prerequisite: CHM 122 and 122L and PCS 128-128L or either GLY 126-126L or BIO 108-108L or equivalent.

Structure, composition, dynamics and life of the oceans. Study of the physical, chemical, biological, and geological processes in the oceans, emphasizing the interaction among these scientific disciplines to understand how the marine system functions.

462-462L. (MIB) Microbial Ecology. 5 hours.
Three lectures or recitations and two 3-hour lab periods.

Prerequisite: MIB 350-350L or permission of department.

Emphasizes the roles of microorganisms in ecosystems. Attention is given to the examination of nutrient cycles, methods of microbial analysis and the functional roles of microorganisms.

481. Microbial Biogeochemistry. 5 hours.

Prerequisite: MIB 350-350L and BCH(BIO) 310 or equivalent, or permission of department; MIB 409 and MAR(MIB) 462-462L are recommended.

An intensive examination of the microbial processes which are or have been important in modifying the earth's lithosphere, hydrosphere and atmosphere. Emphasis is placed on microbially mediated precipitation and solubilization of minerals, cycling of dissolved and particulate organic matter in natural waters, and the physiological ecology of microorganisms adapted to environments of extreme pH, temperature, and pressure, etc.

Mathematics (MAT)

Contact Person: Dr. Marshall Saade, 542-2211

102. College Algebra. 5 hours.

Not open to students with credit in MAT 100.

A study of algebra, including absolute values and inequalities, complex numbers, functions, such as polynomial, rational, exponential and logarithmic functions, systems of equations, the binomial theorem.

103. Fundamentals of Mathematics for Business. 5 hours.

Prerequisite: Score of 450 or better on the mathematics achievement test or credit for or exemption from MAT 102 or SAT Math score of 500 or better.

An introduction to the mathematical analysis of problems in management and economics.

105. Introduction to Mathematics. 5 hours.

Prerequisite: Completion of or exemption from MAT 102.

Applications of mathematics to management and decision making. Graph theory: Euler and Hamiltonian circuits, spanning trees. Scheduling, list processing algorithms. Bar codes, error correcting codes. Voting methods, weighted voting. Congressional apportionment. Game theory, strategies for zero-sum games.

106. Introduction to Mathematics. 5 hours.

Prerequisite: Completion of or exemption from MAT 102.

Applications of number theory and geometry. Prime numbers, factoring, Euclidean algorithm. Cryptology: substitution ciphers, modular arithmetic and public key codes. Geometry and biology: scale and similarity, exponential growth. Symmetry: phyllotaxis, strip patterns, tilings, crystals.

109. Trigonometry. 5 hours.

Prerequisite: MAT 102.

Classical trigonometry with an emphasis on applications; some material of analytic trigonometry.

116. Precalculus Mathematics. 5 hours.

Prerequisite: MAT 102.

For those students who intend to take calculus. The concept of function, intensive study of polynomial, rational, exponential, logarithmic, and trigonometric functions, and applications. Credit for both MAT 109 and 116 will be allowed.

205, 206. Mathematics for Elementary Teachers. 5 hours.

A two quarter sequence in mathematics appropriate to the needs of the elementary school teacher.

207. Mathematical Analysis for Business I. 5 hours.

Not open to students with credit in MAT 253.

Prerequisite: MAT 103.

A sequel to MAT 103, including an introduction to calculus with applications to problems in management and economics.

244. Calculus for Economics. 5 hours.

Not open to students with credit in MAT 254.

Prerequisite: MAT 253 or MAT 207.

Topics specifically chosen to meet the needs of the students of economics: the definite integral, functions of several variables, partial derivatives, Lagrange multipliers, and matrices.

253. Analytic Geometry and Calculus. 5 hours.

Prerequisite: MAT 116 or permission of department.

Introductory differential calculus and applications.

253T. Differential Calculus with Technology. 5 hours.

Not open to students with credit in MAT 253.

Prerequisite: MAT 116.

Differential calculus and applications. Mathematical software for routine calculations and substantial applications. Written projects will be required. No experience with computers is necessary.

254. Calculus. 5 hours.

Prerequisite: MAT 253.

Introductory integral calculus and applications.

254T. Integral Calculus with Technology. 5 hours.

Not open to students with credit in MAT 254.

Prerequisite: MAT 253 or 253T.

Integral calculus and applications. Mathematical software for routine calculations and substantial applications. Written projects will be required. No experience with computers is necessary.

255. Calculus. 5 hours.

Prerequisite: MAT 254.

Multivariable calculus, introductory vector calculus, advanced analytic geometry, infinite series, applications.

256. Introduction to Linear Algebra. 5 hours.

Prerequisite: MAT 254.

An elementary introduction to real vector spaces, linear transformations and matrices with emphasis on their interpretation and computational aspects.

260. Calculus Workshop. 1 hour. Repeatable for

maximum 3 hours credit. Two 2-hour lab periods. Prerequisite: Permission of department.

Corequisite: MAT 253, 263H or 254, 264H, or 255, 265H.

Group experience of solving mathematical problems more difficult than those included in the regular calculus sequence. Collaborative work

directed by a faculty member stimulating the student to engage in mathematical modes of thought. Designed for students who plan to major in mathematics or science.

261. (CS) Discrete Structures I. 3 hours.

See CS 261.

262. (CS) Discrete Structures II. 3 hours.

See CS 262.

263H. Calculus (Honors). 5 hours.

Not open to students with credit in MAT 253.

Prerequisite: MAT 116 and permission of the Honors office.

A study of differential calculus parallel to that in MAT 253, but with greater depth and wider range of applications.

264H. Calculus (Honors). 5 hours.

Not open to students with credit in MAT 254.

Prerequisite: MAT 253 or 263H and permission of the Honors office.

The topics of integral calculus are treated with more depth and wider range of applications than in MAT 254.

265H. Calculus (Honors). 5 hours.

Not open to students with credit in MAT 255.

Prerequisite: MAT 254 or 264H and permission of the Honors office.

The material covered in MAT 255, presented with greater depth and wider range of applications.

273H. Calculus With Theory (Honors). 5 hours.

Not open to students with credit in MAT 254 or 264H or 255 or 265H.

A more rigorous and extensive treatment of the topics in MAT 263H. The real numbers, least upper bound property, limits and continuous functions. Differentiation and applications. Antidifferentiation.

274H. Calculus With Theory (Honors). 5 hours.

Not open to students with credit in MAT 254 or 264H or 255 or 265H.

Prerequisite: MAT 273H or permission of department.

A more rigorous and extensive treatment of the topics in MAT 264H. The integral, fundamental theorems of calculus, applications of integration. Logarithm and exponential. Taylor polynomials, sequences, series, power series; uniform convergence.

275H. Calculus With Theory (Honors). 5 hours.

Not open to students with credit in MAT 255 or 265H.

Prerequisite: MAT 274H or permission of department.

A more rigorous and extensive treatment of the topics in MAT 265H. Vectors. Differential calculus of several variables with applications. Multiple integration, physical applications; change of vari-

ables. Green's Theorem. Topics from vector integral calculus.

350. Infinite Sequences and Series. 4 hours.
Prerequisite: MAT 254.

The concept of sequence and series convergence in the real and complex domain; properties of limits and tests for convergence; applications to continuous functions, power series representations, explicit summation formulae and numerical error estimates.

358. Introduction to Differential Equations. 5 hours.

Prerequisite: MAT 254.

Solution techniques for first order ordinary differential equations, second order linear differential equations, series solutions, applications in biological and physical sciences.

390. An Introduction to Higher Mathematics. 4 hours.

Prerequisite: MAT 254.

Corequisite: MAT 255 or 256.

Designed to prepare students for courses at the 400 level. Mathematical logic and proofs; functions and relations. The rational and real number systems. Sequences, convergence, and continuous functions. Equivalence relations.

403. Numerical Analysis I. 3 hours.

Prerequisite: MAT 255; recommended corequisite: MAT 256.

Iterative techniques for the numerical solution of non-linear equations; polynomial interpolation; numerical integration; error analysis; digital computer problems and applications.

404. Numerical Analysis II. 3 hours.

Prerequisite: MAT 403; recommended corequisite: MAT 358.

Numerical solution of systems of linear equations, matrix inversion, eigenvalues, numerical solution of ordinary differential equations, and digital computer applications.

405. Numerical Analysis III. 3 hours.

Prerequisite: MAT 404.

Iterative methods for the solution of systems of non-linear equations; splines; linear and convex programming; digital computer applications.

410, 411, 412. Advanced Calculus. 3 hours each.

Prerequisite: MAT 255 and 256.

The concepts, methods, and applications of advanced multivariable calculus. Partial differentiation, implicit functions, multiple integrals, line and surface integrals, differential forms and the classical integral theorems of vector analysis. Infinite series, Fourier series, improper integrals, special functions. The calculus of variations. This course emphasizes the conceptual understanding of

multivariable calculus that is required for the solution of concrete problems and applications to other areas.

414, 415, 416. Introductory Topology. 3 hours each.

Prerequisite: MAT 255.

An introductory course in point set topology.

420, 421, 422. Introduction to Methods of Applied Mathematics. 3 hours each.

Prerequisite: MAT 255 and 358.

The construction of mathematical models for applied problems in terms of ordinary and partial differential equations. The standard methods for the solution of the boundary value problems and partial differential equations of applied mathematics. Solution by series, Fourier series, Bessel functions, Legendre polynomials. Laplace and Fourier transforms. Variational methods. Complex variable techniques. This course emphasizes the use of advanced mathematical methods for the solution of "real world" problems from a variety of scientific areas.

423. Mathematical Models in Biology I. 3 hours.

Prerequisite: MAT 253 and 254.

Construction, use and evaluation of mathematical models for the biological sciences. Compartmental flow models, dynamic system models, discrete and continuous models, deterministic and stochastic models. Emphasis on construction and use of models by students in their own research.

424. Mathematical Models in Biology II. 3 hours.

Prerequisite: MAT 423.

A continuation of MAT 423, studying specific models and related mathematics more thoroughly, as determined by the interests of those enrolled. More emphasis on model use and evaluation.

427. (CS) Graph Theory. 3 hours.

Prerequisite: MAT 256.

The elementary theory of directed and non-directed graphs. Topics include connectedness, bases, trees, Euler's problem, the traveling salesman's problem and networks. A number of algorithms and applications are included.

429. Game Theory. 3 hours.

Prerequisite: MAT 256.

An introduction to the ideas and techniques of Game Theory. Topics include cooperative and non-cooperative games, zero-sum games, differential games, equilibria, solution theory and the core. A number of applications are discussed.

431. Theory of Numbers I. 3 hours.

Prerequisite: MAT 254.

An elementary course in number theory.

432. Theory of Numbers II. 3 hours.

Prerequisite: MAT 431.

A continuation of MAT 431.

Mathematics

433. Theory of Numbers III. 3 hours.

Prerequisite: MAT 432 or permission of department.

A continuation of MAT 432 with an introduction to algebraic and analytic number theory.

435, 436. Elementary Differential Topology. 3 hours each.

Prerequisite for 435: MAT 255 and 256 and 414.

Prerequisite for 436: MAT 435.

Differential calculus in \mathbb{R}^n , manifolds in Euclidean space. Fundamental ideas of transversality, homotopy, and intersection theory. Differential forms, integration on manifolds, Stokes' theorem, deRham cohomology. Topics from differential geometry.

437. Modern Algebra and Geometry I. 3 hours. Not open to students with credit in MAT 440 or 540.

Prerequisite: MAT 256 and 390.

An integrated course in modern algebra, linear algebra, and geometry. Integers, modular arithmetic, Euclidean algorithm and applications. Rational, real, and complex number systems; isometries of the plane. Polynomials.

438. Modern Algebra and Geometry II. 3 hours. Not open to students with credit in MAT 441 or 541.

Prerequisite: MAT 437.

Continuation of MAT 437. Rings and fields. Splitting fields of polynomials. Groups and symmetry groups.

439. Modern Algebra and Geometry III. 3 hours. Not open to students with credit in MAT 542.

Prerequisite: MAT 438 or 440.

Continuation of MAT 438. Group actions and counting principles: symmetry groups of regular polyhedra, Burnside's Theorem. Isometries of three-space, affine and projective geometry. Additional topics may include: Galois theory, non-Euclidean geometry, or further topics in number theory.

440. Introduction to Higher Algebra. 3 hours.

Prerequisite: MAT 256.

An introductory course in group theory. Examples of groups, subgroups, quotient groups, homomorphism theorems, permutation groups.

441. Introduction to Higher Algebra. 3 hours.

Prerequisite: MAT 440.

An introductory course in ring and field theory. Examples of rings, ideals, quotient rings, homomorphism theorems, polynomial rings, field extensions, constructible numbers, some Galois Theory.

442. Introduction to Higher Algebra. 3 hours.

Prerequisite: MAT 441.

A course in the theory of vector spaces and linear transformations. A more rigorous and deeper treatment than MAT 256. Basis and dimensions of vector spaces, characteristic roots, vectors and equation of a linear transformation, canonical forms, and determinants.

447. (CS) The Design and Analysis of Computer Algorithms I. 3 hours.

Prerequisite: CS 202-202L or the equivalent, MAT 255, and either CS 303 or MAT 256.

Computer models, design of algorithms, sort/order problems.

448. (CS) The Design and Analysis of Computer Algorithms II. 3 hours.

Prerequisite: MAT (CS) 447.

Integer and polynomial arithmetic, pattern recognition, algorithms on graphs.

450. Linear Algebra I. 3 hours.

Prerequisite: MAT 256.

Theory of finite and infinite dimensional linear spaces: dual spaces, quotient spaces, homomorphisms, linear equations, matrix groups. Emphasis on the conceptual understanding of linear algebra that is required for the solution of concrete problems and applications.

451. Linear Algebra II. 3 hours.

Prerequisite: MAT 450.

Theory of real and complex vector spaces with norm or inner product: Banach spaces and Hilbert spaces. Orthonormal bases, orthogonal group, symmetric transformations. Positive definite matrices, matrix functions, convex sets, Hahn-Banach Theorem. Applications in geometry and physics.

452. Linear Algebra III. 3 hours.

Prerequisite: MAT 451.

Theory and applications of linear transformations, projective spaces and tensor products. Characteristic polynomial, minimal polynomial, Cayley-Hamilton Theorem, Jordan Canonical Form. Projectivities. Multilinear algebra, tensor products, tensor algebra.

453, 454, 455. Introduction to Analysis. 3 hours each.

Prerequisite: MAT 255.

An introductory course in functions of a real variable; elementary topology of metric spaces; continuous functions; differentiation and Riemann integration; measure theory and the Lebesgue integral.

460. Elementary Differential Equations, I. 3 hours.

Prerequisite: MAT 256 and 358.

Higher order linear differential equations. Laplace transform method, introduction to numerical methods, applications.

461. Elementary Differential Equations, II. 3 hours.

Prerequisite: MAT 256 and 358.

Systems of first order linear differential equations, nonlinear differential equations and stability, applications to biological systems.

463. Elementary Differential Geometry. 5 hours.

Prerequisite: MAT 255 and 256.

An introduction to the geometry of curves and surfaces in Euclidean space. Frenet formulas for curves and Gaussian curvature of surfaces. Physical applications. Non-Euclidean geometries.

465. Introduction to Complex Variables. 5 hours.

Prerequisite: MAT 255.

Introductory course in complex variable theory, with applications. (Spring quarter.)

467. (CS) Introduction to Combinatorics I. 3 hours.

Prerequisite: MAT 256.

An elementary introduction to combinatorial thinking, including basic counting principles, binomial coefficients, and recurrence relations. This course is recommended for students in mathematics, computer science, and mathematics education.

468. (CS) Introduction to Combinatorics II. 3 hours.

Prerequisite: MAT(CS) 467.

Topics in combinatorics, including design theory, enumeration theory, combinatorial algorithms and coding theory.

471, 472, 473. (STA) Introduction to Probability Theory. 3 hours each.

Prerequisite: MAT 255.

Probability axioms, combinatorial analysis, random variables, univariate and multivariate distributions, expectation, conditional distributions, independence, law of large numbers and central limit theorems, random walks, Markov chains and processes, Brownian motion, branching and renewal processes, diffusion processes. Applications.

477. Mathematical Methods of Operations Research. 3 hours.

Prerequisite: MAT 256.

An introduction to both the theory and applications of linear and nonlinear programming. Topics covered include linear programming, duality, the simplex method, Kuhn-Tucker conditions and quadratic programming.

496H, 497H, 498H. Directed Reading and/or Projects. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

502. Basic Ideas of Arithmetic. 5 hours.

Prerequisite: MAT 116.

Operations of arithmetic for middle school teachers; number systems, set theory to study mappings, functions, and equivalence relations.

503. Basic Ideas of Geometry and Measurement. 5 hours.

Prerequisite: MAT 116.

Principles of geometry and measurement for middle school teachers.

507P. Calculus for Advanced Placement Teachers. 3 hours.

Extensive survey of one variable calculus designed to prepare in-service secondary school teachers for effective instruction of Advanced Placement teachers. Emphasizes concepts and principles for proper instruction of Advanced Placement students.

520. Foundations of Geometry. 3 hours.

Prerequisite: MAT 102-109 or 116 or two years of teaching high school geometry.

A course in more advanced elementary geometry especially designed for prospective teachers of secondary school mathematics.

521. Advanced Topics in Geometry. 3 hours.

Prerequisite: MAT 520.

A continuation of MAT 520.

522. Transformation Geometry. 3 hours.

Prerequisite: MAT 520.

Transformation geometry.

556. Fundamentals of Probability and Statistics. 5 hours.

Prerequisite: Two mathematics courses numbered 200 or above or two years experience teaching high school mathematics.

Fundamental ideas of probability with particular emphasis on their applications in statistics. Cannot be used as part of 40 hours in AB/BS Mathematics major program.

Microbiology (MIB)

Contact Person: Dr. John W. Fitzgerald, 542-4115, 542-1434

250-250L. Microbiology and Health Care. 5

hours. Four lectures and one 2-hour lab period.

Prerequisite: 10 hours of biological science and 10 hours of physics or chemistry. Specifically for nursing students but open to others with permission of department.

Microbiology

An introduction to infectious diseases emphasizing the nature of the organisms, the interrelationship of microorganisms and human hosts, the prevention and control of infectious diseases and a description of the important infectious diseases of humans.

350-350L. Introductory Microbiology. 5 hours. Three lectures and two 2-hour lab periods.

Prerequisite: 10 hours of biological science, 5 hours of physical science, organic chemistry, or concurrently.

A survey of microorganisms with special emphasis on bacteria and their relationship to man.

360. Introduction to Experimental Microbiology. 1-5 hours. Repeatable for maximum 10 hours credit. Maximum 5 hours per quarter. Daily tutorial, library or lab work.

Prerequisite: 10 hours of microbiology.

An introduction to the microbiological research literature, laboratory methods and reporting techniques. Prearrangement with departmental advisor necessary.

404. Microbiology of Anaerobes. 5 hours.

Prerequisite: MIB 409 or BCH 402 or permission of department.

The course will cover bacterial adaptations to life without oxygen; the differences between facultative and strict anaerobes; distribution, taxonomy, and physiology of anaerobes; fermentations and pathways; anaerobic methodology; industrial applications of anaerobes.

407-407L. (FS/ADS) Food and Dairy Microbiology. 5 hours.

See FS 407-407L.

409. Fundamentals of Microbiology. 5 hours.

Prerequisite: MIB 350-350L.

Fundamental principles and techniques of general microbiology. Attention will be given to growth, nutrition, inheritance, ultrastructure and physiology of representative types of microorganisms.

410. (CB) Immunology. 5 hours.

Not open to students with credit in MIB(ZOO) 410.

Prerequisite: BCH(BIO) 310, and BIO(GN) 320.

Cellular and humoral immune defense mechanisms are described, including the experimental approaches which led to current concepts of immunobiology and immunochemistry.

414. Advanced Laboratory Methods in Microbiology. 5 hours.

Prerequisite: MIB 350-350L; 409 recommended.

Instruction in the design and execution of experiments will be provided to acquaint the student with experimental techniques necessary for basic studies on bacteria. Attention will be given to elective culture techniques, growth and enumeration of bacteria, bioassay techniques, effects of irradiation

and of chemical mutagens, selection of mutants, isolation of DNA, and enzymatic assay techniques.

421-421L. (EHS/FS) Environmental Microbiology. 5 hours.

See FS 421-421L.

422. Pathogenic Bacteriology. 5 hours.

Not open to students with credit in MMB 422-422L.

Prerequisite: MIB 350-350L, 409.

Molecular basis of bacterial virulence: identification of virulence factors, genetic regulation of virulence, and the complex interaction between the bacterial pathogen and the human host.

423. Experimental Pathogenic Bacteriology and Immunology. 5 hours. Three lectures and three 2-hour lab periods.

Prerequisite: MIB 422 or MIB(CB) 410; and MIB 409.

Virulence of bacteria pathogenic in humans; dynamic interaction between bacteria and host.

452-452L. (FS/EHS) Microbiology of Food Sanitation. 5 hours.

See FS 452-452L.

457-457L. (FS) Food Fermentations. 5 hours.

See FS 457-457L.

461-461L. (CSS) Soil Microbiology. 5 hours.

See CSS 461-461L.

462-462L. (MAR) Microbial Ecology. 5 hours.

See MAR 462-462L.

470-470L. Medical Mycology. 5 hours. Three lectures or recitations and three 2-hour lab periods.

Prerequisite: MIB 350-350L or equivalent.

A survey of the yeasts, molds, and actinomycetes most likely to be encountered by a medical mycologist in a diagnostic laboratory with special emphasis on the organisms which are pathogenic for man and other animals.

480L. Microbial Genetics Laboratory. 5 hours.

Four 3-hour lab periods.

Prerequisite: [MIB 350-350L or equivalent] and [BIO(GN) 320 or equivalent] and permission of department.

Genetic analysis of bacteria with emphasis on isolating mutants, and mapping, characterizing, and cloning genes.

496H, 497H, 498H. Directed Reading and/or Projects. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

Music (MUS)

Contact Person: Dr. David Randolph,
542-2764

Theoretical Courses

110. Theory and Literature: Fundamentals of Music. 3 hours.

Introduction to harmony and ear training. Two ear training labs, three classes.

111. Theory and Literature: Fundamentals of Harmony. 3 hours.

Prerequisite: MUS 110.

Melodic and rhythmic materials. Five classes.

112. Theory and Literature: Elementary Harmony. 3 hours.

Prerequisite: MUS 111.

Harmonic principles involving the diatonic triads and the dominant seventh chord. Music literature survey of the late Romantic and Contemporary periods.

212. Theory: Diatonic and Elementary Chromatic Harmony. 3 hours.

Prerequisite: MUS 112.

One keyboard lab, one ear training lab in harmonic materials, three classes.

213. Theory: Chromatic Harmony. 3 hours.

Prerequisite: MUS 212.

One keyboard lab, one ear training lab in harmonic materials, three classes.

214. Theory: Advanced Chromatic Harmony. 3 hours.

Prerequisite: MUS 213.

Melodic and rhythmic materials. Five classes.

309. Theory: Contemporary Materials and Techniques. 3 hours.

Prerequisite: MUS 214.

Study of contemporary compositional and analytical practices and ear training. Two labs, three classes.

310. Introduction to Counterpoint. 3 hours.

Prerequisite: MUS 309.

Species counterpoint. Introduction to contrapuntal techniques. Some practice writing.

319. Composition Laboratory. 1 hour. Repeatable for maximum 5 hours credit.

Prerequisite: MUS 309 or permission of school.

A study of the fundamentals of vocal and instrumental composition, including melodic writing and composition involving melody and harmony. This course is open to non-composition majors only.

324. Instrumentation. 2 hours.

Prerequisite: MUS 309.

Transposition, characteristics and range of the instruments of the orchestra and band. Scoring for miscellaneous small ensembles of these instruments.

325. Orchestral Arranging. 2 hours.

Prerequisite: MUS 324.

Arranging for the symphony orchestra.

326. Band Arranging. 2 hours.

Prerequisite: MUS 324.

Arranging for concert band.

327. Vocal Arranging. 2 hours.

Prerequisite: MUS 324.

Arranging for voices and accompanying instruments.

355. Music Theory for Non-Music Majors. 5 hours.

Studies in music fundamentals, harmony, rhythm, and ear training for the amateur musician.

415. Commercial Music Theory. 3 hours.

Prerequisite: MUS 110.

The fundamentals of music as they relate to pop/rock music. Chords, chord symbols, basic notation, lead sheet writing, and form and analysis of pop/rock music.

470. Form and Analysis. 5 hours.

Prerequisite: MUS 310.

Harmonic and polyphonic forms analyzed. Special stress given sonata forms. Students encouraged to write originally in forms thus analyzed.

471. 16th-Century Counterpoint. 5 hours.

Prerequisite: MUS 310.

The contrapuntal style and techniques of the 16th century, acquaintance with species counterpoint.

475. 18th-Century Counterpoint. 5 hours.

Prerequisite: MUS 310.

Late Baroque contrapuntal techniques and styles.

479. Introduction to Electronic Music. 3 hours.

Prerequisite: MUS 309.

An introductory course in electronic music systems, composition and literature.

510. Advanced Theory. 3 hours.

Prerequisite: MUS 310.

A survey of harmonic and contrapuntal resources, with emphasis upon aural and visual analysis.

Music History and Literature

202. **Appreciation of Music.** 5 hours.

Not open to students with credit in MUS 300 or 359H.

A study of masterpieces of music literature, with particular reference to those being performed on campus during the current quarter.

210H. **History and Analysis of Musical Style (Honors).** 5 hours.

Not open to students with credit in MUS 202 or 359H.

A study of the history and development of music with particular emphasis upon the relationship of music to the important movements in Western civilization.

302. **World Music Survey.** 5 hours.

The full spectrum of music traditions in non-Western high cultures and non-literate societies and an exploration of their structural and symbolic relationships to Western music.

321. **History of Music I.** 3 hours.

Prerequisite: MUS 214.

The history of Western music from its beginnings to 1600 (Middle Ages and Renaissance).

322. **History of Music II.** 3 hours.

Prerequisite: MUS 214.

The history of Western music from 1600 to 1800 (the inception of the Baroque era through the Classical period).

323. **History of Music III.** 3 hours.

Prerequisite: MUS 214.

The history of Western music from the works of Beethoven to the present day.

420. **Ancient and Medieval Music.** 5 hours.

A survey of music from the birth of Christianity to ca. 1400, with an introduction to the place of music in Greek and Roman societies. (Offered alternate years.)

421. **Music in the Renaissance Period.** 5 hours.

A music history and literature course covering the Renaissance period, 1400-1600. (Offered alternate years.)

422. **Music in the Baroque Period.** 5 hours.

A study of musical styles and forms from Monteverdi through Bach and Handel. (Offered alternate years.)

423. **Music in the Classic Period.** 5 hours.

A study of chamber, orchestral, keyboard, and operatic works from the middle and late 18th century. (Offered alternate years.)

424. **Music in the Romantic Period.** 5 hours.

An intensive study of the Romantic period; emphasis on the development of the song, sym-

phony, chamber music, and opera. (Offered alternate years.)

424. **Women and Music.** 5 hours.

Roles of women in music, including the history of women musicians in western art music, women musicians in non-western cultures, women in popular music, and gender issues in music.

436. **Opera Literature.** 3 hours.

The study of representative operas from the Baroque era to the 20th century.

440. **Non-Western Music.** 5 hours.

An introduction to the music of non-European cultures, including those of the Far East, Near East and Africa.

458. **Wind Instrument Literature.** 3 hours.

A survey of the solo, sonata, and ensemble music composed for wind instruments, from the Baroque period to the present.

462. **Modern Music.** 5 hours.

A literature course illustrating modern trends in music from Schoenberg, Stravinsky, Hindemith, Bartok, and others.

496H, 497H, 498H. **Directed Reading and/or Projects.** 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading, or projects under the direction of a project director.

499H. **Honors Thesis.** 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

Music Education

(For other courses, see "Music Education," College of Education.)

240 through 244. **Basic principles and methods of instrumental performance and pedagogy.**

240. Guitar Class. 1 hour. Repeatable for maximum two hours credit.

241A. String Class (Violin and Viola). 1 hour. Repeatable for maximum two hours credit.

241B. String Class (Cello and Double Bass). 1 hour. Repeatable for maximum two hours credit.

242. Woodwind Class. 1-2 hours. Repeatable for maximum two hours credit.

243. Brass Class. 1-2 hours. Repeatable for maximum two hours credit.

244. Percussion Class. 1 hour. Repeatable for maximum two hours credit.

245ABCDEFJGJK. Voice Class. 1 hour each.
Basic principles and methods of voice production and their application to glee clubs and choruses.

245N. Voice Class for the Non-Music Major. 1 hour. Repeatable for maximum 2 hours credit.
Basic principles and methods of voice production for the non-music major.

246ABCDEFJGJK. Piano Class. 1 hour each.
A sequence for music majors using the piano as a secondary instrument to develop expressive performance through conceptual analysis and pianistic skills.

247. Private Applied Teaching. 1 hour. Repeatable for maximum two hours credit.
Prerequisite: MUS 110.

Methods of teaching elementary and intermediate level students individually by voice and instrument majors under faculty supervision.

248. Class Applied Teaching. 1 hour. Repeatable for maximum three hours credit.
Prerequisite: MUS 110.

Methods of teaching elementary and intermediate level students in class approaches to piano and other selected areas by music majors under faculty supervision.

303. Music Skills and Fundamentals for Elementary School Teachers. 3 hours.

For education majors only. Introduction to the basic skills and fundamentals of music for the elementary classroom teacher. Meets five times a week.

305. Music Methods and Materials for Early Childhood Teachers. 3 hours.

Prerequisite: MUS 303.
Study of music teaching techniques, methods and materials for the early childhood teacher.

312. Music for Elementary Grades. 5 hours.

Prerequisite: MUS 309, admission to teacher education, and five hours of educational psychology.
Methods for music majors.

313. Music in Junior and Senior High Schools. 5 hours.

Prerequisite: MUS 309, admission to teacher education, and five hours of educational psychology.
Methods for music majors.

345P. Vocal Pedagogy. 1 hour.

Prerequisite: MUS 282C.
The course is designed to explore the methods and materials available for the prospective teacher of singing.

361. Elementary Conducting. 3 hours.

Basic principles, techniques, and methods of conducting and interpretation.

362. Choral Conducting. 3 hours.

Prerequisite: MUS 361.
Rehearsal, interpretive and conducting techniques, and methods for choral organizations.

363. Band Conducting. 3 hours.

Prerequisite: MUS 361.
Rehearsal, interpretive and conducting techniques, and methods for band organizations.

364. Orchestral Conducting. 3 hours.

Prerequisite: MUS 361.
Rehearsal, interpretive and conducting techniques, and methods for orchestral organizations.

400. Special Problems in Music. 1-10 hours.

Repeatable for maximum 10 hours credit.
Prerequisite: Permission of school.
Selected students are permitted to secure specialized training appropriate to the needs of the individual. Projects may involve the study and analysis of music and problems related to music, as approved by the department.

405. The Music Business. 3 hours.

A structural analysis of the business aspects of pop/rock and classical music, including performance, recording, publishing, funding, retailing, education, and management.

417. Popular Songwriting. 4 hours.

Prerequisite: MUS 110.
The creative process of songwriting in history and practice examined in addition to a survey of copyright law and the business aspects of the profession. Writing and analysis of pop songs.

418. The History and Analysis of Rock Music.

3 hours.
Rock music is traced from its roots to the present through its historical, socio-cultural, musical, technical, and economic development.

512. Advanced Techniques for Teaching Music in the Elementary School. 3 hours.

Prerequisite: MUS 312.
Course includes: (1) formulation of behavioral objectives for elementary school music; (2) new materials and methods for teaching elementary music; (3) the conceptual structure of music as it relates to the activities of the elementary music class; (4) problems of supervision; and (5) evaluation of student progress.

526. Marching Band Techniques and Methods.

3 hours.
Prerequisite: Permission of department.
Methods and techniques for organizing and training marching bands. Planning music, drills, formations, and shows.

Music

527. Computer-Assisted Instruction in Music.

3 hours.

Prerequisite: MUS 212 or equivalent.

Provides general background in computer-assisted instruction as a continuation of pedagogical techniques in music. Also provides practical experience in designing, programming, and testing CAI music lessons on the University of Georgia's CYBER 6400 computer or on microcomputers such as the PET 2001-8 or Apple II.

534. Choral Music Material.

3 hours.

Prerequisite: MUS 312 and 313.

Study and evaluation of music literature available for use in public school at all levels of instruction; research in various media and schools of composition which can be adapted for school use.

535. Instrumental Music Material.

3 hours.

Prerequisite: MUS 312 and 313.

Evaluation of materials available at all levels of instruction for band, orchestra and chamber music; research in materials of various media and schools of composition which can be adapted for school use.

538. Advanced Conducting.

3 hours.

Prerequisite: MUS 362, 363, or 364.

An intensive study of choral and instrumental conducting methods and techniques with application in laboratory sessions.

547. Music for Exceptional Children.

5 hours.

Prerequisite: MUS 303 or SPE 300.

This course is designed to prepare teachers of exceptional children to teach music in special classrooms or in settings where exceptional children are integrated into the regular music classes.

551. Instrumental Techniques.

2-6 hours. Repeatable for maximum 6 hours credit.

An advanced study of the performance and teaching methods and techniques of wind, string, and percussion instruments.

562. Jazz Piano Improvisation Class.

3 hours.

Prerequisite: MUS 246F.

Application of skills and techniques in keyboard jazz playing based upon a knowledge of modern-popular harmonic and notational practices.

Music Therapy

540. Principles of Music Therapy I.

3 hours.

A study of music as human behavior, and its use with the handicapped and those suffering behavioral disorders.

541. Principles of Music Therapy II.

3 hours.

Prerequisite: MUS 540.

A study of the functions of the music therapist with emphasis on the use of music in a therapeutic environment.

542. Psychological Foundations of Music I.

3 hours.

A study of the acoustical and psychological aspects of music with emphasis upon problems of perception, experimental aesthetics, musical function, measurement and diagnosis of musical ability. The related literature of experimental investigation will be reviewed.

543. Psychological Foundations of Music II.

3 hours.

Prerequisite: MUS 542.

A laboratory and research course emphasizing acoustical and psychological aspects of music perception, experimental aesthetics, musical function, and measurement and diagnosis of musical ability.

544. The Influence of Music on Behavior.

5 hours.

Prerequisite: PSY 423.

A study of the various physiological effects of music. The place of functional music in music education. Investigation of effective media and musical patterns. The relation of music to health. Music in industry.

545. Clinical Experience.

3 hours.

Prerequisite: Completion of junior year in Bachelor of Music with major in music therapy.

Three months work as a general aide in an approved psychiatric hospital for practical clinical experience.

546. Music in Recreation.

3 hours.

Experiences in elementary and secondary methods of teaching music from the perspectives of social and recreational instruments.

Jazz Studies

291G. Jazz Ensemble with Improvisation Laboratory.

1-6 hours; 1 hour per quarter.

491G. Jazz Ensemble with Improvisation Laboratory.

1-6 hours; 1 hour per quarter. Repeatable for maximum 6 hours credit.

Applied Music

The following courses are offered primarily for music majors, but a limited number of non-majors may be accepted when schedules permit. All music students should expect to participate in weekly seminars in their

major performance media, and to attend recitals and concerts. Before registering for an applied music course, students must pass a qualifying audition on their instrument or voice. The one hour courses in applied music consist of one 25-minute private lesson per week. The two hour, three hour, four hour, and five hour courses consist of one 50-minute lesson or two 25-minute lessons per week.

181ABC. Applied Music. 1 hour each. Repeatable for maximum 45 hours credit.

182ABC. Applied Music. 2 hours each. Repeatable for maximum 45 hours credit.

281ABC. Applied Music. 1 hour each. Repeatable for maximum 45 hours credit.
Prerequisite: MUS 181C.

282ABC. Applied Music. 2 hours each. Repeatable for maximum 45 hours credit.
Prerequisite: MUS 182C.

283ABC. Applied Music. 3 hours each. Repeatable for maximum 45 hours credit.

381ABC. Applied Music. 1 hour each. Repeatable for maximum 45 hours credit.
Prerequisite: MUS 281C.

382ABC. Applied Music. 2 hours each. Repeatable for maximum 45 hours credit.
Prerequisite: MUS 282C.

383ABC. Applied Music. 3 hours each. Repeatable for maximum 45 hours credit.
Prerequisite: MUS 283C.

385ABC. Applied Music. 5 hours each. Repeatable for maximum 45 hours credit.
Junior recital for performance majors and senior recital for voice and composition majors in third quarter.

394. Composition: Junior Year. 1-4 hours.
Prerequisite: MUS 214.
A course in the techniques of musical composition, focusing on writing music for one to four parts.

481ABC. Applied Music. 1 hour each. Repeatable for maximum 45 hours credit.
Prerequisite: MUS 381C.

482ABC. Applied Music. 2 hours each. Repeatable for maximum 45 hours credit.
Prerequisite: MUS 382C.
Music education students: senior recital in the second quarter. Music therapy students: senior recital in the third quarter.

483AB. Applied Music. 3 hours each. Repeatable for maximum 45 hours credit.
Prerequisite: MUS 383C.
Senior recital for B.F.A. students in third quarter.

485ABC. Applied Music. 5 hours each. Repeatable for maximum 45 hours credit.
Prerequisite: MUS 385C. Senior recital in third quarter.

493. Electronic Music Composition. 1-4 hours.
Prerequisite: MUS 479.
A course in the equipment and advanced technique of composition in the electronic medium. Tape technique, analog, and digital synthesis are involved.

494. Composition: Senior Year. 1-4 hours.
Prerequisite: MUS 394 (12 hours).
An advanced course in the techniques of musical composition, focusing on writing music in large forms.

Performing Organizations and Ensembles

288. Men's Glee Club. 1 hour. Repeatable for maximum 18 hours credit.
Concentration on choral literature for men's voices from all periods of music history, including sacred, secular, folk, and popular music. Open to all University students who can qualify by audition. Three hours per week.

289. Women's Glee Club. 1 hour. Repeatable for maximum 18 hours credit.
Concentration on choral literature for women's voices from all periods of music history, including sacred, secular, folk, and popular music. Open to all University students who can qualify by audition. Three hours per week.

290. Concert Band. 1 hour. Three periods per week. Repeatable for maximum 30 hours credit.
A concert band open to all students who have had previous experience in instrumental music. (Offered Fall, Winter, and Spring quarters.)

295. Afro-American Choral Ensemble. 1 hour. Repeatable for maximum 4 hours credit.
A choral ensemble performing traditional and contemporary Black Gospel, Spiritual, and popular music, and music by contemporary Black composers.

387. University Symphony Orchestra. 1 hour. Repeatable for maximum 18 hours credit.
Open to students who can qualify. Four hours per week.

388. University Chorus. 1 hour. Repeatable for maximum 15 hours credit. Three hours per week. Concentration on choral literature for mixed voices from all periods of music history, including both sacred and secular music. Open to all students.

389. Concert Choir. 1 hour. Repeatable for maximum 18 hours credit.

Concentration on choral literature suitable to the medium-sized choral ensemble. Admission by audition only. Four hours per week.

390. University Band. 1 hour. Repeatable for maximum 30 hours credit.

Open to students who can qualify. Four hours per week.

491ABCDEF. Chamber Music Ensemble. 1 hour per quarter. Repeatable for maximum 45 hours credit.

A. Strings. B. Piano. C. Brasses. D. Woodwinds. E. Percussion. F. Opera Workshop.

Open to juniors and seniors.

491K. Contemporary Chamber Ensemble. 1 hour. Repeatable for maximum 15 hours credit.

Concentration on 20th-century literature for small ensembles, including aleatoric and electronic literature. Open to students who can qualify.

492AB. Advanced Accompanying. 1 hour per quarter for each suffix. Repeatable for maximum 15 hours credit.

Prerequisite: Permission of school.

Practical experience in chamber music and accompanying.

590. Symphonic Wind Ensemble. 1 hour. Repeatable for maximum 24 hours credit. Four hours per week.

Prerequisite: Admission by audition.

Mixed woodwind-brass-percussion ensemble for the study and performance of wind chamber compositions with concentration on advanced scores, including a substantial emphasis on contemporary music. Professional level experience.

591. Collegium Musicum. 1 hour. Repeatable for maximum 24 hours credit.

A study of the interrelationship of music history, theory, and performance.

Philosophy (PHY)

Contact Person: Dr. Donald Nute, 542-2823

100. Survey of Philosophy. 5 hours.

Not open to students with credit in PHY 101, 214H, or 215H.

An introduction to philosophy through its history.

101. Introduction to Philosophical Issues. 5 hours.

Not open to students with credit in PHY 100, 214H, or 215H.

A critical exploration of such topics as knowledge and belief, God and the problem of evil, freedom and determinism, the right and the good, language and meaning, mind and body, appearance and reality, and man and the world.

102. Logic and Critical Thinking. 5 hours.

Not open to students with credit in PHY 202H.

Introduction to the principles and standards for thinking and communicating clearly and effectively. Topics include: theories of meaning, uses of language, common causes of confusion and error in thought and argument, and evaluation of arguments.

110. Symbolic Logic. 5 hours.

Not open to students with credit in PHY 210H.

A study of the methods and principles used to distinguish correct from incorrect deductive arguments, with emphasis upon contemporary techniques of analysis.

202H. Logic and Critical Thinking (Honors). 5 hours.

Not open to students with credit in PHY 102.

Introduction to the principles and standards for thinking and communicating clearly and effectively for the Honors-level student and selected philosophy students. Topics include: theories of meaning, uses of language, common causes of confusion and error in thought and argument, and evaluation of arguments.

203. Philosophy, Science, and Nature. 5 hours.

An introduction to the philosophy of science and the philosophy of nature, including such issues as standards governing scientific reasoning and the philosophical implications of contemporary and past scientific theories.

205. Introduction to Ethics. 5 hours.

Not open to students with credit in PHY 305 or 205H or 315H.

A study of the major philosophical positions concerning right and wrong, ethical values, and moral responsibility. The relevance of moral philosophy to current issues of personal and social ethics will be discussed.

205H. Introduction to Ethics (Honors). 5 hours.

Not open to students with credit in PHY 205, 305 or 315H.

Honors equivalent of PHY 205.

210H. Symbolic Logic (Honors). 5 hours.
Not open to students with credit in PHY 110.
Honors equivalent to PHY 110.

214H. Survey of Philosophy (Honors). 5 hours.
Not open to students with credit in PHY 100, 101,
or 215H.
An introduction to philosophy through its history.

215H. Introduction to Philosophical Issues (Honors). 5 hours.
Not open to students with credit in PHY 100, 101,
or 214H.

A study of the fundamental questions of philosophy and the answers given to those questions by the major schools of philosophical thought.

300. Classics of Ancient Western Philosophy. 5 hours.
Prerequisite: At least one of the following: PHY 100, 101, 203, 214H, 215H.
Development of Western philosophy from its beginning through the Hellenistic period.

301. Classics of Modern Western Philosophy. 5 hours.
Prerequisite: At least one of the following: PHY 100, 101, 203, 214H, 215H.
Development of Western philosophy from the Renaissance to Immanuel Kant.

302. Existentialism. 5 hours.
Prerequisite: At least one of the following: PHY 100, 101, 203, 205, 205H, 214H, or 215H.
An examination of European existentialism, as initiated by Kierkegaard and developed in this century by such figures as Sartre, Camus, Marcel, Jaspers, and Buber.

303. Kant and Post-Kantian Philosophy. 5 hours.
Prerequisite: At least one of the following: PHY 100, 101, 203, 214H, 215H.
Kant, his immediate successors, and the philosophers of the 19th century.

310. Logic and Model Theory. 5 hours.
Prerequisite: PHY 110 or 210H.
Proof theory and semantics for formalized languages, including proofs and applications of theorems relating syntax and semantics.

324. Feminist Philosophy. 5 hours.
At least one of the following: PHY 100, 101, 203, 205, 205H, 214H, or 215H.
Philosophical investigation and evaluation of feminist philosophy, examining such approaches as liberal feminism, socialist feminism, radical feminism, and ecofeminism, and other feminist approaches.

361. Theory of Knowledge. 5 hours.
Prerequisite: At least one of the following: PHY 100, 101, 203, 214H, 215H.

Basic problems and issues in the theory of knowledge, including truth, rationality, and the acquisition and justification of belief.

400. Plato. 5 hours.
Prerequisite: PHY 300.
A course in the major writings of Plato.

401. Aristotle. 5 hours.
Prerequisite: PHY 300.
A course in the major writings of Aristotle.

404. Classical American Philosophers. 5 hours.
Prerequisite: PHY 301 or 303.
A study of the major writings of C.S. Pierce, William James, and John Dewey and their influence on the development of contemporary philosophy.

405. Ethical Theory. 5 hours.
Prerequisite: PHY 205.
A study of the nature and justification of fundamental ethical concepts and moral principles.

406. Social and Political Philosophy. 5 hours.
Prerequisite: PHY 205.
Survey of such topics as the nature and function of society and the state, human freedom and rights, the bases of social and political obligations.

407. Continental Rationalism. 5 hours.
Prerequisite: PHY 301.
A critical study of Continental Rationalism, focusing on evaluating the principal writings of Descartes, Spinoza, and Leibniz.

408. (REL) Philosophy of Religion. 5 hours.
Prerequisite: At least one of the following: PHY 100, 101, 203, 205, 205H, 214H, or 215H.
A critical study concerning the meaning, nature and validity of religious discourse, beliefs, and practices, involving theories concerning the existence and nature of God and man's relation to God.

409. British Empiricism. 5 hours.
Prerequisite: PHY 301.
A critical study of British Empiricism, focusing on evaluating the principal writings of Locke, Berkeley, and Hume.

410. Kant and German Idealism. 5 hours.
Prerequisite: PHY 303.
The course focuses on a selection of the writings of Kant, Hegel, and the German Idealists.

411. Aesthetics. 5 hours.
Prerequisite: At least one of the following: PHY 100, 101, 203, 205, 205H, 214H, or 215H.
A critical survey of philosophical theories about the arts (for example, painting, literature, and music). Attention will be given to such topics as the function of art in society and the problem of justifying aesthetic judgments.

Philosophy

412. Contemporary Continental Tradition. 5 hours.

Prerequisite: PHY 300 or 301 or 302 or 303.

The course will focus on a selection of writings from the early phenomenologists, existentialists, contemporary Marxists and their successors; such as Husserl, Heidegger, Merleau-Ponty, Camus, Sartre, Marcuse and Habermas.

413. Contemporary Analytic Tradition. 5 hours.

Prerequisite: PHY 301 or 303.

The course will trace the development of contemporary analytical philosophy from the turn of the century to the present. Readings will be from philosophers such as Russell, Moore, Wittgenstein, Carnap, Ryle, Austin, Quine and Strawson.

414. (LIN) Introduction to Philosophy of Language. 5 hours.

Prerequisite: PHY 100 or 101 or 203 or 202H and 102 or 110 or 202H or 210H.

A critical study of topics such as formal and ordinary languages, meaning, reference, truth, definition, analyticity, ambiguity, metaphor, symbolism, and the uses of language.

415. Medieval Philosophy. 5 hours.

Prerequisite: PHY 300.

A course in the major figures of the medieval period in western philosophy, including Augustine and Aquinas.

416. Philosophy of Law. 5 hours.

Prerequisite: 10 hours of philosophy, political science or law.

A study of the nature and function of law with emphasis on the interpretation and application of the law in the judicial process. Readings in classical and contemporary schools of the philosophy of law.

418. (ETH) Environmental Ethics. 5 hours.

Prerequisite: PHY 205.

A critical evaluation of major professional and nonprofessional writings in the field of environmental ethics.

451. (ETH) Technology and Values. 5 hours.

Prerequisite: PHY 205.

A study of technology in its broadest human context, with emphasis on the mutual influence between means and ends and the impact of technology on shaping the beliefs and attitudes of a civilization. Includes alternative assessments of technology and illustrates with specific crucial issues of our time.

455. (CS) Artificial Intelligence. 5 hours.

See CS 455.

458. History of Natural Science. 5 hours.

Prerequisite: At least one of the following: PHY 100, 101, 203, 214H, or 215H.

An examination of some major physical, biological, and cosmological theories and their philosophical import, 6th century B.C. to the present.

459. Philosophy of Natural Science. 5 hours.

Prerequisite: At least one of the following: PHY 100, 101, 203, 214H, or 215H.

The investigation of such topics as the logical structure of scientific hypotheses and/or laws, and the problems of their meaning and confirmation; the general patterns of scientific explanation; and the ideals of prediction and control.

460. Metaphysics. 5 hours.

Prerequisite: PHY 300 or 301 or 303.

The problems of metaphysics and their relationship to other areas of philosophy.

461. Epistemology. 5 hours.

Prerequisite: PHY 361.

The problems of epistemology and their relationship to other areas of philosophy.

471. Philosophy of Social Science. 5 hours.

Prerequisite: At least one of the following: PHY 100, 101, 203, 205, 205H, 214H, or 215H.

A study of the methods and problems of inductive reasoning, including the nature of probable inference, techniques of verification, and the structure of scientific explanation, with special reference to the social sciences.

474. Philosophy of Mind. 5 hours.

Prerequisite: PHY 300 or 301 or 303 or 361.

A critical study of the philosophical implications of alternative approaches to psychology such as the behavioral, the psychoanalytic, the phenomenological, with particular attention to such problematic areas as the nature and validation of psychological concepts, law, and theories, and knowledge of other minds.

490. Problems in Philosophy. 5-15 hours. Repeatable for maximum 15 hours credit.

Prerequisite: 15 hours of courses in philosophy numbered 300 or higher and permission of department.

Investigation of a philosophical problem or group of related problems with emphasis upon extensive reading in primary sources. Selection of topic(s) will vary with instructor and interests of students.

495. Tutorial in Philosophy. 5 hours. Repeatable for maximum 15 hours credit.

Prerequisite: 15 hours of courses in philosophy numbered 300 or higher and permission of department.

Reading and independent research on a specified topic beyond normal course offerings and closely supervised by the tutor. Application should be made in advance of registration to the Head of the Department. Open only to students prepared to pursue advanced material.

496H. Directed Readings and/or Projects. 5 hours. Repeatable for maximum 15 hours credit. Prerequisite: 15 hours of courses in philosophy numbered 300 or higher and permission of department.

This course affords Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

Prerequisite: 15 hours of courses in philosophy numbered 300 or higher and permission of department.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

Physics and Astronomy

Contact Person: Dr. Coates R. Johnson, 542-2485 (Physics);

Dr. J. Scott Shaw, 542-2485 (Physics and Astronomy)

Astronomy (AST)

107-107L. Introduction to Astronomy. 5 hours. Four hours of lecture and two hours of lab. Students may receive credit only for AST 107-107L and 108-108L or AST 291 or AST 297H-297L.

Astronomy from early ideas of the cosmos to modern observational techniques. The solar system: planets, satellites, asteroids, etc., with emphasis on recent space program findings.

108-108L. Introduction to Astronomy. 5 hours. Four hours of lecture and two hours of lab. Students may receive credit only for AST 107-107L and 108-108L or AST 291 or AST 297H-297L.

Prerequisite: AST 107-107L.

The study of the sun and stars, their physical properties and evolution, interstellar material, star clusters, our galaxy and other galaxies, quasars, the universe, its beginning and history.

291. Descriptive Astronomy. 5 hours. Students may receive credit only for AST 107-107L and 108-108L or AST 291 or AST 297H-297L.

A survey of the planetary system followed by a more extensive discussion of stars, nebulae, galactic and stellar structure and evolution, exterior galaxies and cosmology based on modern astrophysical theories and techniques.

297H-297L. Astronomy Survey (Honors). 5 hours. Four hours of lecture and two hours of lab. Students may receive credit only for AST 107-107L and 108-108L or AST 291 or AST 297H. Honors equivalent to AST 291 but with more emphasis placed on the contribution of astronomy to scientific thought, past and present.

392. Introduction to Astrophysics. 5 hours. Prerequisite: AST 108-108L or 291 or 297H-297L and PCS 229-229L or 239-239L.

Quantitative analysis of stellar spectra and atmospheres, binaries and variables, stellar birth, evolution, and death; the structure and dynamics of the Milky Way; galaxies and cosmology. Offered alternate years.

393. Introduction to Astronomical Observations and Techniques. 5 hours.

Prerequisite: AST 108-108L or 291 or 297H-297L or permission of department.

An introduction to the use of the telescope, including small and moderate sized reflectors. Lab activities include visual, photographic and photoelectric observations of planets, stars, nebulae, galactic and extragalactic objects. Offered alternate years.

396. Topics in Astronomy. 5 hours.

Prerequisite: AST 108-108L or 291 or 297H-297L. Discussion of contemporary developments in observational astronomy, both space-borne and ground-based, and in theoretical astrophysics and their contribution to recent advances in such topics as stars, pulsars, black holes, galaxies, quasars, and cosmological theories. Offered alternate years.

466. Astronomical Observations. 3-10 hours. Repeatable for maximum 10 hours credit. No more than 5 hours credit per quarter may be earned.

Prerequisite: AST 393.

Observations using modern techniques and equipment to investigate astronomical phenomena.

492. Astrophysics. 5 hours.

Prerequisite: AST 392.

Corequisite: PCS 420.

Modern astrophysics. Quantitative insights into stellar structure and evolution, the dynamics of interstellar matter, the structure and evolution of galaxies, and the large-scale structure of the universe. Offered alternate years.

495. Introduction to Space Astronomy. 4 hours. Prerequisite: PCS 229-229L or 239-239L and 5 hours of 300-level astronomy.

Concepts, techniques, skills, and resources needed to plan, obtain, reduce, and interpret space observations of astronomical objects.

496H, 497H, 498H. Directed Reading and/or Projects. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

591. Astronomy for Teachers. 5 hours.

Not open to students with credit in AST 107-107L, 108-108L, 291 or 297H-297L.

A survey of the planetary system followed by a more extensive discussion of galactic and stellar structure and evolution, exterior galaxies and cosmology based on modern astrophysical theories and techniques.

Physics (PCS)

101. Physical Science. 5 hours.

A survey to give an elementary knowledge of fundamental laws and concepts in physics and astronomy and to give an understanding of how the scientific method as exemplified by physical science has contributed to man's thinking. No credit will be allowed to students with prior credit in any physics course.

127-127L. Introductory Physics - Mechanics. 5 hours. Four hours of recitation and two hours of lab.

Prerequisite: MAT 109 or 116.

An introductory course that deals with the fundamental laws of mechanics.

128-128L. Introductory Physics - Thermodynamics, Electricity and Magnetism. 5 hours.

Four hours of recitation and two hours of lab.

Prerequisite: PCS 127-127L.

An introductory course that deals with the fundamental laws of thermodynamics, electricity and magnetism.

137-137L. Introductory Physics for Science and Engineering Students - Mechanics. 5 hours.

Four hours of recitation and three hours of lab.

No credit will be allowed for PCS 137-137L if credit is shown for PCS 127-127L.

Prerequisite: MAT 253.

Corequisite: MAT 254.

Fundamental laws of mechanics.

138-138L. Introductory Physics for Science and Engineering Students - Thermodynamics, Electricity and Magnetism. 5 hours.

Four hours of recitation and three hours of lab.

No credit will be allowed for PCS 138-138L if credit is shown for PCS 128-128L.

Prerequisite: PCS 137-137L.

Fundamental laws of thermodynamics, electricity and magnetism.

199. Introductory Physics Seminar. 1 hour. Repeatable for maximum 2 hours credit.

Topics in Physics and Astronomy presented by faculty and visitors to the Department. Topics will vary from year to year, and several topics will be considered weekly.

229-229L. Introductory Physics - Optics and Modern Physics. 5 hours.

Four hours of recitation and two hours of lab.

Prerequisite: PCS 128-128L.

An introductory course in wave motion, optics, and modern physics.

239-239L. Introductory Physics for Science and Engineering Students - Light and Modern Physics. 5 hours.

Four hours of recitation and three hours of lab.

No credit will be allowed for PCS 239-239L if credit is shown for PCS 229-229L.

Prerequisite: PCS 138-138L.

Wave motion, light, and quantum physics. Atomic, molecular, and nuclear properties.

332-332L. Introductory Electronics. 5 hours.

Three hours of recitation and six hours of lab.

Prerequisite: PCS 229-229L or 239-239L and MAT 255.

Electrical circuits and solid state electronics. Topics include: DC and AC circuit analysis, diode and transistor circuits, integrated circuits and digital electronics.

333-333L. Modern Optics. 5 hours.

Four hours of recitation and three hours of lab.

Prerequisite: PCS 229-229L or 239-239L and MAT 255.

Study of the properties of light with emphasis on physical optics: diffraction, polarization, lasers, holography.

399. Directed Study. 1-5 hours, maximum credit 5 hours.

Prerequisite: PCS 229-229L or 239-239L and permission of department.

This course provides students with the opportunity for intensive study, with one or more faculty members, of topics not normally taught in other courses.

400. Physics Seminar. 1 hour. Repeatable for maximum 6 hours credit.

Discussion of contemporary topics in physics.

404. Theoretical Mechanics. 4 hours.

Prerequisite: PCS 239-239L or 229-229L and MAT 358.

Statics, kinematics, and dynamics of a particle and of systems of particles.

420. Electricity and Magnetism. 4 hours.
Prerequisite: PCS 239-239L or 229-229L and 404.
Experimental foundations; development of Maxwell's equations.

430. Thermodynamics and Kinetic Theory. 4 hours.
Prerequisite: PCS 239-239L or 229-229L and MAT 358.
The laws of thermodynamics and their application to physical systems. Kinetic theory.

440. Classical Theoretical Physics. 4 hours.
Prerequisite: PCS 404 and 420.
Methods of problem solving and formal developments in mechanics including the formulations of Lagrange and Hamilton. Applications of Maxwell's equations.

450. Atomic Physics and Quantum Mechanics I. 4 hours.
Prerequisite: PCS 404.
Development of wave mechanics with applications to atomic structure.

451. Atomic Physics and Quantum Mechanics II. 4 hours.
Prerequisite: PCS 450.
Development of wave mechanics with applications to atomic and molecular structure.

465. Experimental Physics. 3-10 hours.
Prerequisite: PCS 332-332L.
Lab course in which the student uses modern experimental techniques to investigate phenomena in atomic, molecular, nuclear, and solid state physics.

472. Nuclear Structure. 4 hours.
Prerequisite: PCS 450.
Introduction to the theory of nuclear structure as it has been inferred from quantum mechanical considerations and the study of experimental data on radioactivity and nuclear reactions.

482. Condensed Matter Physics. 4 hours.
Prerequisite: PCS 430 and 450.
Elastic, thermal, electrical, magnetic and optical properties of condensed matter. Covers such topics as: crystal structure, symmetry operators, X-ray and neutron diffraction, lattice vibrations, thermal properties, electrons in metals and semiconductors, dielectric and optical properties, magnetism and magnetic resonance, superconductivity and quantum fluids.

496H, 497H, 498H. Directed Reading and/or Projects. 5 hours each.
These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.
This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

Political Science (POL)

Contact Person: Undergraduate Coordinator, 542-2057

101. American Government. 5 hours.
An introductory course covering the essential facts of federal, state, and local governments in the United States. Prerequisite for advanced courses in political science. Also see pages on Examinations on the Constitutions in the Academic Information section.

105H. American Government (Honors). 5 hours.
Not open to students with credit in POL 101.
An introductory course which emphasizes United States government and politics and introduces the student to source materials of American political theory and American political institutions. Also see pages on Examinations on the Constitutions in the Academic Information section.

Theory and Method

300. American Political Thought. 5 hours.
Prerequisite: POL 101 or equivalent.
An introduction to the ideas about human nature and government that have shaped political practice and debate in America. Attention will be given to the principles of the Declaration of Independence and the Constitution, as developed by Jefferson, Madison, and Hamilton, and to interpretation of these principles by such statesmen as Lincoln and Wilson. Other topics include black political thought and current liberal-conservative debate.

301H. Issues in Political Philosophy (Honors). 5 hours.
A study of basic questions in political philosophy: e.g., purposes of government, forms of government, relationships of government and the individual, and the limits of political authority.

401. Political Philosophy: Plato to Machiavelli. 5 hours.
Prerequisite: POL 101 or equivalent.
Analysis of selected works of such writers as Plato, Aristotle, Cicero, St. Augustine, and St. Thomas, concluding with the rejection of classical thought by Machiavelli.

402. Political Philosophy: Hobbes to Nietzsche. 5 hours.
Prerequisite: POL 101 or equivalent.

A study of the development of modern political philosophy through the analysis of selected works of such writers as Hobbes, Locke, Hume, Rousseau, Mill, Marx, and Nietzsche.

403. Contemporary Political Thought. 5 hours.
Prerequisite: POL 101 or equivalent.

A study of major issues in 20th century political thought. Attention will be given also to the theoretical roots of major contemporary ideologies.

407. Theories of Political Choice. 5 hours.
Prerequisite: POL 101 or equivalent.

Analysis and evaluation of methods for individual choice in the face of political alternatives. Emphasis will be given to the role of individual decision-making in orienting political behavior and determining how and when political actors come into conflict or behave cooperatively.

408. Problems in Democratic Theory. 5 hours.
Prerequisite: POL 101 or equivalent.

A study of major problems that arise in theoretical discussions of democracy such as the nature of democratic government, its purposes, its justification, its limitations and the conditions necessary for its maintenance. Also see pages on Examinations on the Constitutions in the Academic Information section.

409. African American Political Thought. 5 hours.

Prerequisite: POL 101.

Core concepts of African American political thought in the 19th and 20th centuries, ranging from early emigrationist sentiments to the nationalist exhortations of contemporary African American youth culture, including African American feminist and socialist thought.

470. Research Methods in Political Science. 5 hours.

Prerequisite: POL 101 or equivalent.

Introduction to the qualitative and quantitative techniques for measurement, analysis, and inference of political data. Recommended for majors, especially those looking forward to graduate school.

American Studies

340. Introduction to Public Administration. 5 hours.

Prerequisite: POL 101 or equivalent.

Introduction to major issues of administration and public agencies, such as personnel, finance, administrative law, and the growth and significance of administrative legislation and adjudication.

380. Introduction to the Legal Process. 5 hours.
Prerequisite: POL 101 or equivalent.

An examination of the nature of law, legal reasoning and the structure and function of legal institu-

tions and the legal profession. Open to all undergraduates and recommended for those considering law as a career.

410. American Political Parties. 5 hours.

Prerequisite: POL 101 or equivalent.

A study of organized groups whose purpose is to influence or control government in the U.S. Particular emphasis will be placed on the structure and activities of the two major political parties. The future of the American Party system will be considered.

411. Electoral Behavior. 5 hours.

Prerequisite: POL 101 or equivalent.

An examination of the factors which contribute to electoral choice and the dynamics of voting in the American political system.

412. Government and the Mass Media. 5 hours.

Prerequisite: POL 101 or equivalent.

This course examines the impact of the mass media on American campaigns and elections, and on the exercise of political leadership. A general assessment of the beneficial and detrimental impacts of the mass media upon American democratic practices is also included.

413. Government and Interest Groups. 5 hours.

Prerequisite: POL 101 or equivalent.

A study of the major organized agrarian, labor, business, professional, and other special interest groups that regularly participate in the formation of public policy.

414. The Legislative Process. 5 hours.

Prerequisite: POL 101 or equivalent.

A study of the U.S. Congress with emphasis on recruitment and composition of leadership, procedures, and the role of parties and interest groups. Recent changes in the Congress will be examined in light of theories of representation.

415. The U.S. Presidency. 5 hours.

Prerequisite: POL 101 or equivalent.

An historical examination of the President of the United States. The President's constitutional position will be addressed, including theories of executive dominance and executive privilege. Attention will also be given to the President's attempts to control the executive branch, and presidential-congressional relations.

416. African American Politics. 5 hours.

Prerequisite: POL 101.

A comprehensive survey of African American political behavior. The theoretical underpinnings of political action will be explored by reading the works of selected African American authors. The electoral preferences of African Americans as well as the role of African Americans in such political institutions as legislatures, courts, execu-

tive agencies, and local governments will be examined.

419. Southern Politics. 5 hours.

Not open to students with credit in POL 310.

Prerequisite: POL 101.

Politics of individual states, emergence of the Republican Party, Black mobilization, consequences of reapportionment, and selected civil rights topics.

420. (AAM) African American Social Change. 5 hours.

See AAM 420.

443. Public Finance Administration. 5 hours.

Prerequisite: POL 101 or equivalent.

Activities involved in the collection, custody and expenditure of public revenue, such as the assessment and collection of taxes, public borrowing and debt administration, the preparation and enactment of the budget, financial accountability and the audit.

450. Problems in American Public Policy. 5 hours.

Not open to students with credit in POL 450H.

Prerequisite: POL 101.

Basic theories and practices of public policy making in the United States. Evaluation with case studies of effective and ineffective policy implementation.

450H. Problems in American Public Policy (Honors). 5 hours.

Not open to students with credit in POL 450.

Prerequisite: POL 101.

Basic theories and practices of public policy making in the United States. Evaluation with case studies of effective and ineffective policy implementation.

451B. Policy Analysis (Physical Resources). 5 hours.

Prerequisite: POL 101 or equivalent.

An analysis of major public policies and their impact on the political system and its environment. This course considers policies involving physical resources, such as energy, the environment, and technology.

461. Urban Politics. 5 hours.

Prerequisite: POL 101 or permission of department.

The study of local politics in the United States including the social and economic development of cities, local government structures and their effects, the participation of individuals and groups in urban politics, and major theoretical perspectives in urban research.

465. State Government. 5 hours.

Prerequisite: POL 101 or equivalent.

The politics of policy-making at the state level. An emphasis is placed on a comparative policy perspective with regionalism serving as a central focus for study. Various models and theories of state policy-making will be examined. Also see pages on Examinations on the Constitutions in the Academic Information section.

481H. Legal Process (Honors). 5 hours; repeatable for maximum 10 hours credit.

Prerequisite: POL 101 or 105H and upper division honors student.

In-depth analysis of selected major unresolved issues in legal process. Topics chosen by instructor. Term paper and extensive reading. Appropriate for "prelaw" students but open to all upper division honors students who understand the elementary structure and operation of the legal system.

482. American Constitutional Law I. 5 hours.

Prerequisite: POL 101 or equivalent.

A study of the origins of American constitutionalism and judicial review and the structure and practices of courts in interpreting the Constitution. Written paper and/or briefs. Also see pages on Examinations on the Constitutions in the Academic Information section.

483. American Constitutional Law II. 5 hours.

Prerequisite: POL 101 or equivalent.

The substantive constitutional law of the separation of powers, national and state regulatory powers, and the federal system; and the role of courts in public policy-making in these areas. Written paper and/or case briefs. Also see pages on Examinations on the Constitutions in the Academic Information section.

484. American Constitutional Law III. 5 hours.

Prerequisite: POL 101 or equivalent.

The substantive constitutional law of individual and minority group rights and liberties, and fair trial rights; and the role of the courts in public policy-making in these areas. Written paper and/or case briefs. Also see pages on Examinations on the Constitutions in the Academic Information section.

488. Judicial Behavior and Modern Jurisprudence. 5 hours.

Theoretical and empirical approaches to the study of the U.S. court systems as a part of the total political system.

Global Studies

213H. Introduction to Global Studies (Honors). 5 hours.

Not open to students with credit in POL 203 or 321.

Prerequisite: POL 101 or equivalent.
This course follows the outline of POL 321.

230. Introduction to Comparative Politics. 5 hours.

Prerequisite: POL 101 or equivalent.
An introduction to the structures and processes of various governments around the world. Attention focuses on countries in Western and Eastern Europe, Africa, Asia, and Latin America.

321. Introduction to Global Studies. 5 hours.
Not open to students with credit in POL 203.

Prerequisite: POL 101 or equivalent.
Introduction to practices and problems of international politics in global context, e.g., power, ideology, diplomacy, war, international organization and law, international economics, and the nature of independence in an interdependent world. Students apply concepts and principles in simulation of a contemporary global problem.

332H. Problems of Post-Communism (Honors). 5 hours.

Prerequisite: POL 101 or equivalent.
Utilizes a multi-disciplinary perspective to examine a host of domestic and international problems in selected post-communist states (e.g., Russia, Poland, and Yugoslavia).

421. International Organization. 5 hours.

Prerequisite: POL 101 or equivalent.
The origins and evolution of international organizations, with emphasis on the United Nations and the specialized agencies. Factors favoring and impeding their development. Their effect on political, economic, and social issues. Research using U.N. publications.

422. International Law. 5 hours.

Prerequisite: POL 101 or equivalent.
Readings, cases, lectures and research on the functioning of the legal structures in the international system with special emphasis on the relation between law and politics.

425. American Foreign Policy. 5 hours.

Prerequisite: POL 101 or equivalent.
An analysis of domestic and international sources and consequences of American foreign policy. Emphasis on the role of American institutions and processes in making policy on national security and interdependence issues. Paper is usually required.

426. International Conflict. 5 hours.

Prerequisite: POL 101 or equivalent.
Causes, consequences, and management of violence between countries. Analysis of principal theoretical viewpoints, e.g., human aggressiveness, elite aims and ambitions, misperceptions and accidents, imperialism, socioeconomic gaps, and systemic failure.

427. Politics of International Economic Relations. 5 hours.

Prerequisite: POL 101 or equivalent; ECN 107 recommended.
Examination of the political foundations in international economic relations in the contexts of West-West, East-West, and North-South relations. Topics include foreign investment, international monetary relations, trade issues, and economic sanctions.

429. United Nations Practicum. 5 hours; repeatable for maximum of 10 hours.

Prerequisite: POL 421 or previous participation in Model United Nations.
An analysis of issues coming before The United Nations Organization in the upcoming session from the standpoint of assigned countries, culminating in participation in The National Model United Nations in New York in early Spring. Research papers and practicum at United Nations Headquarters in New York.

431. Political Development. 5 hours.

Prerequisite: POL 101 or equivalent.
A comprehensive overview of the socio-political dynamics in the process of institutional development, industrialization, and modernization. An examination of explanatory and predictive factors affecting the quality of life in changing societies.

432. Russian and East European Politics. 5 hours.

Prerequisite: POL 101 or equivalent.
Domestic and international politics in Russia and selected East European states (e.g., Belarus and Ukraine).

433. Central and Southeastern European Politics. 5 hours.

Prerequisite: POL 101 or equivalent.
Domestic and international politics in selected central and southeastern European post-communist states (e.g., Poland, Hungary, Bulgaria).

434. Latin American Political Systems. 5 hours.

A comparative analysis of the political systems of Central and South America with emphasis on the concepts of political stability, conflict, revolution, economic development and modernization.

435. Western European Political Systems. 5 hours.

Prerequisite: POL 101 or equivalent.
Politics and process in Western European political systems. Emphasis will be focused on comparative analysis with examples drawn from the full range of European parliamentary democracies.

438. African Political Systems. 5 hours.

Prerequisite: POL 101 or equivalent.

A study of the social structure, political culture and political dynamics of Subsaharan African systems with emphasis on West Africa.

439. Far Eastern Political Systems. 5 hours.

Prerequisite: POL 101 or equivalent.

An interdisciplinary analysis of social, cultural, and political processes in three profoundly contrasting Far Eastern nations including China, Japan, and Korea. Both domestic and international issues will be examined.

440. (SOC/ANT) Socio-Political Ecology. 5 hours.

See SOC 440.

452. Contemporary Global Issues. 5 hours.

Not open to students with credit in POL 320.

Prerequisite: POL 101 or equivalent.

Selected issues from the areas of national security, economic welfare, and social justice as well as various policy responses in the global community. Emphasis on using international sources for writing research papers and future problem solving.

493. Seminar in Global Studies. 5 hours.

Prerequisite: POL 101 or equivalent.

A senior seminar designed to analyze selected global problems such as national security, economic welfare, and social justice, and to examine the responses of different nation-states to such problems.

Special Courses

304. Criminal Justice Administration. 5 hours.

Not open to students with credit in POL 204 or 314H.

Prerequisite: POL 101 or equivalent.

An analysis of the actors and agencies in the administration of criminal law. The survey includes the political and legal ramifications of processes critical in the application of the criminal sanction: arrest, bail, prosecution, conviction, sentencing, and corrections.

314H. Criminal Justice and Society. 5 hours.

Not open to students with credit in POL 204 or 304.

Prerequisite: POL 101 or 105H.

An analysis of the actors and agencies responsible for the administration of criminal law. The course is focused on the relationship between criminal justice and broader social and legal systems with particular attention to the processes of arrest, bail, prosecution, conviction, sentencing, and corrections.

350. Government Internship. 5-10 hours. Re-

peatable for maximum 10 hours credit.

Prerequisite: POL 101 or equivalent.

Specifically designed for the academic portion of government internship programs. It will variously consist of seminars, assigned readings, and research assignments, and will supplement the practical experience gained by interns in the performance of their duties in government agencies. Students are required to have taken an advanced course in the area of their internship. Information on various government internships is available in the Department of Political Science.

370. (SOC) Social Science Research Design. 5 hours.

Prerequisite: POL 304.

An introduction to fundamental principles of social science research and to related research design. Structured to develop students' abilities to think clearly, critically, and logically about social science issues through the scientific evaluation of empirical evidence and arguments.

448. Law Enforcement Administration. 5 hours.

Prerequisite: POL 304.

An examination of the function of police agencies in American society, and a critical evaluation of administrative practices in police organizations.

486. Criminal Law. 5 hours.

Prerequisite: POL 304.

Study and analysis of substantive criminal law in the United States. Attention is directed to state and federal statutes and related cases with particular focus on the types and classifications of crime, the elements of crime, and related justifications and excuses to criminal liability.

487. Criminal Procedure. 5 hours.

Prerequisite: POL 304.

An introduction to the substantive law of major crimes against person and property and to the procedures governing arrest, trial, and administration of criminal sanctions.

496. Directed Reading or Projects. 5-10 hours.

Repeatable for maximum 10 hours credit.

Prerequisite: POL 101 or equivalent and 15 additional hours of political science.

Affords superior students who are not in the honors program the opportunity to engage in individual study, reading or projects, under the direction of a project director.

496H, 497H, 498H. Directed Reading and/or Projects. 5 hours each.

Prerequisite: POL 101 or equivalent.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

Prerequisite: POL 101 or equivalent.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

550ABC. (SOC) Internship in Criminal Justice. 5 hours each; maximum 15 hours.

Prerequisite: POL 304, senior division status, and approval of Criminal Justice Program Director.

An internship specifically designed for students pursuing a degree in criminal justice. Interns will be assigned specific work assignments in a criminal justice agency or, where appropriate, more than one agency. The academic portion of the internship will be supervised by a member of the University of Georgia faculty and may include seminars, assigned readings, and research assignments. A paper or other written assignments will be required. The completion of 15 hours satisfies the internship requirement for the A.B. degree in criminal justice.

Psychology (PSY)

Contact Person: Dr. Gary Lautenschlager, 542-2174

101. Elementary Psychology. 5 hours.

Not open to students with credit in PSY 103H. Introduction to the phenomena, laws, theories, and history of psychology. Topics include animal and human learning, motivation, perception, individual differences, social behavior, and biopsychology. Emphasis is on fundamental principles rather than on application. Students are given the opportunity to participate in ongoing research.

103H. General Psychology (Honors). 5 hours. Not open to students with credit in PSY 101.

A survey of psychology, with emphasis on theoretical and methodological issues.

210. Survey of Black Psychology. 5 hours.

Not open to students with credit in AAM(PSY) 413 or PSY 490K or AAM 425.

The study of Black people as psychologists and as subjects of psychological inquiry. The history of Black psychology and African philosophy as a basis for Black psychology will be discussed. Other topics include self-concept and identity, intelligence and school achievement, the Black family, and Black speech and language.

252. Comparative Animal Behavior. 5 hours.

Not open to students with credit in PSY 337.

Prerequisite: PSY 101 or 103H.

Methods, principles, and findings of the study of animal behavior. The value of conservation of natural population of animals and how their behavior and the behavior of coexisting species,

including humans, affect conservation will be considered.

253. Mental Processes. 5 hours.

Prerequisite: PSY 101 or 103H.

Introduction to the study of mental processes such as perception, imagery, memory, attention, problem solving, decision making, and thinking.

254. Basic Learning and Motivation. 5 hours.

Not open to students with credit in PSY 317, 332, or 455.

Prerequisite: PSY 101 or 103H.

Introduction to the study of learning, including acquisition, extinction, generalization/discrimination, reinforcement, punishment, and motivation.

256. Interpersonal Behavior. 5 hours.

Not open to students with credit in PSY 347 or PSY(SOC) 373.

Prerequisite: PSY 101 or 103H.

A survey of the social behavior of adults from a psychological perspective, including aggression, interpersonal attraction, leadership, conformity, and persuasion.

257. Applications of Psychology. 5 hours.

Prerequisite: PSY 101 or 103H.

A survey of the applications of psychology to humans, especially to the uses of psychology in understanding, measuring, changing and improving behavior. The course serves as an introduction to personality, abnormal behavior, clinical psychology, and human relations.

258. The Psychology of Adjustment. 5 hours.

Introduction to psychological adjustment, including appropriate and inappropriate reactions to frustration and stress; solutions to conflict, fear and anxiety; building self-concept and improving interpersonal relations.

298. Research Design in Psychology. 5 hours.

Not open to students with credit in PSY 301.

Prerequisite: (PSY 101 or 103H) and (BIO 103-103L or 107-107L) and STA 200.

Design of research in psychology. Experimental and quasi-experimental design, as well as the general principles of the scientific method. Direct experience with the formulation of hypotheses, collection of data, and description of research findings is required.

299. Research Analysis in Psychology. 5 hours.

Not open to students with credit in PSY 301.

Prerequisite: PSY 298.

Basic concepts and quantitative methods used to describe, analyze, and draw logical conclusions from data collected in psychological research. Direct experience with data analysis and description of research findings is required.

301. Experimental Psychology. 6 hours.

Not open to students with credit in PSY 322.

Prerequisite: PSY 101 or 103H.

Introduction to the experimental and quantitative methods used by psychologists to acquire knowledge, and to determine the reliability and validity of research data. The course requires direct experience with the methods of data collection and analysis, and the description of research findings.

302. (EPY/AI) Introduction to Cognitive Science. 5 hours.

See EPY 302.

307. Cognitive Psychology. 5 hours.

Not open to students with credit in PSY 253 or 490E.

Prerequisite: PSY 299.

Contemporary theories of human information processing. Major topics include attention, mental representations, categorization, short-term and long-term memory, psycholinguistics, reasoning, problem-solving, judgment and decision making. Laboratory/research experience is included.

313. Laboratory in Learning. 3 hours.

Not open to students with credit in PSY 254, 332, or 455.

Prerequisite or corequisite: PSY 317.

Supervised laboratory training in animal and human learning. Experiments on conditioning, verbal learning and memory are carried out, including data analysis and written reports.

315. (AAM) Introductory Black Psychology. 5 hours.

See AAM 315.

317. Learning. 5 hours.

Not open to students with credit in PSY 254, 311, 332, or 455.

Prerequisite: PSY 299.

Phenomena and theories of animal and human learning, including Pavlovian conditioning, operant conditioning, discrimination learning, verbal learning, and organization and processing in memory. Laboratory/research experience is included.

323. Laboratory in Sensation and Perception. 3 hours.

Not open to students with credit in PSY(BIO) 456 or PSY 457.

Prerequisite or corequisite: PSY 327.

The laboratory will include experimental investigations and demonstrations of sensory and perceptual phenomena. Vision, audition, taste, smell, the skin senses and balance will be included. Psychophysics, scaling, and other experimental methods will receive emphasis.

327. Sensation and Perception. 5 hours.

Not open to students with credit in PSY(BIO) 456 or PSY 457 or 321.

Prerequisite: PSY 299.

How organisms sense and perceive the environment. Topics discussed include: types of stimuli affecting the sensory receptors, the anatomy and physiology of the sensory systems responding to those stimuli, and current knowledge and theories about perceptual abilities. Laboratory/research experience is included.

333. Laboratory in Physiological and Comparative Psychology. 3 hours.

Not open to students with credit in PSY 251, 252, 480, or 481.

Prerequisite or corequisite: PSY 337.

Supervised laboratory training in physiological and comparative psychology. Experiments are conducted on the anatomy and physiology of the nervous system, and on the development, evolution and function of behavior.

337. Physiological and Comparative Psychology. 5 hours.

Not open to students with credit in PSY 251, 252, 331, 480, or 481.

Prerequisite: PSY 299.

Biological bases of human and nonhuman behavior, with emphasis on underlying physiological mechanisms, and on the development, evolution and functions of behavior. Laboratory/research experience is included.

343. Methods in Social and Personality Psychology. 3 hours.

Not open to students with credit in PSY 256, 334, or PSY(SOC) 373.

Prerequisite or corequisite: PSY 347.

Supervised laboratory training in personality and social psychology. Students design and critique research projects based on the study of research designs (experimental, quasi-experimental, and correlational) and observational methods.

347. Social and Personality Psychology. 5 hours.

Not open to students with credit in PSY 256, 334, 341, or PSY(SOC) 373.

Prerequisite: PSY 299.

Research and theory on social behavior, including attitudes, social influence, group dynamics, and person perception. Laboratory/research experience is included.

353. Laboratory in Measurement and Differences. 3 hours.

Not open to students with credit in PSY 336 or 415.

Prerequisite or corequisite: PSY 357.

Supervised laboratory training in measurement and differences. Students design, analyze and report experiments on the measurement of intelligence, school achievement, abilities, aptitudes, personality and group differences.

357. Measurement and Individual Differences. 5 hours.

Not open to students with credit in PSY 336, 351, or 415.

Prerequisite: PSY 299.

Measurement of individual and group differences in abilities, interests, achievement and traits. Laboratory/research experience is included.

363. Laboratory in Developmental Psychology. 3 hours.

Not open to students with credit in PSY 374, CFD(PSY) 395, or CFD(PSY) 408.

Prerequisite or corequisite: PSY 367.

Supervised laboratory training in developmental psychology. Students work in research teams to study young children. Research projects are required, which include design, data collection and analysis, and written and oral presentations.

367. Developmental Psychology. 5 hours.

Not open to students with credit in PSY 361, 374, CFD(PSY) 395, or CFD(PSY) 408.

Prerequisite: PSY 299.

Research and theory on the psychological development of the maturing human, including social/emotional development and cognitive development. Laboratory/research experience is included.

377. Psychology of the Workplace. 5 hours.

Not open to students with credit in PSY 414.

Prerequisite: PSY 299.

Major topics in industrial-organizational psychology with emphasis on organizational and personnel psychology applied to business, industry, and government. Laboratory/research experience is included.

395. (CFD) Introduction to Child Development. 5 hours.

See CFD 395.

400. Special Problems. 2-15 hours (maximum of 5 hours per quarter). Repeatable for maximum 15 hours credit.

Prerequisite: 15 hours in psychology including PSY 301.

A course for the advanced undergraduate who wishes to participate in supervised research.

401. Advanced General Psychology. 5 hours.

Prerequisite: Two upper division courses in psychology or permission of department.

Review, summary, and integration of psychology as a whole. Attention will be given both to content and to psychology as a profession.

402. Systems of Psychology. 5 hours.

Prerequisite: Two upper division psychology courses or permission of department.

A survey of major theoretical systems in psychology with special emphasis on developments of

the last half-century, especially behaviorism and cognitivism.

404. History of Psychology. 5 hours.

Prerequisite: Two upper division courses in psychology or permission of department.

History of psychology and its antecedents, both classical and modern.

406. Psychology of Aging. 5 hours.

Prerequisite: PSY 367 and SOC 465.

A survey of research in gerontology, with emphasis on learning, personality, attitudes, perception, ability, and adjustment in the aged.

408. (CFD) Development of the Young Child. 5 hours.

See CFD 408.

410. Psychology of Women. 5 hours.

Prerequisite: PSY 101 or 103H.

The study of women as the subject of psychological inquiry. Topics include personality theory, psychopathology, psychological aspects of reproductive health, psychological reaction to being victimized, and life crises.

411. Applied Psychology of Self Management and Actualization. 5 hours.

Not open to students with credit in PSY 371.

Prerequisite: PSY 101 or 103H.

Analysis and application of the principles involved in self-management and self-actualization. Personal development projects are carried out along with biographical analyses comparing self-actualizing persons.

412. Directed Readings in Psychology. 1-5 hours.

Repeatable for maximum 10 hours credit.

Prerequisite: 15 hours of psychology.

A course for the student who wishes to read comprehensively in a particular content area under the direction of a faculty member.

413. (AAM) Classic Studies in Black Psychology. 5 hours.

See AAM 413.

414. Introduction to Industrial-Organizational Psychology. 5 hours.

Prerequisite: PSY 101 or 103H.

A survey of major topics in industrial-organizational psychology, with emphasis on organizational and personnel psychology applied to business, industry, and government.

423. Abnormal Psychology. 5 hours.

Prerequisite: PSY 101 or 103H.

The study of the varieties of abnormal behavior, their explanation, assessment and treatment.

426. Psychology of Sex and Sexual Deviations. 5 hours.

Not open to students with credit in PSY 326.

Prerequisite: PSY 101 or 103H and upper division standing.

A survey of research in human sexual behavior. Emphasis is given to empirical findings and current personal and social implications. Topics include variations in sexual behavior, deviance, social patterns, assessment, and treatment.

430. Social and Personality Development. 5 hours.

Not open to students with credit in PSY 259.

Prerequisite: PSY 101 or 103H.

A survey of factors that influence children's social behavior as they are integrated into adult society. Included are basic theories and research on the development of sex roles, aggression, altruism, moral standards, dependency, independence, achievement, and peer relations.

431. (EPY) Cognitive Development. 5 hours.

Prerequisite: PSY 367 or CFD(PSY) 395.

A survey of theory and research in cognitive development (infancy to adolescence), with emphasis on symbolic thought, memory, intelligence, and individual differences in children's thinking.

432. (AAM) Psychology of Prejudice. 5 hours.

See AAM 432.

450. (CSD/LIN) Language Development. 5 hours. See CSD 450.

451. Theories of Personality. 5 hours.

Prerequisite: PSY 101 or 103H.

A survey of major theories of personality, with some attention given to current research and to methodological issues in the field.

466. (SPC) Psychology of Speech Communication. 5 hours.

See SPC 466.

475. Principles of Primate Phylogeny. 5 hours.

Prerequisite: PSY 101 or 103H or ANT 102 or permission of department.

Introduction to the interrelationships among morphology, behavior, and systematics for students of primate behavior.

476. Comparative Physical and Psychological Development of the Primates. 5 hours.

Prerequisite: PSY 101 or 103H or ANT 102 or permission of department.

The study of the influence of species and developmental environment on normal and abnormal behavioral development.

477. Organization of Primate Social Groups. 5 hours.

Prerequisite: PSY 101 or 103H or ANT 102 or permission of department.

The study of the interaction of ecology, phylogeny, individual behavior, and group organization from a comparative perspective.

480. Physiological Psychology. 5 hours.

Prerequisite: 10 hours of biology.

The relationship between the internal environment and such behaviors as food intake control, mating behavior, neural action, emotion, etc. are studied.

490ABCDEFJKMNPSTU. Seminar in Psychology. 5 hours each for maximum 25 hours credit.

Prerequisite: 20 hours of upper-division psychology and permission of department.

A seminar to permit faculty and undergraduate students to explore, in depth, current topics and new developments in areas of psychology which are not treated extensively in regular courses.

496H, 497H, 498H. Directed Reading and/or Projects. 5 hours.

Prerequisite: PSY 101 or 103H and senior standing and permission of Honors Program.

A course for Honors students or outstanding majors who wish to participate in supervised research, reading, or other projects.

499H. Honors Thesis. 5 hours.

Prerequisite: PSY 101.

A course for Honors students who wish to undertake individual research in his or her major or in a closely related field.

561. (MKT) Behavioral Theory and Marketing. 5 hours.

See MKT 561.

582. (MAN) Personnel Program Development. 5 hours.

See MAN 582.

586. (MAN) Compensation Administration. 5 hours.

See MAN 586.

Religion (REL)

Contact Person: Thomas Slater, 542-5356

115. Introduction to Western Religious Traditions. 5 hours.

A study of the nature of religion and its function in Western culture. The Judeo-Christian tradition is investigated historically and analytically.

116. Introduction to the Major Religious Perspectives of Mankind. 5 hours.

A comparative and thematic study of the religious experience of the human community as expressed in the various religions or religious perspectives of the world.

202. Introduction to Religion in Native American Cultures. 5 hours.

Introduction to native religious traditions of selected cultures of North America, with special

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attention to cultures of the Southeast, Great Plains, and Southwest.

225H. Introduction to the Major Religious Perspectives of Mankind (Honors). 5 hours.
Not open to students with credit in REL 116.

A comparative and thematic study of the religious experience of the human community as expressed in the various religions or religious perspectives of the world.

231. (AAM) African American Religious Organizations. 5 hours.

Major and selected contemporary religious organizations among African Americans.

300. (AAM) The Bible in the Third World. 5 hours.

Prerequisite: REL 115 or 116 or 225H or permission of department.

Interpretations of the Bible in Africa, Asia, Central and South America and the influence upon minority communities in the United States.

303. Religion and the Media. 5 hours.

Prerequisite: JRL 101 and/or junior standing or permission of department.

Religion in the mass media. Topics may include the coverage of religious issues or events by the news media and the presentation of religious themes or concepts in the entertainment media.

315C. (HIS) Religion in the United States. 5 hours.

See HIS 315C.

400. The History of Religions. 5 hours.

Prerequisite: Junior standing or permission of department.

A survey of the nature of early primitive religions and the main outlines of the chief living religions of the world. The method will be both historical and analytical.

401. Religion in Asian Cultures. 5 hours.

Prerequisite: Junior standing or permission of department.

The interrelation between religion and culture in contemporary and classical Asia. The course will focus on religion's role historically as a major force in shaping the cultures of South and Southeast Asia, China, and Japan, and on significant contemporary trends reflecting particularly the effects of secularism, war, rising nationalism, Western science, and communism.

402. Confucianism and Chinese Tradition. 5 hours.

Prerequisite: Junior standing or permission of department.

Confucianism and its place in traditional Chinese religion, thought, and culture. Emphasis on the teachings of foundational thinkers such as Confucius, Mencius, and Hsun-tzu.

404. The Buddhist Tradition. 5 hours.

Prerequisite: Junior standing or permission of department.

The development of Buddhism from its origin in the life and teachings of the Buddha through the period of philosophical ferment in India, and its thought and institutions in the East and the West up to the present.

406. Taoist Thought and Religion. 5 hours.

Prerequisite: Junior standing or permission of department.

Taoism and its place in traditional Chinese religion, thought, and culture. The classical texts, *Lao-tzu* and *Chuang-tzu*, the evolution of the later Taoist religion, and the many varieties of Taoist spirituality.

407. Japanese Religion. 5 hours.

Prerequisite: Junior standing or permission of department.

Development of religion in Japan from earliest times to the present, with emphasis upon Shinto, the domestication of Buddhism, and the relationship of religion to the Japanese state and "national identity." Particular attention given to the development of Zen in Japan.

408. (PHY) Philosophy of Religion. 5 hours.

See PHY 408.

409. Indian Philosophy and Religion. 5 hours.

Prerequisite: Junior standing or permission of department.

Traces the path of India's religious and philosophical thought from the Indus civilization to the present. Attention will be given to interpreting the orthodox Hindu systems as well as Buddhism and their related religious practices, ethics, castes, and sects.

410. Old Testament Literature. 5 hours.

Prerequisite: Junior standing or permission of department.

A study of the nature, content, and problems of Old Testament literature, with attention given to historical data, literary forms, and outstanding personalities.

411. New Testament Literature. 5 hours.

Prerequisite: Junior standing or permission of department.

A study of the nature, content, and problems of New Testament literature, with particular attention given to the political, social, and religious background of Judaism, out of which Christianity sprang; the life of Jesus; and the immediate foreground of an expanding church.

412. The New Testament World. 5 hours.

Prerequisite: Junior standing or permission of department.

A study of the political, social, and religious influences on the New Testament writings. Special attention is given to intertestamental Judaism and Hellenistic and Roman religion as background to New Testament Christianity.

415. (ANT) Anthropology of Religion. 5 hours.
Prerequisite: Junior standing or permission of department.

Anthropological approaches to the world's major religions as they relate to complex societies.

420. Constructive Theology. 5 hours.
Prerequisite: Junior standing or permission of department.

An examination of the aims, methods, and content of theology as related to the monotheistic religions of mankind.

422. Theology and Culture. 5 hours.
Prerequisite: Junior standing or permission of department.

An examination of the relation of theology to philosophy, science, technology, and the arts, with special attention to the theological attempts to deal with the impact of science and technology upon culture.

431. (AAM) Afro-American Religious History. 5 hours.

Prerequisite: Junior standing.
The religious traditions of black Americans from colonial times to the present; major religious movements, personalities, and ideas and their relationship to various aspects of American culture.

432. American Religious History. 5 hours.
Prerequisite: Junior standing or permission of department.

Major and innovative religious organizations, ideas, movements, and personalities as they express themselves in particular religious settings as well as the manner in which they have influenced other aspects of American culture.

433. (AAM) Southern Religious History. 5 hours.
Prerequisite: Junior standing or permission of department.

The origins, growth, and current practices of religion in the American South. In addition, the interaction between religion and other aspects of Southern culture—such as racial and gender concerns, education, Darwinian science, temperance, and politics—will be explored.

434. (AAM) The Bible in the Black Church. 5 hours.

Prerequisite: REL(AAM) 300 or permission of department.

Biblical interpretation in Black America from 1865 to the present.

440. The Teachings of Jesus. 5 hours.
Prerequisite: Junior standing or permission of department.

Although primarily a study of what Jesus taught, attention is given to the literary and environmental background of his teaching, the historical life of the teacher, and the contemporary validity of what he taught.

441. History of Christian Theology, Ancient. 5 hours.

A study of the development of Christian thought from the 1st through the 5th century as expressed in the writings and practices of the Christian community and its leading thinkers.

442. History of Christian Theology, Medieval. 5 hours.

A study of the development of Christian thought from the 6th through the 14th century as expressed in the writings and practices of the Christian community and its leading thinkers.

443. History of Christian Theology, Modern. 5 hours.

A study of the development of Christian thought from the 15th through the 19th century as expressed in the writings and practices of the Christian community and its leading thinkers.

444. Women in Christian History. 5 hours.
Prerequisite: Junior standing or permission of department.

An historical examination of the relationship between women and Christianity, particularly concerning matters involving gender equality in church and society.

451. Judaism—Its History, Literature and Thought. 5 hours.

Prerequisite: Junior standing.
An examination of Judaism along essentially historical and chronological lines, including outlines of several periods in the history of Judaism from antiquity to contemporary times, and descriptions of principal traits of each stage of Judaism.

453. The Holocaust. 5 hours.
Prerequisite: Junior standing or permission of department.

The destruction of European Jewry from 1933 to 1945: (1) the historical context; (2) life and death in ghettos and camps; (3) the reactions of bystanders; (4) art, music, and literature of the Holocaust; and (5) religious questions raised by the Holocaust.

454. Jewish Theology. 5 hours.
Junior standing or permission of department.
Fundamental issues in Jewish religious thought as expressed in Rabbinic literature and subsequent writings of major Jewish thinkers.

455. Prophetic Literature of the Old Testament/Hebrew Bible. 5 hours.

Prerequisite: Junior standing or permission of department.

An examination of the origin and development of the phenomenon of prophecy as it existed throughout the history of ancient Israel.

456. Ancient Israelite Religion. 5 hours.

Prerequisite: Junior standing or permission of department.

Origins of the religion of ancient Israel, its emergence from and continuities with ancient West Semitic religion and culture. Historical and comparative methods, emphasizing current knowledge of Near Eastern history and religions contemporary with ancient Israel.

458. Apocalyptic Literature. 5 hours.

Prerequisite: Junior standing or permission of department.

An examination of apocalyptic literature from its origins in the sixth and fifth centuries B.C.E. down to its flourishing Hellenistic and Roman times. The texts, to be studied in English translation, will include the following: Isaiah 24-27, 40-66; Zechariah 9-14, Joel, Malachi, Daniel, I Enoch, IV Ezra, Baruch, Qumran material, Mark 13 and the Book of Revelation. Questions bearing on contemporary theological significance will also be discussed.

461. Islam and Its World. 5 hours.

Prerequisite: Junior standing or permission of department.

Islam as a religious and sociocultural phenomenon. Students will be introduced to the fundamental principles of the Islamic faith, the Qur'an, the Sunna of Muhammad, Islamic sectarianism, Islamic law and theology, and themes in Islamic art.

462. Islamic Thought in the Caliphal Age. 5 hours.

Prerequisite: Junior standing or permission of department.

Islamic scholarship from the 8th through the 14th centuries. Principle topics covered will include: the Qur'an and Qur'anic exegesis, the Hadith tradition, Islamic law, theology, philosophy and Sufi mysticism.

463. Islam and the Modern World. 5 hours.

Prerequisite: Junior standing or permission of department.

Islamic modernism and revivalism as a response to Western cultural penetration since the 18th century. Subjects covered will include Sufi reformism, Wahhabism, the Salafiyya movement, Islamic "fundamentalism," and the Iranian Revolution.

464. The Sufi Way. 5 hours.

Prerequisite: Junior standing or permission of department.

Islamic mysticism, both as a set of metaphysical doctrines and as it is expressed in magico-religious practices and the veneration of Muslim "saints." Particular attention will be given to the doctrinal development of Sufism, its literature, and major figures.

480. Reading and Research in Religion. 5 hours.

Repeatable for maximum 15 hours credit.

Prerequisite: Permission of department.

Directed study in reading and research in Religion.

496H, 497H, 498H. Directed Reading and/or Projects. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

Arabic (ARB)

201. Elementary Standard Arabic I. 5 hours.

Fundamentals of grammar, pronunciation, reading, composition, and conversation of standard (including classical) Arabic.

202. Elementary Standard Arabic II. 5 hours.

Prerequisite: ARB 201 or equivalent.
Continuation of ARB 201, including review and introduction of new content.

403. Intermediate Standard Arabic I. 5 hours.

Prerequisite: ARB 202 or equivalent.
Intermediate grammar, reading, conversation, and composition in standard (including classical) Arabic.

404. Intermediate Standard Arabic II. 5 hours.

Prerequisite: ARB 403 or equivalent.
Continuation of ARB 403, including review and introduction of new content.

410. Reading and Research in Arabic and Islamic Literature. 5 hours. Repeatable for maximum 15 hours credit.

Prerequisite: ARB 404.
Study of Arabic and Islamic texts with emphasis upon extensive reading and individual and/or group research projects. Selection of topics will vary according to the interest of the instructor and students.

Hebrew (HBW)

201. Introduction to Classical Hebrew I. 5 hours.
A study of the elements of classical Hebrew grammar.

202. Introduction to Classical Hebrew II. 5 hours.

Prerequisite: HBW 201.

A continuation of 201.

403. Intermediate Hebrew I. 5 hours.

Prerequisite: HBW 202.

A review of classical Hebrew grammar with reading of selected texts from the Hebrew Bible.

404. Intermediate Hebrew II. 5 hours.

Prerequisite: HBW 403.

Readings of Hebrew texts selected from the Old Testament, Dead Sea Scrolls, or early rabbinic literature.

410. Reading and Research in Hebrew Literature. 5 hours. Repeatable for maximum 15 hours credit.

Prerequisite: HBW 404 or permission of department.

Directed study in reading and research in classical Hebrew Literature.

496H, 497H, 498H. Directed Readings and/or Projects. 5 hours.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

Semitic (SEM)

402. Introduction to Aramaic/Syriac. 5 hours.

Prerequisite: HBW 404.

A study of the elements of Aramaic/Syriac, especially as related to Hebrew, along with simple readings from religious texts.

Romance Languages (ROM)

Contact Person: Dr. Doris Kadish, 542-1075

Certain courses in the Department of Romance Languages are not open to native speakers. A native speaker is defined as a person who graduated from a secondary school in which the language of instruction was French, Italian, Portuguese, or Spanish.

255. Latino Literary, Linguistic, and Cultural Texts in the United States. 5 hours.

Not open to students with credit in SP 255.

Cultural and literary contributions of the three major Latino groups in the U.S.: Puerto Rican, Chicano, and Cuban-American. Lectures in English.

300. Topics in Romance Languages. 5 hours.

A general introduction to selected topics in the Romance Languages. Taught in English. No credit allowed to majors and minors in romance languages.

French (FR)

101. Elementary French. 5 hours.

Designed for students with no previous knowledge of French.

Conversation, grammar, fundamentals of pronunciation and reading are taught. Students in this course are required to spend a minimum of one hour a week outside of class in the language lab. Not open to native speakers.

102. Elementary French. 5 hours.

Prerequisite: FR 101 or one entrance unit in French.

A continuation of FR 101. Not open to native speakers.

103. Elementary French. 5 hours.

Prerequisite: FR 102 or two entrance units in French.

A continuation of FR 102. Not open to native speakers.

113H. Accelerated Intermediate French I (Honors). 5 hours.

Not open to students with credit in FR 102 or 103. Prerequisite: FR 101 or equivalent. (Advanced Placement test scores may be considered as the equivalent.) Primarily an intensive grammar course covering material studied in FR 102 and 103. Honors students who do satisfactory work in this course may substitute it for FR 102 and 103. Not open to native speakers.

201. Intermediate French. 5 hours.

Not open to students with credit in FR 104, 104A, 104B, 104C, or 114H.

Prerequisite: FR 103 or equivalent.

Extensive reading of texts of literary merit. Grammar review, conversation, and pronunciation. Not open to native speakers.

202. Intermediate French. 5 hours.

Not open to students with credit in FR 104, 104A, 104B, 104C, or 114H.

Prerequisite: FR 201.

Continuation of the basic curriculum of FR 201, with an emphasis on strengthening the reading, writing, speaking and listening skills of the inter-

French

mediate student. Also prepares students to enter courses in French composition and conversation (301) and French literature (303). Not open to native speakers.

202B. Intermediate French. 5 hours.

Not open to students with credit in FR 104, 104A, 104B, 104C, or 114H.

Prerequisite: FR 201.

General readings and discussions on French commerce and economics with emphasis on basic commercial and corporate vocabulary, letter writing, and French and English equivalencies in commercial systems. Fifth-quarter language review. Also prepares students to enter courses in French composition and conversation (301) and French literature (303). Not open to native speakers.

213H. Accelerated Intermediate French II (Honors). 5 hours.

Prerequisite: FR 113H or equivalent.

Not open to students with credit in FR 104, 104A, 104B, 104C, 114H, 201, 202, or 202B.

An intensive course covering material studied in FR 201 and 202. Emphasis on advanced readings and grammar review. Also prepares students to enter courses in French composition and conversation (301, 302H) and French literature (303, 304H). Not open to native speakers.

301. French Conversation and Composition. 5 hours.

Not open to students with credit in FR 210.

Prerequisite: FR 104, 104A, 104B, 104C, 114H, 202, 202B, or 213H.

The emphasis is divided between conversation and composition. The two phases of the course are correlated to promote the students' ability to express themselves accurately whether in speaking or in writing French. Given in French. Not open to native speakers.

302H. French Conversation and Composition (Honors). 5 hours.

Not open to students with credit in FR 210, 215H, or 301.

Prerequisite: FR 213H or equivalent.

See FR 301. May be substituted by French majors/minors for FR 301. Given in French. Not open to native speakers.

303. Critical Reading of French Literature. 5 hours.

Not open to students with credit in FR 211.

Prerequisite or corequisite: FR 301.

An introduction to the critical reading and interpretation of French literature through the study of representative masterpieces in various genres. The student will be presented with the basic vocabulary and techniques of literary analysis and criticism. Given in French.

304H. Critical Reading of French Literature (Honors). 5 hours.

Not open to students with credit in FR 211, 216H, or 303.

Prerequisite: FR 213H or equivalent.

See FR 303. May be substituted by French majors/minors for FR 303. Given in French.

306. French Conversation and Composition. 5 hours.

Prerequisite: FR 301.

Designed to provide additional practice in French conversation and composition beyond FR 301. Given in French. Not open to native speakers.

308. Business French. 5 hours.

Prerequisite: FR 306.

The course, conducted in French, studies types of French businesses, advertising, postal services, banks, business correspondence, etc. Emphasis is placed on practical application, with a close examination of business documents.

310. French Literature from the Middle Ages to the 17th Century. 5 hours.

Prerequisite: FR 303 and 306.

Intensive reading and analysis of the major works of representative French writers and study of the main literary movements from the medieval period to the end of the 17th century. Given in French.

311. French Literature from 1700 to 1848. 5 hours.

Prerequisite: FR 303 and 306.

Intensive reading and analysis of the major works of representative French writers and study of the main literary movements from 1700 to 1848. Given in French.

312. French Literature from 1848 to the Present. 5 hours.

Prerequisite: FR 303 and 306.

Intensive reading and analysis of the major works of representative French writers and study of the main literary movements from 1848 to the present. Given in French.

322H. Modern French Literature (Honors). 5 hours.

Not open to students with credit in FR 312.

Prerequisite: FR 304H or 303 with Honors standing.

See FR 312. May be substituted by French majors/minors for FR 312. Given in French.

350. French for Reading Knowledge. 5 hours.

Rapid survey of grammar, idioms and vocabulary; practice in translating moderately difficult technical and non-technical French. Intended to assist graduate students to satisfy reading knowledge requirement but does not carry graduate credit;

not to be used to satisfy undergraduate language requirement; not open to French majors.

410. French Culture and Civilization. 5 hours.
Prerequisite: FR 306.

A study of the history of French culture and of its contribution to world civilization from the Middle Ages to the present. Social, political, cultural and technical developments are illustrated in lectures, slide shows and discussions. Given in French.

411. France Since 1968. 5 hours.
Prerequisite: FR 306.

The making of contemporary French society from 1968 to the present, as derived from analysis of the interrelationships of cultural, social, economic and political factors. Given in French.

420. The Middle Ages and Humanism. 5 hours.
Prerequisite: FR 310 or permission of department.

Intensive reading and analysis of the major works of representative French authors and study of the main literary movements to 1600. Given in French.

429. Classicism. 5 hours.
Prerequisite: FR 310 or permission of department.

A study of the growth and development of French Classicism with particular emphasis on such writers as Descartes, Pascal, Moliere, Racine, and La Fontaine. Given in French.

440. The Age of Reason. 5 hours.
Prerequisite: FR 311 or permission of department.

A study of precursors and principal figures of the French Enlightenment. Given in French.

450. Romanticism. 5 hours.
Prerequisite: FR 311 or permission of department.

The origins, development and manifestations of the romantic movement in France. Given in French.

464. Realism, Naturalism, Symbolism. 5 hours.
Prerequisite: FR 311 or 312 or permission of department.

Major authors of the Post-Romantic part of the 19th century: Flaubert, Zola, Baudelaire, Rimbaud, Verlaine, Mallarme. Given in French.

470. The Early 20th Century. 5 hours.
Prerequisite: FR 311 or 312 or permission of department.

A study of the major writers and literary movements between 1900 and 1919. Given in French.

480. From Surrealism to Existentialism. 5 hours.
Prerequisite: FR 311 or 312 or permission of department.

A study of French literature between 1919 and 1960, with an emphasis on writers representative of the Surrealist and Existentialist movements. Given in French.

490. The New Wave. 5 hours.
Prerequisite: FR 311 or 312 or permission of department.

A study of the major writers and literary movements of contemporary France. Given in French.

496H, 497H, 498H. Directed Reading and/or Projects. 5 hours each.

Prerequisite: Junior/senior standing and permission of department.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the guidance of a project director.

499H. Honors Thesis. 5 hours.
Prerequisite: Senior standing and permission of department.

This course provides opportunity for Honors students to undertake individual research in the field of their major or in a closely related field.

507F.(LIN) Applied French Linguistics. 5 hours.
Prerequisite: FR 306.

The applications of the science of linguistics to the methodology of teaching French.

556. Advanced French Syntax and Composition. 5 hours.
Prerequisite: FR 306.

Comprehensive review of grammatical forms and usages with particular reference to the needs of teachers of French. Acquired knowledge will be applied in weekly compositions.

557F. (LIN) French Phonetics. 5 hours.
Prerequisite: FR 306.

A careful analysis of each of the sounds in French language followed by intensive drill in the accurate pronunciation of these sounds in connected discourse. Practice in phonetic transcription; use of tapes.

570F.(LIN) History of the French Language. 5 hours.
Prerequisite: FR 306.

A history of the development of the French language from Latin to the present. Given in French.

Italian (ITA)

101. Elementary Italian. 5 hours.
Teaches conversation, fundamentals of grammar, pronunciation and reading. Students in this course are required to spend a minimum of one hour a week outside of class in the language lab. Not open to native speakers.

102. Elementary Italian. 5 hours.
Prerequisite: ITA 101 or one entrance unit in Italian.
A continuation of ITA 101. Not open to native speakers.

Italian

103. Elementary Italian. 5 hours.

Prerequisite: ITA 102 or two entrance units in Italian.

A continuation of ITA 102. Not open to native speakers.

201. Intermediate Italian. 5 hours.

Not open to students with credit in ITA 104.

Prerequisite: ITA 103 or equivalent.

Extensive reading of texts of literary merit. Grammar review, conversation and pronunciation. Also prepares students to enter courses in Italian composition and conversation (301). Not open to native speakers.

301. Italian Conversation and Composition. 5 hours.

Not open to students with credit in ITA 210.

Prerequisite: ITA 201.

Conversation and composition are correlated to promote the students' abilities to express themselves adequately whether in speaking or writing Italian. Given in Italian. Not open to native speakers.

306. Italian Conversation and Composition. 5 hours.

Prerequisite: ITA 301.

The emphasis is divided between conversation and composition. The two phases of the course are correlated to promote students' abilities to express themselves accurately in both oral and written Italian. Given in Italian. Not open to native speakers.

310. Italian Literature from Its Origins to 1400. 5 hours.

Prerequisite: ITA 301.

Intensive reading and analysis of the major works of representative Italian writers and study of the main literary movements in Italian literature from its origins to the end of the 14th century. Given in Italian.

311. Italian Literature from 1400 to 1700. 5 hours.

Prerequisite: ITA 301.

Intensive reading and analysis of the major works of representative Italian writers and study of the main literary movements in Italian literature from 1400 to 1700. Given in Italian.

312. Italian Literature from 1700 to the Present. 5 hours.

Prerequisite: ITA 301.

Intensive reading and analysis of the major works of representative Italian writers and study of the main literary movements in Italian literature from the 18th to the 20th century. Given in Italian.

352. Italian Diction. 1 hour.

Prerequisite: Permission of department.

A study of Italian pronunciation, with special emphasis on the fundamentals of Italian phonetics and sound production as applied to reading and singing. Open to voice majors and others interested. Two class hours per week.

360. Intensive Italian. 5 hours.

Prerequisite: Previous study of another Romance language or Latin, or by permission of department.

A concentrated course with fluent and accurate reading of the language as the main objective. Elements of grammar, practice in reading contemporary texts, and oral practice. Not open to native speakers.

410. Italian Culture and Civilization. 5 hours.

Prerequisite: Two of the following: ITA 306, 310, 311, 312, or equivalent.

A study of the twenty regions in Italy in terms of their historical, literary, artistic, and sociological importance. Culture, heritage, and regional differences are studied through contemporary literary texts, films, and slide presentations. Given in Italian.

420. Dante I. 5 hours.

Prerequisite: Two of the following: ITA 306, 310, 311, 312.

A close reading of Dante's *Vita nuova* and *Inferno* for their allegorical, moral, eschatological, and poetic meanings. Contemporary critical interpretations of the *Commedia* will be discussed. Given in Italian.

421. Dante II. 5 hours.

Prerequisite: Two of the following: ITA 306, 310, 311, 312.

The relations of Dante's *Purgatorio* and *Paradiso* to medieval theology, history and poetics. Attention will also be given to how Dante's "minor" works (*Rime*, *De monarchia*, *De vulgari eloquentia*, and *Convivio*) relate to the *Commedia*. Given in Italian.

431. Petrarch and Petrarchism. 5 hours.

Prerequisite: Two of the following: ITA 306, 310, 311, 312.

A study of early Italian humanism through a close reading of Petrarch's *Canzoniere* and selections from his other works of poetry and prose. His influence on later Italian and European writers will be discussed together with the poetic tradition which originated in his works. Given in Italian.

441. Boccaccio and the Novella. 5 hours.

Prerequisite: Two of the following: ITA 306, 310, 311, 312.

The birth of modern European narrative is examined through a close reading of Boccaccio's *Decameron*, some of his minor works (*Filocolo*, *Filostrato*, *Elegia di Madonna Fiammetta*, *Amorosa visione*, and *Teseida*) and the novelle of later

writers (Machiavelli, Bandello, Sacchetti, Masuccio, et al.).
Given in Italian.

451. Italian Lyric Poetry. 5 hours.

Prerequisite: Two of the following: ITA 306, 310, 311, 312.

A study of representative Italian poets from the *Scuola Siciliana* and the *Dolce Stil Novo* to the present, with special attention given to Leopardi, romanticism, and twentieth century poets. Given in Italian.

461. The Italian Renaissance. 5 hours.

Prerequisite: Two of the following: ITA 306, 310, 311, 312.

A study of fifteenth and sixteenth century Italian literature through the representative literary works of the major humanists. Special attention will be given to the study of Renaissance poetics, the birth of modern literary scholarship, the epic, the pastoral, treatises, and the "questione della lingua." Works by Sannazaro, Poliziano, Boiardo, Ariosto, Castiglione, Firenzuola, Machiavelli, et al. Given in Italian.

471. The Italian Novel in the Nineteenth Century. 5 hours.

Prerequisite: Two of the following: ITA 306, 310, 311, 312.

A study of the Italian novel from its origins in Foscolo, Manzoni, and Tommaseo to Nievo, Fogazzaro, Verga and D'Annunzio. The course will also examine the various literary movements of that century: from romanticism to realism, naturalism, decadentism, and "verismo." Given in Italian.

481. Italian Theatre. 5 hours.

Prerequisite: Two of the following: ITA 306, 310, 311, 312.

A study of Italian drama from its origins to the present with special attention given to the Renaissance and the eighteenth century. Plays by Poliziano, Machiavelli, Ariosto, Tasso, il Ruzante, Metastasio, Goldoni, C. Gozzi, Alfieri, Manzoni, D'Annunzio, Pirandello, and Dario Fo. Given in Italian.

491. Topics in Italian Language and Literature. 5 hours.

Prerequisite: Two of the following: ITA 306, 310, 311, 312.

A study of specific aspects of Italian language or literature, not covered in other courses, to be selected according to the needs and interests of the students. Given in Italian.

492. Italian Literature in the Twentieth Century. 5 hours.

Prerequisite: Two of the following: ITA 306, 310, 311, 312.

A study of the various literary movements from the turn of the century to the present (from the relativists, futurists, and "crepuscolari" to the neo-realists and neo-experimentalists). Works by Pirandello, Svevo, Marinetti, Gozzano, Vittorini, Moravia, Pavese, Calvino, Lampedusa, Gadda, and Pasolini. Given in Italian.

496H, 497H, 498H. Directed Reading and/or Projects. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

This course provides the opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

Portuguese (POR)

101. Elementary Portuguese. 5 hours.

Teaches conversation, fundamentals of grammar, pronunciation, and reading. Students in this course are required to spend a minimum of one hour a week outside of class in the language lab. Not open to native speakers.

102. Elementary Portuguese. 5 hours.

Prerequisite: POR 101.

A continuation of POR 101. Not open to native speakers.

103. Elementary Portuguese. 5 hours.

Prerequisite: POR 102 or equivalent.

A continuation of POR 102. Not open to native speakers.

201. Intermediate Portuguese. 5 hours.

Not open to students with credit in POR 104.

Prerequisite: POR 103 or equivalent.

Extensive reading of texts of literary merit. Grammar review, conversation and pronunciation. Also prepares students to enter courses in Portuguese composition and conversation (301) and Portuguese literature (312, 313). Not open to native speakers.

301. Portuguese Conversation and Composition. 5 hours.

Not open to students with credit in POR 210.

Prerequisite: POR 201 or permission of department.

Conversation and composition are correlated to promote students' abilities to express themselves accurately whether in speaking or in writing Portuguese. Given in Portuguese. Not open to native speakers.

306. Portuguese Conversation and Composition. 5 hours.

Prerequisite: POR 201 or 360 or permission of department.

The emphasis is divided between conversation and composition. The two phases of the course are correlated to promote students' abilities to express themselves accurately in both oral and written (Brazilian) Portuguese. Given in Portuguese. Not open to native speakers.

312. Luso-Brazilian Literature to the End of the Nineteenth Century. 5 hours.

Prerequisite: POR 201 or 360 or equivalent.

Intensive reading and analysis of the major works of representative Luso-Brazilian writers and study of main literary movements in Luso-Brazilian literature from its origins to the end of the nineteenth century. Given in Portuguese.

313. Luso-Brazilian Literature of the Twentieth Century. 5 hours.

Prerequisite: POR 201 or 360 or equivalent.

Intensive reading and analysis of representative Luso-Brazilian writers and study of the main literary movements of the twentieth century. Given in Portuguese.

360. Intensive Portuguese. 5 hours.

Prerequisite: Previous study of another Romance language or Latin, or by permission of department.

A concentrated course with fluent and accurate reading of the language as the main objective. Elements of grammar, practice in reading contemporary texts and oral practice. Not open to native speakers.

401, 402. Directed Study and/or Projects. 5 hours each.

Prerequisite: POR 201 or 360 or permission of department.

The courses allow students the opportunity to engage in individual study, reading or projects, under the direction of a project director.

411. Culture and Civilization of the Portuguese-Speaking World. 5 hours.

Prerequisite: POR 201 or 360 or 306 or equivalent.

Structure of societies in the Portuguese-speaking world. Analyses of the interrelations among cultural, social, economic and political factors. Given in Portuguese.

465. Eighteenth and Nineteenth Century Prose of the Portuguese-Speaking World. 5 hours.

Repeatable for maximum 15 hours credit.

Prerequisite: POR 312 or 313 or equivalent or permission of department.

Works of the most prominent writers in Portugal and/or Brazil in the 18th and 19th centuries. Given in Portuguese.

471. The Twentieth Century Novel and Short Story of the Portuguese-Speaking World. 5 hours.

Repeatable for maximum 15 hours credit. Prerequisite: POR 312 or 313 or equivalent or permission of department.

Works of the most prominent twentieth century writers of Brazil and/or Portugal and/or Lusophone Africa. Given in Portuguese.

472. Poetry of the Portuguese-Speaking World. 5 hours.

Repeatable for maximum 15 hours credit. Prerequisite: POR 312 or 313 or equivalent or permission of department.

Representative poets from Portugal and/or Brazil and/or Lusophone Africa. Given in Portuguese.

473. Theatre of the Portuguese-Speaking World. 5 hours.

Repeatable for maximum 15 hours credit. Prerequisite: POR 312 or 313 or equivalent or permission of department.

Representative plays in Portugal and/or Brazil. Given in Portuguese.

485. Clarice Lispector and Joao Guimaraes Rosa. 5 hours.

Prerequisite: POR 301 or permission of department.

Brazil's foremost writers of the twentieth century, Clarice Lispector and Joao Guimaraes Rosa, with emphasis on works central to any study of contemporary Latin American literature. Given in Portuguese.

496H, 497H, 498H. Directed Reading and/or Projects. 5 hours each.

Repeatable for maximum 15 hours credit each.

Prerequisite: POR 360 or permission of department.

These courses afford students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

Prerequisite: POR 360 or permission of department.

This course provides the opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

Spanish (SP)

101. Elementary Spanish. 5 hours.

Designed for students with no previous knowledge of Spanish.

Conversation, fundamentals of grammar, pronunciation, and reading are taught. Students in this course are required to spend a minimum of one hour a week outside of class in the language lab. Not open to native speakers.

102. Elementary Spanish. 5 hours.

Prerequisite: SP 101 or one entrance unit in Spanish.

A continuation of SP 101. Not open to native speakers.

103. Elementary Spanish. 5 hours.

Prerequisite: SP 102 or two entrance units in Spanish.

A continuation of SP 102. Not open to native speakers.

113H. Accelerated Intermediate Spanish I (Honors). 5 hours.

Not open to students with credit in SP 102 or 103.

Prerequisite: SP 101 or equivalent. (Advanced Placement test scores may be considered as the equivalent.)

Primarily an intensive grammar course covering material studied in SP 102 and 103. Honors students who do satisfactory work in this course may substitute it for SP 102 and 103. Not open to native speakers.

201. Intermediate Spanish. 5 hours.

Not open to students with credit in SP 104, 104A, 104B, 104C, or 114H.

Prerequisite: SP 103 or equivalent.

Extensive reading of texts of literary merit. Grammar review, conversation, and pronunciation. Not open to native speakers.

202. Intermediate Spanish. 5 hours.

Not open to students with credit in SP 104, 104A, 104B, 104C, or 114H.

Prerequisite: SP 201.

Continuation of the basic curriculum of SP 201, with an emphasis on strengthening the reading, writing, speaking and listening skills of the intermediate student. Also prepares students to enter courses in Spanish composition and conversation (301) and Spanish literature (303). Not open to native speakers.

213H. Accelerated Intermediate Spanish II (Honors). 5 hours.

Not open to students with credit in SP 104, 104A, 104B, 104C, 114H, 201, or 202.

Prerequisite: SP 113H or equivalent.

Emphasis on advanced readings and grammar review. Also prepares students to enter courses in Spanish composition and conversation (301, 302H) and Spanish literature (303, 304H). Not open to native speakers.

255. Latino Literary, Linguistic, and Cultural Texts in the United States. 5 hours.

Not open to students with credit in ROM 255.

Cultural and literary contributions of the three major Latino groups in the U.S.: Puerto Rican, Chicano, and Cuban-American. Lectures in Spanish.

301. Spanish Conversation and Composition. 5 hours.

Not open to students with credit in SP 210.

Prerequisite: SP 104, 104A, 104B, 104C, 114H, 202, or 213H.

The emphasis is divided between conversation and composition. The two phases of the course are correlated to promote the students' ability to express themselves accurately whether in speaking or in writing Spanish. Given in Spanish. Not open to native speakers.

302H. Spanish Conversation and Composition (Honors). 5 hours.

Not open to students with credit in SP 210, 215H, or 301.

Prerequisite: SP 213H or equivalent.

See SP 301. May be substituted by Spanish majors/minors for SP 301. Given in Spanish. Not open to native speakers.

303. Critical Reading of Spanish Literature. 5 hours.

Not open to students with credit in SP 211.

Prerequisite or corequisite: SP 301.

An introduction to the critical reading and interpretation of Spanish and Spanish-American literature through the study of representative masterpieces in various genres. The student will be presented with the basic vocabulary and techniques of literary analysis and criticism. Given in Spanish.

304H. Critical Reading of Spanish Literature (Honors). 5 hours.

Not open to students with credit in SP 211, 216H, or 303.

Prerequisite: SP 213H or equivalent.

See SP 303. May be substituted by Spanish majors/minors for SP 303. Given in Spanish.

306. Spanish Conversation and Composition. 5 hours.

Prerequisite: SP 301.

Designed to provide additional practice in Spanish conversation and composition beyond SP 301. Given in Spanish. Not open to native speakers.

308. Business Spanish. 5 hours.

Prerequisite: SP 306 or permission of department.

Provides the language skills necessary for conducting commercial transactions in Spanish: business correspondence, advertising, banking, and politics of business. Given in Spanish.

310. Spanish Literature from the Middle Ages to 1700. 5 hours.

Prerequisite: SP 303 and 306.

Intensive reading and analysis of the major works of representative Spanish writers and study of the main literary movements beginning with the

Spanish

origins of Spanish literature and continuing through the 17th century. Given in Spanish.

311. Spanish Literature from 1700 to the Present. 5 hours.

Prerequisite: SP 303 and 306.

Intensive reading and analysis of the major works of representative Spanish writers and study of the main literary movements from 1700 to the present. Given in Spanish.

312. Spanish American Literature to the End of the 19th Century. 5 hours.

Prerequisite: SP 303 and 306.

Intensive reading and analysis of the major works of representative Spanish American writers and study of the main literary movements in Spanish American literature from its origins to the end of the 19th century. Given in Spanish.

313. Spanish American Literature from the End of the 19th Century to the Present. 5 hours.

Prerequisite: SP 303 and 306.

Intensive reading and analysis of the major works of representative Spanish American writers and study of the main literary movements from the end of the 19th century to the present. Given in Spanish.

321H. Modern Hispanic Literature (Honors). 5 hours.

Not open to students with credit in SP 311.

Prerequisite: SP 304H or 303 with Honors standing.

See SP 311. May be substituted by Spanish majors/minors for SP 311. Given in Spanish.

350. Spanish for Reading Knowledge. 5 hours.

Rapid survey of grammar, idioms and vocabulary; practice in translating moderately difficult technical and non-technical Spanish. Intended to assist graduate students to satisfy reading knowledge requirement, but does not carry graduate credit; not to be used to satisfy undergraduate language requirement; not open to Spanish majors.

410. Spanish Culture and Civilization. 5 hours.

Prerequisite: SP 306.

A study of the geography, history, arts, and letters of Spain from the beginnings to the present. Emphasis will be placed on the modern historical, political, and intellectual developments. Given in Spanish.

411. Spanish American Culture and Civilization. 5 hours.

Prerequisite: SP 306.

A study of the geography and complex process of the cultural, historical, and political evolution of the Spanish American countries from the origins of the indigenous civilizations to the present. Given in Spanish.

428. The Middle Ages. 5 hours.

Prerequisite: SP 310 or permission of department.

A course devoted to the principal literary works of the Spanish Middle Ages (1150-1500). Given in Spanish.

430. The Renaissance. 5 hours.

Prerequisite: SP 310 or permission of department.

A study of the representative literary works in the Spanish Renaissance, with emphasis on Encina, Torres Naharro, Lope de Rueda, and Garcilaso de la Vega and on the sentimental, picaresque, Moorish, and pastoral novels. Given in Spanish.

445. Don Quijote. 5 hours.

Prerequisite: SP 310 or permission of department.

A study of the *Quijote*, concentrating on an explanation of the text and on its style and themes. Given in Spanish.

470. Realism and Naturalism. 5 hours.

Prerequisite: SP 310 or 311 or permission of department.

A study of the nineteenth-century Spanish novel as it developed within the realist and naturalist literary movements. Given in Spanish.

481. Modernism. 5 hours.

Prerequisite: SP 312 or 313 or permission of department.

A study of Ruben Dario, his contemporaries, and followers. Given in Spanish.

490. Contemporary Spanish Literature. 5 hours.

Prerequisite: SP 311 or permission of department.

A study of the Spanish literature from 1939 (end of the civil war) to the present. Given in Spanish.

491. Contemporary Spanish-American Literature. 5 hours.

Prerequisite: SP 312 or 313 or equivalent or permission of department.

A study of contemporary writers since Modernism to the present, including various literary movements of the period. The course concentrates on those authors whose works are most relevant to an understanding of the cultural forces in Spanish America today. Given in Spanish.

496H, 497H, 498H. Directed Reading and/or Projects. 5 hours each.

Prerequisite: Junior/senior standing and permission of department.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

Prerequisite: Senior standing and permission of department.

This course provides the opportunity for Honors students to undertake individual research in the field of their major or in a closely related field.

507S. (LIN) Applied Spanish Linguistics. 5 hours.

Prerequisite: SP 306.

The applications of the science of linguistics to the methodology of teaching Spanish.

556. Advanced Spanish Syntax and Composition. 5 hours.

Prerequisite: SP 306.

A comprehensive review of grammatical forms and usages with particular reference to the needs of teachers of Spanish.

557S. (LIN) Spanish Phonetics. 5 hours.

Prerequisite: SP 306.

A study of the organs of speech, the difference in production of Spanish and English speech sounds, and the various speech phenomena. Practice in phonetic transcription, pronunciation, and intonation.

570S. (LIN) History of the Spanish Language. 5 hours.

Prerequisite: SP 306.

A history of the development of the Spanish language from Latin to the present. Given in Spanish.

590P. Spanish for Advanced Placement Teachers. 3 hours.

Prerequisite: Permission of department.

An intensive course that identifies, describes and analyzes the subject matter to be taught in Advanced Placement courses in the Spanish language, equivalent to a 3rd-year college level. It discusses effective strategies of instruction in order to attain goals in terms of communicative competence.

Science (SCI)

Contact Person: Dr. Alex Rosenberg,
542-3240

207H, 208H, 209H. Honors Science. 6, 7, and 7 hours respectively.

Satisfies total Natural Science requirement of A.B. and related majors, including majors in art, drama and music which carry a 20-hour science requirement. Laboratory exercises average 2 hours/week over the three-quarter sequence as an integral part of the course(s). The course sequence presents the basic concepts of biology, chemistry, geology, and physics in an integrated fashion. It traces the evolution of the universe

from the primordial state to the present time, and, in particular, considers man's interaction with his surroundings. NOTE: Not open to students in B.S. degree programs in Arts and Sciences.

Social Science (SOS)

The following courses are offered under the general direction of the Chairman of the Division of Social Sciences.

104. Contemporary Georgia. 5 hours.

A survey course dealing with current economic, social and political situations in Georgia. Basic geographical features, historical highlights and cultural heritage are included. A study of state government organization including education, agriculture, industry, welfare programs, offender rehabilitation and related legislative and executive action. Changes resulting from population mobility are noted. Also see pages on Examinations on the Constitution in the Academic Information Section.

399. Georgia Intern Program. 5-15 hours. Repeatable for maximum 15 hours credit.

Prerequisite: Upper division standing, permission of department.

Participation in the activities of a state, county, or municipal agency or governmental office under the direction of a faculty member. The project shall be related to at least one of the academic disciplines of the division.

Sociology (SOC)

Contact Person: Dr. Martha A. Myers,
542-3195

104H. Introductory Sociology (Honors). 5 hours. Not open to students with credit in SOC 105.

A general introduction to fundamental concepts, theories, methods and major subfields of sociology. Among other purposes will be that of showing the relationships of sociology to other fields of study.

105. Introductory Sociology. 5 hours.

An introduction to the sociological analysis of society, its origins, structure, change and problems. Emphasis is on the nature of culture, social interaction, social groups and social institutions.

111. American Society. 5 hours.

An analysis of the major institutions and processes in contemporary American society, including cultural beliefs, work and stratification, family patterns, political and economic issues, and education.

160. Contemporary Social Problems. 5 hours.
A study of the major problems of our times and their social and cultural causes and consequences. The course will deal with society's perception of these social issues and attempts to resolve these problems.

200. Sociology in Film. 5 hours.
Prerequisite: SOC 105, 111, 160 or 104H.

An examination of sociological concepts and issues through the medium of feature-length film. The course is organized around contemporary social themes and problems, including the inequalities of race and class, social movements and social change, family life, work, and human development.

210. (GGY/ANT/CML/HIS) Introduction to Africa. 5 hours.
See GGY 210.

211. Social Organization. 5 hours.
Prerequisite: SOC 105, 111, 160, or 104H.
The study of a general model of the social system and the development of a consistent set of theories concerning the structure and process of groups and such complex systems of behavior as organizations, communities and societies.

240. Environmental Sociology. 5 hours.
Prerequisite: SOC 105, 111, 160, or 104H.
This course is concerned with the ways in which society relates to and utilizes its environment. Among topics discussed are the social factors contributing to environmental degradation and resource depletion, the environmental movement, and agricultural ecology.

270. Social Class and Class Conflict in the United States. 5 hours.
Prerequisite: SOC 105, 111, 160, or 104H.
A study of the causes and consequences of social class and class conflict in the United States. Emphasis is on the role of the organization of production in affecting class formation and composition.

275. Sociology of Work and Industry. 5 hours.
Prerequisite: SOC 105, 111, 160, or 104H.
A survey of the structure of work and industry with special emphasis on how that structure affects the lifestyles and life chances of workers.

280. Discrimination and Poverty in America. 5 hours.
Prerequisite: SOC 105, 111, 160, or 104H.
A survey of the causes and social consequences of race and gender discrimination as well as discrimination against the poor in the United States. Particular attention is given to contrasting social-

psychological, structural, and institutional explanations of poverty and discrimination.

301. Sociology of Contemporary American Culture. 5 hours.
Prerequisites: SOC 105 or 111 or 160.
Recent trends in American culture, focusing on cultural beliefs, traditions, forms of behavioral practice, and the symbolic products of group activity such as books, music, and film.

302. Black American Society. 5 hours.
Prerequisite: SOC 105, 111, 160, or 104H.
A sociological analysis of Black institutions (e.g. family, religion, education) in relation to contemporary American society.

307. Juvenile Delinquency. 5 hours.
Prerequisite: SOC 105, 111, 160, or 104H.
An analysis of the nature, extent, and causes of juvenile delinquency with special emphasis on the juvenile justice system, evaluation research techniques and research findings.

310. Sociology of Medicine. 5 hours.
Prerequisite: SOC 105, 111, 160, or 104H.
A sociological analysis of the interrelationship between illness and the social system. Special attention is given to health care organizations.

328. Sociology of Gender. 5 hours.
Prerequisite: SOC 105, 111, 160, or 104H.
An analysis of the structure of sex roles in American Society as well as relevant cross-cultural comparisons. The course will include an analysis of sex role differences, the intermeshing of sex roles and social change, sex as a stratifying variable and the social-psychological aspects of femininity and masculinity.

330. Racism and Sexism Across Cultures. 5 hours.
Prerequisite: SOC 105, 111, 160, or 104H.
Racial and gender discrimination in countries around the globe. Sociological theories of discrimination are used to develop explanations of racism and sexism. Readings reflect present-day situations in Western and Eastern Europe, Africa, Asia, Latin America, the Middle East, and North America.

335. The Community. 5 hours.
Prerequisite: SOC 105, 111, 160, or 104H.
A study of the community as a unit of social organization. Special attention will be given to trends in community organization and planning.

356. The Analysis of Sociological Data. 5 hours.
Prerequisite: SOC 105, 111, 160, or 104H; and STA 200.
A survey of the applications of quantitative analyses to social research.

370. (POL) Social Science Research Design. 5 hours.

See POL 370.

373. Social Psychology. 5 hours.

An upper-level, in-depth analysis of the social bases of behavior including the origins and development of social competence, the interaction of individuals with groups, social motivation, suggestion, and attitudes. Methods of research in social psychology with an emphasis on the use of experimental techniques and exposure to research literature.

381. Criminology. 5 hours.

Prerequisite: SOC 105, 111, 160, or 104H.

The study of the nature, extent, and factors related to criminal behavior. Focus will be on the criminal justice system, the police, the judiciary and corrections (probation, imprisonment, parole, work release, and halfway houses).

404. Community Development. 5 hours.

Prerequisite: SOC 105, 111, 160, or 104H.

A study of approaches, principles, techniques, and programs of comprehensive community development.

406. Education and Society. 5 hours.

Prerequisite: SOC 105, 111, 160, or 104H.

A survey of theoretical and empirical research concerning the interaction of education and society. Topics include the influence of schools on achievement, college attendance, and occupational attainment as well as the history of educational expansion in the United States and other parts of the world.

409. Social Change. 5 hours.

Prerequisite: SOC 105, 111, 160, or 104H.

The social process of social change, causes, types and theories of change.

415. Criminal Punishment and Society. 5 hours.

Prerequisite: SOC 105, 111, 160, or 104H.

The course will include a review of principles of corrections, field observation and analysis of current practices, evaluation of observations and development of career potential in various aspects of criminal justice administration.

419. Qualitative Sociological Methods. 5 hours.

Prerequisite: SOC 356 or permission of department.

Qualitative forms of sociological research with direct experience carrying out sociological research using qualitative techniques. Primary emphasis is on participant observation, intensive interviewing, and analysis of text.

420. Methods of Social Research. 5 hours.

Prerequisite: SOC 105, 111, 160, or 104H; and SOC 356.

Scientific methods of social research, considerations in research design, sources of data and data collection, qualitative and quantitative techniques for measurement, analysis and inference of social data.

422. Development of Sociological Theory. 5 hours.

Prerequisite: SOC 105, 111, 160, or 104H.

A survey of sociological theory in the 19th and early 20th centuries, beginning with Comte and concluding with Merton, Parsons and Homans.

423. German Social Theorists. 5 hours.

Prerequisite: SOC 105, 111, 160, or 104H.

An analysis of German sociological thought in the 19th and 20th centuries. The course will focus on three major theorists (Marx, Simmel and Weber) and three major systems of thought (critical theory, phenomenology, and the sociology of knowledge).

424. Sociology of War and the Military. 5 hours.

Prerequisite: SOC 105 or 111 or 160.

Origins, nature, experience, and future of warfare; modern military organization as a social institution; contemporary social issues surrounding militarism and the military.

425. Social Movements. 5 hours.

Prerequisite: SOC 105, 111, 160, or 104H.

A critical examination of major theoretical approaches for understanding and analyzing contemporary social movements. Particular focus will be on historical and comparative analyses of social movements in America during the 60s and 70s, such as the civil rights movement, peace movement, and women's movement.

426. Modern Sociological Theory. 5 hours.

Prerequisite: SOC 105, 111, 160, or 104H.

A systematic analysis of the trends and developments in sociological theory since about 1920. Particular emphasis is placed on the current state of sociological theory and its relationship to empirical research.

427. Personality and Social Structure. 5 hours.

Prerequisite: SOC 105, 111, 160, or 104H.

A study of the foundation and development of personality; mechanisms of integration and adjustment; roles of culture, groups and language; concepts of self; types and theories of personality; deviant personalities.

429. Sociology of Religion. 5 hours.

Prerequisite: SOC 105, 111, 160, or 104H.

An overview of religion as a social institution. The organization of religious groups, the integrative function of religion in social systems, and the influence of religious group membership on

behavior in other institutional areas will receive special emphasis.

431. Rural Social Systems. 5 hours.

Prerequisite: SOC 105, 111, 160, or 104H.

An investigation into the characteristics and the organization of the changing rural society. Analysis of the social organization of agriculture and rural-urban relations will be emphasized.

437. Race Relations in the United States. 5 hours.

Prerequisite: SOC 105, 111, 160, or 104H.

An examination of the social problems associated with race and minority relations in contemporary American society.

440.(ANT/POL) Socio-Political Ecology. 5 hours.

Not open to students with credit in SOC(ANT) 438.

Prerequisite: Junior or senior standing in biological or social sciences.

An examination of the complex relationships among human systems and their environments from the perspective of socio-political ecology. Ecological theories and perspectives in the social and natural sciences are applied to understanding environmental policies and problems.

442. American Stratification System. 5 hours.

Prerequisite: SOC 105, 111, 160, or 104H.

An analysis of the nature of social status systems, and of the form social stratification takes in the United States. Topics covered include: perception of class distinctions, prestige and power, criteria of status evaluation, class effects on social relationships and lifestyles, class and personality development.

459. Community Reconnaissance Methods. 5 hours.

Prerequisite: SOC 105, 111, 160, or 104H.

A study and application of methods of research in community organization for action programs. The application will include schedule preparation, field interviews, analysis of data and preparation of community reports.

461. (CFD) The Family. 5 hours.

See CFD 461.

465. Sociology of Aging. 5 hours.

Prerequisite: SOC 105, 111, 160, or 104H.

An examination of the sociological approaches to aging, the status of older people, their roles in the community and society, demographic aspects of aging, and their interrelationships with society and social institutions.

466. Aging and Modernization: Cross-Cultural Studies. 5 hours.

Prerequisite: SOC 105, 111, 160, or 104H.

An analysis of the aging experience in different societies and historical periods. The course will focus on differences in patterns of aging among societies of varying levels of modernization and on the impact on age relations in the transition from an agrarian economy to an industrial one.

483. Sociology of Law. 5 hours.

Prerequisite: SOC 105, 111, 160, or 104H.

A study of the social nature of law, and how the legal system reflects the broader social context within which it exists. Topics include legal philosophy, legal systems, law and mental health, cross-cultural comparisons, and the legal profession.

485. Sociology of Occupations. 5 hours.

Prerequisite: SOC 105, 111, 160, or 104H.

A comparative study of work positions and roles in modern American society with emphasis given to such topics as occupational choice, socialization, worker adjustment, prestige, and mobility.

486. Sociology of Alcohol and Drug Use. 5 hours.

Prerequisite: SOC 105, 111, 160, or 104H.

Sociological analysis of the roles, functions, and dysfunctions linked to the use of psychoactive substances in contemporary societies, especially alcohol; additional focus on illegal and legal drugs other than alcohol. Emphases include the social-structural and cultural changes that have accompanied different control strategies; social etiology; socio-epidemiological patterns.

490. Senior Seminar in Sociology. 5 hours.

Prerequisite: SOC 105, 111, 160, or 104H.

A program of semi-independent study including reading, writing, and discussions on sociologically relevant topics of interest to the student.

496H, 497H, 498H. Directed Reading and/or Projects. 5 hours each.

Prerequisite: SOC 105, 111, 160, or 104H.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

498. Supervised Research in Sociology. 5 hours, repeatable for maximum 15 hours credit.

Prerequisite: SOC 105, 111, 160, or 104H.

Students are individually supervised in their participation in a research project that includes a review of the literature, data collection, data analysis and interpretation of research findings.

499. Senior Thesis. 5 hours.

Prerequisite: Sociology major, senior standing, and permission of department.

Senior thesis in sociology provides the opportunity to earn distinction within the department through a demonstration of scholarship with the completion of a faculty supervised thesis.

499H. Honors Thesis. 5 hours.

Prerequisite: SOC 105, 111, 160, or 104H.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

550ABC. (POL) Internship in Criminal Justice.

5 hours each; maximum 15 hours.

See POL 550ABC.

Speech Communication (SPC)

Contact Person: Dr. Don Rubin, 542-4893

Basic Speech Communication Courses

101. Communication in Human Society. 5 hours.

The role of speech in the constitution of human beings and their interrelationships. Exploration of the general character of speech as communication and its variations in public, group, and interpersonal settings.

108. Fundamentals of Speech Communication. 5 hours.

A first course in the fundamental principles of effective oral communication. Special attention is given to the selection and organization of materials, the presentation of speeches, and the development of an acceptable speaking voice.

109. Interpersonal Communication. 5 hours.

Study of communication as it occurs in two-person and small group settings. Primary concern is given to understanding how an individual can use verbal and nonverbal communication to improve relationships and derive maximum social rewards. Emphasis is placed on student involvement in class exercises and discussions.

128. Cultural Diversity in Communication. 5 hours.

Patterns of public and interpersonal communication among ethnic and national groups, especially North American minority cultures, difficulties in inter-group communication, and skills for improving the quality of those interactions.

218H. Oral Communication as a Liberal Art (Honors). 5 hours.

Not open to students with credit in SPC 108.

Deals with the evolution of the social theory, including the classical canons of invention, disposition, style, and delivery as applied to contemporary public address.

219H. Introduction to Interpersonal Communication Theory, Research and Practice (Honors). 5 hours.

Not open to students with credit in SPC 109.

An introduction for Honors Students to communication as it occurs in dyads and small groups. Through lectures, class discussions and exercises, students will critically examine theory and research in Interpersonal Communication. Emphasis will be placed both on learning about the communication process and on becoming a more effective participant in it.

240. Oral Decision Making. 5 hours.

An introduction to the theory and practice of democratic decision making, from researching a topic systematically in specialized library sources to reaching a workable solution through group discussion. Second phase will involve theory and practice of debating and implementing decisions through parliamentary procedure.

250. Public Speaking. 5 hours.

Prerequisite: SPC 108 or 109 or permission of department.

A study of the various forms of public address; practice in the preparation and delivery of several types of speeches.

251. Applied Public Communication. 5 hours.

Prerequisite: SPC 108 or permission of department.

Emphasizes student practice in public communication contexts such as press conferences, media interviews, and persuasive speaking to hostile audiences. Extensive use of videotape.

256. Introduction to Small Group Communication. 5 hours.

Prerequisite: SPC 108 or 109 or permission of department.

Emphasizes student involvement in groups working on socially significant projects of their own choice. Factors which affect quality of communication and group outcomes—interpersonal and task behaviors, leadership, norms, conflict resolution, and creativity—are examined.

267. Introductory Interviewing. 5 hours.

Designed to familiarize the student with interpersonal communication factors operating in the dyadic setting and to give the student experience in dealing with a variety of situations. Information gathering, problem solving, and persuasive communication skills are examined with attention given to the ways in which an interviewer applies skills across a variety of dyadic contexts.

268. Communication in African American Communities. 5 hours.

Not open to students with credit in SPC 468.

Rhetorical strategies and patterns of orality in African American communication, cultural

Speech Communication

communication styles in conflict, and skill development for cultural interaction.

301. Introduction to Rhetorical and Communication Theory. 5 hours.

Not open to students with credit in SPC 320 and 359.

Prerequisite: SPC 101 or 108 or 109.

The scope, questions, and presumptions employed in the study of human communication. Major theories within rhetorical and scientific traditions will be surveyed.

Courses Required for Major

321. Empirical Research Methods in Interpersonal Communication. 5 hours.

Prerequisite: STA 200

An introduction to social science research methods in interpersonal communication. Covers formalizing research questions, conceptual and operational definitions, hypothesis testing, measurement, sampling and randomness, research design, and computer assisted analysis.

360. Introduction to Rhetorical Criticism. 5 hours.

Not open to students with credit in SPC 455.

The study of rhetorical approaches to criticism of public discourse.

Advanced Public Communication Courses

359. Foundations of Rhetorical Theory. 5 hours.

Not open to students with credit in SPC 459.

An historical survey of rhetorical theory from the classical to the contemporary world.

450. Theories of Argumentation. 5 hours.

Prerequisite: SPC 360.

Process by which people give reasons to justify their acts, beliefs, attitudes and values, and to influence the thought and action of others. Emphasis will be placed on traditional and contemporary theories of argumentation and critical analysis of public argument.

462. Communication Strategies in the Courtroom. 5 hours.

Prerequisite: SPC 360 or permission of department.

Examines modern communication theories and their application to legal proceedings.

463. Communication Strategies in Government. 5 hours.

Prerequisite: SPC 360 or permission of department.

A study of communication strategies and activities in the executive and legislative branches of

American government, with some emphasis on communication case studies.

464. Communication Strategies in Religion. 5 hours.

Prerequisite: Two senior division courses in social science, journalism, or related areas.

A study of the theory and practice of communication in religious settings. Emphasis will be placed on communication within particular religious communities and communication from such groups to society generally.

465. Communication Strategies in Political Campaigns. 5 hours.

Prerequisite: SPC 360 or permission of department.

The role communication plays in deciding which candidate will run for office, the nomination of candidates, and the election of candidates to office.

468. Studies in Black Communication. 5 hours.

Prerequisite: SPC 360 or permission of department.

A study of the history and criticism of the communication of Black speakers, with emphasis upon oral rhetoric relating to social-political developments since 1860.

469. Communication Strategies in Social Movements. 5 hours.

Prerequisite: SPC 360 or permission of department.

An examination of the rhetorical nature of social movements with theories of communication strategies applied in several case studies.

472. Communication Strategies in International Affairs. 5 hours.

Prerequisite: SPC 360 or permission of department.

A study of the communication strategies of nations in two focal areas. First, the intra-national communications involved—such as Presidential speeches to the public and Congress; discussions by Cabinet members (e.g., before the Cuban Missile Crisis) or Congressional Committees (e.g., in Tonkin Resolution). Second, the strategies of nations communicating with each other in settings like the U.N., the Munich Conference, and the Versailles Treaty negotiations. Attention will be given both to case studies and general principles or theories.

476. Contemporary Rhetorical Theory. 5 hours.

Not open to students with credit in SPC 478.

Prerequisite: SPC 360 or permission of department.

Contemporary approaches to the study of human discourse. Students examine theories of meaning, knowledge, and argument, and explore their relationships to rhetorical choice.

Advanced Interpersonal Communication Courses

320. Interpersonal Communication Theory. 5 hours.

Not open to students with credit in SPC(JRL) 520. Prerequisite: SPC 108 or 109.

A review of major theories of human communication, with special emphasis upon interpersonal communication. The role, function, and assumptions of theoretical approaches will be discussed.

424. Nonverbal Communication. 5 hours.

Prerequisite: SPC 321.

Designed to familiarize the student with the fundamental nature and functional importance of nonverbal communication in interpersonal interaction. Particular emphasis is placed on the potential of each system for attaining the individual's communicative objectives. Each student's capacity to transmit and perceive meanings nonverbally is tested and training provided for the development of this capacity. The student uses knowledge and experience gained from participation in class to diagnose and analyze communication problems most closely associated with nonverbal communication. The learning experience is heightened by the use of communication labs which concentrate on the different nonverbal communication systems.

425. Advanced Interpersonal Communication. 5 hours.

Prerequisite: SPC 321.

Familiarizes the student with the fundamental nature of and problems in interpersonal and group communication. Communication is studied from the scientific perspective with emphasis on factors that measurably affect quality of communication. Students analyze communication situations of their own choice.

428. Intercultural Communication. 5 hours.

Prerequisite: SPC 321.

Introduces the student to the difficulties encountered when persons from different cultures communicate. Thus, the effect of culture upon communication is stressed. Simulations are used to provide the students with experience attempting to communicate across cultural barriers and stimulate development of skills for intercultural communication. Both theoretical and practical problems of intercultural communication are analyzed.

433. (HPB) Health Communication. 5 hours.

Communication about health with physicians and other providers, within support groups and health care organizations, and by public figures, groups, and organizations.

452. Persuasion. 5 hours.

Prerequisite: SPC 321 or permission of department.

A study of the way in which beliefs, attitudes, values and behavior are formed and changed.

456. Small Group Communication. 5 hours.

Prerequisite: SPC 321.

A study of the theory and techniques of group discussion with emphasis on current experimentation and research.

466. (PSY) Psychology of Speech Communication. 5 hours.

Prerequisite: SPC 321 or permission of department.

A study of speech as a psychological phenomenon with consideration of the use of symbols, the speech personality, emotional reactions, and mental processes in speech communication, and psychological studies of language and vocal and visual symbolism.

467. (MAN) Interviewing. 5 hours.

Prerequisite: Junior or senior standing.

A review of various theories of interpersonal communication and of pertinent research in the area of interviewing. Application of modern communication theory to interview situations. A consideration of the various types of interviews and the problems unique to each type with a variety of teaching techniques employed.

Special Topics in Speech Communication

490. Special Topics in Speech Communication. 5-10 hours. Repeatable for maximum 10 hours credit.

Prerequisite: Two senior division courses in social science, journalism or related areas.

Course to be taught in Speech Communication as an extension of present subject areas and in speech communication topics not covered by present curriculum.

491. Internship. 5-10 hours. Repeatable for maximum 10 hours credit.

Prerequisite: Junior standing and (SPC 101 or 108 or 109 or 218H or 219H) and SPC 321 and 360.

Supervised experience in applied communication. Entails applying rhetorical and communication theory to analyze communication in organizational contexts.

496H, 497H, 498H. Directed Reading and/or Projects. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

Statistics (STA)

Contact Person: Dr. Robert Taylor or Dr. Kermit Hutcheson, 542-5232

200. Elementary Statistics. 5 hours.

Not open to students with credit in STA 210H or 221 or 421 or MS 312-312L.

An elementary course in statistics at a level which requires algebra but not calculus. Topics include basic material on descriptive statistics, probability, distributions, random variables, sampling distributions, estimation, confidence intervals, hypothesis testing, and simple linear regression.

210H. Statistics and Computer Programming I (Honors). 5 hours.

Not open to students with credit in STA 200 or CS 500 or MS 312-312L.

Prerequisite: Credit for or exemption from MAT 102.

Statistical distributions and their uses, sampling theory, statistical decision-making, hypothesis testing, estimation, sample size determination, with programming and computer application.

211H. Statistics and Computer Programming II (Honors). 5 hours.

Not open to students with credit in STA 200 or CS 500.

Prerequisite: STA 210H.

Regression and correlation, introduction to experimental design, sample survey design, statistical classification techniques, with programming and computer applications.

221. Introduction to Statistics and Programming I. 5 hours.

Not open to students with credit in STA 200 or CS 500.

Prerequisite: Credit for or exemption from MAT 102.

Statistical methods and programming, descriptive statistics, distribution models, sampling theory, testing statistical hypotheses, parameter estimation.

222. Introduction to Statistics and Programming II. 5 hours.

Not open to students with credit in STA 200 or CS 500.

Prerequisite: STA 221.

Continuation of STA 221. Statistical decision-making, regression and correlation, introduction to experimental design and analysis of variance, sample survey techniques.

410. Applied Stochastic Processes. 5 hours.

Not open to students with credit in MAT(STA) 473 or STA 870.

Prerequisite: MAT 255 and 256.

Basic concepts of applied probability as an introduction to stochastic processes including discrete, continuous and conditional probability concepts. Definitions and properties of stochastic processes. Markov processes and chains, basic properties, transition matrices and steady states. Reliability, renewal and queueing processes. Queueing theory, expected waiting times, single and multiserver queues.

421. Statistical Methods I. 5 hours.

Prerequisite: Credit for or exemption from MAT 102.

Basic concepts of statistical models, descriptive statistics, basics of probability, expectation, variance, probability distributions, point and interval estimation of parameters, concepts of hypothesis testing, goodness-of-fit tests and contingency tables. Special sections for social scientists and biological scientists are provided; these sections are designated in the *Schedule of Classes*.

422. Statistical Methods II. 5 hours.

Prerequisite: STA 421.

Regression analysis including simple linear regression, multiple regression, model checking and analysis of residuals, correlation and prediction; analysis of variance including basic concepts, completely randomized design, randomized block design, factorial designs, interaction, and covariance. Special sections for social scientists and biological scientists are provided; these sections are designated in the *Schedule of Classes*.

424. Sampling and Survey Methods. 5 hours.

Prerequisite: STA 421.

Design of sample surveys, biases, variances and cost estimators. Comparison of simple random sampling, ratio estimation, stratification, multi-stage sampling.

425. Environmental Statistics. 5 hours.

Prerequisite: STA 422.

Methods for sampling the environment and data analysis, including spatial statistics, environmental variables, environmental toxicology, and epidemiology.

426. Statistical Quality Assurance. 5 hours.

Prerequisite: STA 422.

Basic graphical techniques and control charts. Experimentation in quality assurance. Sampling issues. Other topics include process capability studies, error analysis, SPRT, estimation and reliability.

427. Least Squares Methods. 5 hours.

Prerequisite: STA 422 and 451.

Least squares using matrix notation. Techniques of matrix algebra and calculus applied to regression and experimental design.

428. Applied Time Series Analysis. 5 hours.

Prerequisite: STA 422.

Autoregressive, moving average, autoregressive-moving average, and integrated autoregressive-moving average processes; seasonal models, autocorrelation function; estimation; model checking; forecasting; spectrum, spectral estimators.

429. Non-Parametric Methods. 5 hours.

Prerequisite: STA 421.

Techniques and application of non-parametric tests. Estimates, confidence intervals, one sample tests, two sample tests, analysis of variance, correlation tests.

436. Statistical Computation. 5 hours.

Prerequisite: STA 422, CS 201-201L, MAT 256. Algorithms for data analysis computation, characteristics of and criteria for evaluating statistical packages, use of and interpretation of output from current statistical packages.

438. Survival Analysis. 5 hours.

Prerequisite: STA 422.

Methods for comparing time-to-event data, including univariate parametric and nonparametric procedures, regression models, diagnostics, group comparisons, and some multivariate methods.

451. Statistical Theory I. 5 hours.

Prerequisite: MAT 255 or equivalent.

Concepts and properties of standard statistical distributions.

452. Statistical Theory II. 5 hours.

Prerequisite: STA 451.

Theory of statistical inference.

471, 472, 473. (MAT) Introduction to Probability Theory. 3 hours each.

See MAT 471, 472, 473.

496H, 497H, 498H. Directed Reading and/or Projects. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

Swahili (SWA)

Contact Person: Dr. Lioba Moshi, 542-2133

101. Elementary Swahili I. 5 hours.

Fundamentals of grammar, pronunciation, conversation, composition, reading, and translation. Additional language laboratory work required.

102. Elementary Swahili II. 5 hours.

Prerequisite: SWA 101.

A continuation of SWA 101, Elementary Swahili I.

201. Intermediate Swahili I. 5 hours.

Prerequisite: SWA 102.

Grammar, reading and translation of intermediate texts, composition, and conversation. Additional language laboratory work required.

202. Intermediate Swahili II. 5 hours.

Prerequisite: SWA 201.

A continuation of SWA 201, Intermediate Swahili I.

301. Advanced Swahili I. 5 hours.

Prerequisite: SWA 202.

Designed to prepare students to work with authentic Swahili material in literary writings. The focus will be on critical reading and the interpretation of standard and colloquial Swahili.

302. Advanced Swahili II. 5 hours.

Prerequisite: SWA 301.

A continuation of SWA 301. The main focus will be on reading and interpreting scientific materials, Swahili literature, documents and other archival materials. A substantial amount of time will be spent on historical and cultural aspects of the language.

399. Directed Study in Swahili Language and Literature. 1-5 hours. Repeatable for maximum 15 hours credit.

Prerequisite: Permission of department.

Independent study and research under the direction of individual faculty members.

Women's Studies (WS)

Contact Person: Dr. Patricia Del Rey, 542-2846

201. Introduction to Women's Studies. 5 hours.

Prerequisite: Sophomore standing or permission of Director.

An interdisciplinary approach to the study of women of diverse racial, ethnic, and class backgrounds. Topics include contemporary concerns within women's studies: labor markets, health, reproduction, socialization, language, media representations, law and public policy.

211. Multicultural Perspectives on Women in the United States. 5 hours.

Experiences of women in selected racial and ethnic communities; Latinas/Chicanas, African American, Native American, Asian American and other women in contemporary United States.

399. Directed Studies in Women's Studies. 1-5 hours. Repeatable for maximum 10 hours credit.

Prerequisite: Five hours of women's studies course work and permission of department.

Readings and independent research closely supervised by a faculty member on a specified interdisciplinary topic in women's studies.

401. Introduction to Feminist Theory. 5 hours. Not open to students with credit in WS 301.

Prerequisite: WS 201.

Interdisciplinary investigation of the historical origins, philosophical assumptions, and political implications of contemporary feminist theories.

402. Seminar in Advanced Feminist Studies. 1-5 hours. Repeatable for maximum 15 hours credit.

Prerequisite: WS 201 or 401 or 411.

Topics of scholarly interest in advanced feminist theory.

410. Lesbian and Gay Studies. 5 hours.

Prerequisite: Five hours of women's studies course work or permission of department.

Multicultural, interdisciplinary investigation of same-sex desire, heterosexuality, homosexuality and the regulation of sexual identities across different racial/ethnic and class/regional commu-

nities. Focusing on Native-American, African-American, Latino, Asian-American and international studies, with texts from law, anthropology, history, film, fiction, and theory.

411. Gender, Race, and Class. 5 hours.

Not open to students with credit in WS 310.

Prerequisite: WS 201 or 211 or permission of department.

Historical and social constructions of gender, race, and class which have shaped the productive, reproductive, political, and cultural experiences of women of diverse backgrounds in the United States.

412. Biology and Politics of Women's Reproduction. 5 hours.

Prerequisite: Five hours of women's studies course work or permission of department.

Variations in experiences across women's reproductive life cycles from the perspective of evolutionary biology and the political theory of radical feminism. Topics include puberty, sexual cycling, menarche, pregnancy, child birth, and menopause. Feminist critiques of science are explored.

425. Special Topics in Women's Studies. 5 hours. Repeatable for maximum 20 hours credit.

Prerequisite: Five hours of women's studies course work.

Ongoing and current topics of scholarly interest in women's studies.

The C. Herman and Mary Virginia Terry College of Business &

THE J.M. TULL SCHOOL OF ACCOUNTING

R. Preston Brooks Hall, 542-8100

Administrative Officers

Albert W. Niemi, Jr., A.B., M.A., Ph.D., *Dean*
James S. Trieschmann, B.S., B.A., M.B.A.,
D.B.A., *Associate Dean*

Kay L. Keck, B.S., M.B.A., Ph.D., *Director of
Graduate Programs*

Elizabeth A. Barth, B.A., M.A., Ed.D., *Director
of Undergraduate Programs*

F. George Marable, B.B.A., *Business
Manager*

General Information

PURPOSE AND ORGANIZATION

The Terry College of Business intends not only to teach undergraduate and graduate students, but also to conduct a broad program of basic and applied research and to render extensive service to society. The particular task is one of educating persons for the practice of business administration.

Although students may be admitted to the Terry College of Business as freshmen or sophomores, the attainment of a broad education requires students to concentrate much of their first two years in liberal arts courses. The major portion of the remaining two years is focused on a common body of knowledge in business administration. In addition, students are required to concentrate on an area of specialized study.

The fields of specialization include accounting, economics, finance, general business, international business, location analysis, management, management information systems, marketing, organization management, real estate, and risk management and insurance.

FACILITIES

The Terry College of Business uses all of the facilities of the University, including the Computer Center and other units.

Most of the administrative offices are located in the five-story R. Preston Brooks Hall on the north campus. The majority of business courses are taught in Caldwell Hall, a seven-story classroom building adjacent to Brooks Hall.

ACCREDITATION

The Terry College of Business is a member of the American Assembly of Collegiate Schools of Business, the recognized national accrediting association for collegiate schools of business.

Student Services

ACADEMIC ADVISING

Academic advisement in the College is coordinated by the Director of Undergraduate Programs. Freshmen and sophomores are advised in the Lower Division Advising Center. Accounting students, International Business students, Honors Program students, and upper division students are advised in their respective departments. Each major department has a coordinator of advisors who is responsible for supervising the overall advisement program in his/her particular department.

Special Programs and Services

HONORS PROGRAM

In September 1963, the faculty of the Terry College of Business established an honors program, which is now coordinated with the University's Honors Program. Under this program, a student who has the academic qualifications for honors work may carry a full program of such studies through the major part of the junior year. Honors sections are

not provided in major courses, for it is believed that normally close working relations with professors at that level makes such action unnecessary.

Admission of students to the Honors Program is by invitation only. Beginning freshmen are admitted on the basis of high school grades and scores on the College Entrance Examination Board Scholastic Aptitude Tests, and on the basis of placement and qualifying examinations administered by the University. For all other students, grades made at the University determine admission to the program. To be admitted to the program and to remain in it, a student should have a cumulative scholastic average of 3.5 and obtain approval of the College.

Honors courses available in the Terry College of Business include: Principles of Accounting I and II (ACC 112H and 113H); The Legal Environment of Business (LS 280H); Principles of Economics I and II (ECN 116H and 117H); Economic Development of the United States (ECN 243H); Introduction to Computing and MIS (MAN 219H-219L); Statistical Analysis for Business (MS 322H); Labor Economics (ECN 396H); Money and Banking (ECN 336H); Business Finance (FIN 337H); and Principles of Marketing (MKT 369H); Honors Thesis, various departments.

SELIG CENTER FOR ECONOMIC GROWTH

The Selig Center serves the state by bringing the college's resources to bear on economic growth and development. The Selig Center brings widespread recognition to the University of Georgia through its economic forecasts, major studies, publications, press releases, information services, and data products.

The Selig Center houses the Georgia Economic Forecasting Project, which is primarily concerned with projecting Georgia's future growth. The Center holds a series of economic outlook conferences in Albany, Atlanta, Augusta, Brunswick, Columbus, Macon, Savannah, and Thomasville. The conferences and the *Georgia Economic Outlook* publication provide forecasts and detailed commentary on eight economic sectors: agriculture, construction, public utilities, financial markets, manufacturing, services, hospitality, and trade. The Georgia Economic Forecasting Project also forecasts U.S. and regional retail sales, with special

emphasis on the back-to-school and holiday shopping seasons, as well as total and black buying power for the U.S., all states, and Georgia's eight MSAs and 159 counties.

The Selig Center is a primary source of economic information for business leaders, the media, government agencies, and the general public. The Center serves as an advisor/consultant to many groups, including the Atlanta Committee for the Olympic Games, the Georgia World Congress Center Authority, the Northeast Georgia Surface and Air Transportation Commission, the 316 Alliance, Inc., *Georgia Trend* magazine, the Athens Convention and Visitor's Bureau, and the Athens Chamber of Commerce.

The Selig Center is a founding member of the Association for University Business and Economic Research and is a voting member of the National Retail Federation. The Selig Center is an official cooperating agency with the U.S. Bureau of Economic Analysis and serves a similar function for the Construction Statistics Division, U.S. Bureau of the Census.

The Selig Center publishes *Georgia Business and Economic Conditions*, a bimonthly business periodical, and the *Georgia Statistical Abstract*, a comprehensive collection of basic business, economic, and demographic statistics.

Degrees Offered

The Terry College of Business offers the undergraduate degree, Bachelor of Business Administration. The School of Accounting offers a five-year course of study leading to a B.B.A./M.Acc. degree.

Several graduate degree programs in business are described in the *Graduate School Bulletin*, including the Master of Business Administration, Master of Accounting, Master of Marketing Research, and the Master of Arts and Doctor of Philosophy degrees in business-related fields. Also offered are joint degree programs in Master of Business Administration-Law and Master of Accountancy-Law. Information on any of these graduate degree programs may be obtained by writing the Director of Graduate Programs within the Terry College of Business.

Bachelor of Business Administration Degree Requirements

All students should acquaint themselves with the degree requirements applicable to all students of the University as set forth in the General Information section of this bulletin.

In order to qualify for a Bachelor of Business Administration degree, a student must meet the entrance requirements which may vary from other schools and colleges within the University, be enrolled in one of the major disciplines, and meet all of the degree requirements as set forth by the Terry College of Business.

CORE CURRICULUM

For general information on the core curriculum, see the Academic Information section of this bulletin under the listing *The University System of Georgia Core Curriculum*.

HOURS

AREA I HUMANITIES/FINE ARTS 20

ENG 101, 102, 105H 10

Choose from the following: ART 200, 211H, 287, 288, 289; CLC 120, 121, 150; CML 221, 222, 225H, 226H; DRA 200, 212; ENG 231G, 232G, 233G, 235H, 236H, 237H; MUS 202; PHY 100, 102, 202H; REL 115, 116, 225H; SPC 108, 218H; any Latin, Greek, Chinese, Japanese, Hebrew, Russian at the 100-200 level; *GER 103, 221; *ITA 103, 201; *SP 103, 201; *POR 103, 201; *FR 103, 201 (or honors) 10

AREA II MATHEMATICS AND NATURAL SCIENCES 20

MAT 116, 253, or 263H 10

Choose from the following:
AST 107-107L, 108-108L, 297H-297L; BIO 103-103L, 104-104L, 107-107L, 108-108L; BOT 121-121L, 122-122L; CHM 111 and 111L, 112 and 112L; CHM 121 and 121L, 122 and 122L; GLY 115-115L, 116-116L; GLY 125-125L, 126-126L; GGY 120-120L, 121-121L, 122-122L, 214H; PCS 127-127L, 128-128L 10

*Levels 101 and 102 count as Arts and Sciences electives in these languages.

AREA III SOCIAL SCIENCES 20

Choose from the following:

ANT 102, 212H; GGY 101, 215H; HIS 111, 215H, 216H, 217H, 121, 122, 251, 252, 253H, 254H; PHY 101, 205H, 215H; POL 101, 105H; PSY 101, 103H; SOS 104; SOC 104H, 105, 160

AREA IV COURSES RELATED TO MAJOR 30

ACC 110, 111 10
ECN 106, 107 10
LS 270 5
MAN 209-209L 5

COMMUNICATIONS ELECTIVE 5
BASIC PHYSICAL EDUCATION 2
LOWER DIVISION TOTAL 97

UPPER DIVISION REQUIREMENTS 30
Economics Elective 5

Student selects one of the following:

ECN 202, 233, ECN(FIN) 326, ECN 341 or 386

MS 312-312L 5

(Student must have credit for MS 312-312L and ACC 111 or an approved substitute prior to enrolling in FIN 330, MAN 320, MAN 351, and MKT 360.)

FIN 330 5
MAN 320 5
MAN 351 5
MKT 360 5

BUSINESS ELECTIVES 10

Courses taken must be 300-level or above business courses outside the student's major department.

MAJOR 25

(Student must have credit for MS 312-312L and ACC 111 prior to enrolling in any major course). Major courses must be an approved program of study with the Terry College of Business, and must be taken in residence and completed with a grade of C or better.

MAJOR RELATED 10

Each major department will select ten hours of elective courses for its students. Business courses require the prerequisites of MS 312-312L and ACC 111. The major related courses must be completed with a grade of C or better.

ARTS AND SCIENCES ELECTIVES 15

UPPER DIVISION TOTAL 90

TOTAL HOURS REQUIRED 187

(International Business) (197)

HOURS

A minimum of 187 quarter hours is required for the Bachelor of Business Administration degree.

RESIDENCY

As part of the minimum of 60 quarter hours taken in residence at the University, business administration students must take **at least 45 hours** in residence at the Terry College of Business, including 25 hours in a major field.

GRADES

Grades of 2.0 or better are required for ENG 101, ENG 101 and 102 combined and major courses. A cumulative GPA of 2.0 on all business courses is required for graduation.

TRANSFER STUDENTS

Admission standards for transfer students to the Terry College of Business may vary from those standards set by other schools and colleges within the University. Acceptance to the Terry College of Business is tentative upon the student's currently submitted transcript and transfer GPA.

The specific credit for work done at other institutions which will apply toward the Bachelor of Business Administration degree is determined by the Dean of the Terry College of Business. The amount of such transfer credit shall not in any case exceed that allowed by the Director of Admissions of the University. Allowance of transfer credit by the Director of Admissions does not mean necessarily that all of such credit will be accepted toward a Bachelor of Business Administration degree.

Transfer students whose credits are received in time for evaluation by the Director of Admissions before the beginning of the quarter, should pick up a check-list from the Office of Undergraduate Studies indicating the application of accepted transfer credits toward the Bachelor of Business Administration degree requirements.

Regulations governing transfer students are given in the Academic Information section.

OTHER REQUIREMENTS

Students seeking the B.B.A. degree as a condition of graduation must obtain a pass-

ing score on the University System Regents' Test, explained in the Academic Information section of this bulletin.

Students may satisfy the University Environmental Literacy requirement by selecting one of the following four options:

1. ANT 102, Introduction to Anthropology
2. ECL 100-100L, Ecological Basis of Environmental Issues
3. GGY 200-200L, Resources, Society, and the Environment
4. SOC 240, Environmental Sociology; BOT 121-121L, Elementary Botany; and BOT 122-122L, Elementary Botany (all three courses must be taken in the fourth option)

Note: Transfer students who have already satisfied this requirement in another School/College will be considered to have satisfied the requirement as far as the Terry College of Business is concerned.

Students will not receive credit for senior division work (courses numbered 300 or above) until the English 101 and 102 course requirement is satisfactorily completed. Junior status (90 hrs.) is required for all senior division (300 level or above) business courses, except MS 312-312L.

Foundation courses, particularly those in the quantitative stream, must be completed first if students are to benefit most from professional business administration courses. Accordingly, before enrolling in major courses for degree credit, students must have completed 90 hours including ENG 101/102, ACC 111 and MS 312-312L. ACC 111 and MS 312-312L must be taken before the Business Core.

Substitutions for major courses must be approved in advance and in writing by the student's major advisor. These substitutions must be numbered 300 or above. **All students must satisfy prerequisites prior to enrolling in business courses.**

Majors

ACCOUNTING (ACC)

The major in accounting is designed to give the student an understanding of the theory of accounting as it is used in our society. A student will enroll in courses which may lead to a private, public, or governmental accounting career.

Accounting education also provides an excellent background for non-business professions such as law, and is a sound basis for advancement to top-level management positions.

Required courses for all majors in accounting:

	HOURS
ACC 500 Intermediate Accounting I	4
ACC 501 Intermediate Accounting II	4
ACC 502 Intermediate Accounting III	4
ACC 503 Advanced Accounting	4
ACC 510 Managerial I	4
ACC 520 Auditing I	4
ACC 530 Systems I	4
ACC 540 Tax I	4
ACC 571 Professional Accounting	3

No student is permitted to repeat a major accounting course more than once in order to achieve a grade of C, nor is he/she permitted to repeat more than two major accounting courses.

Beginning with the May 1998 CPA Exam for the state of Georgia, all first-time candidates must complete a minimum of 225 hours to sit for the examination. This is commonly referred to as the "150 Hour Rule," based on 150 semester hours. Many states, and virtually all the southeastern states, are requiring the "150 hours" prior to sitting for the CPA Exam. This is important to be aware of, as any individual wishing to work in public accounting will need to sit for the CPA exam.

This ruling requires accounting students to complete an additional year of education. The J.M. Tull School of Accounting has responded to this requirement by offering two programs: the Master of Accountancy (MAcc) and the Five-Year Program. Both programs are designed to provide students with an additional year to advance their study and understanding of accounting.

The MAcc program is a post-baccalaureate degree. Students may enter the program upon completion of an undergraduate degree from an accredited institution. An applicant's scholarly and professional ability is evidenced by transcripts, GMAT test scores, and letters of recommendation.

The Five-Year Program allows outstanding accounting seniors at the University of Georgia to begin graduate school during their fourth year. Applicants must have outstanding academic credentials as they are graduate students for their final two years of study. This program allows a student to

complete the BBA and MAcc degrees within a five year period. Students in the Five-Year Program are eligible for graduate assistantships during their enrollment in the program.

MANAGEMENT INFORMATION SYSTEMS

In modern business enterprise, accurate and timely information is necessary in all phases of operations. With the advent of the electronic computer, management information systems have assumed a vital role in business, commerce, and industry. Correspondingly, the demand for business-related education in this field has increased greatly. The Management Information Systems (MIS) program, offered through the Department of Management, is designed to meet this need.

MIS brings together, into one program, the knowledge necessary to be an MIS professional. This knowledge includes: the common body of business knowledge, programming skills in a variety of languages, management information systems, file organization and data base management systems, systems analysis and design, decision support systems, office automation, mini-, micro-, and mainframe computers, and information resource management.

The major course program (total 35 hours) consists of three required courses (15 hours) and four electives (20 hours). Program details are available in the Department of Management offices in the Physical Education Building (Room 220).

ECONOMICS (ECN)

Economics is the study of resource allocation by individuals, business enterprises, and nations. A social science, it forms the foundation for understanding the various business disciplines. Its study combines analytical, empirical, and historical methods to reveal how an economy functions. This department offers a wide range of courses providing students with both breadth and depth in the subject. Economics gives a valuable preparation for careers in corporate, governmental, and consulting positions within the United States and internationally. It is an excellent major for those planning to attend law school; those contemplating an MBA degree will find that such programs consider economics majors highly desirable applicants. The field also prepares students

for work in public administration, international business, and financial analysis.

Courses to be taken by Economics majors:

	HOURS
MS 312-312L (required for B.B.A.) or STA 421 (may be replaced by STA 221 and 222 or 200).	5-10
ECN 405 and 406. Prerequisite: MAT 253	10
ECN 598. Prerequisite: ECN 405 and 406	1
Four major elective courses:	20
Prerequisite ECN 106 and 107:	
ECN(FIN) 326 Money and Banking	
Prerequisite ECN(FIN) 326:	
ECN(FIN) 450 Monetary Policy	
Prerequisite ECN 405:	
ECN 402 Economics of Natural and Environmental Resources	
ECN 410 Economic Growth and Development	
ECN 447 The Economics of Industrial Organization	
ECN 448 Public Utilities, Regulation, and Enterprise	
ECN 449 Economic Analysis of Law	
ECN 480 International Trade: Theory and Policy	
ECN 494 Labor Market Analysis	
ECN 496 Managerial Economics	
ECN 497 Economic Evolution of the United States	
FIN(ECN) 434 Public Finance	
Prerequisite MS 312-312L or STA 421 and ECN 405:	
ECN 499 Quantitative Analysis for Economists	

In addition to these Economics courses, FIN 435, State and Local Public Finance, and FIN 481, International Finance: Theory and Policy, are options for the major-related requirement. FIN courses cannot be counted towards the A.B. degree.

Major-related courses for the A.B. degree: Two courses, numbered 200 or above, in the social sciences: Anthropology, Economics, Geography (not physical), Political Science, Psychology, Sociology, Speech Communication.

BANKING AND FINANCE (FIN)

The study of finance develops an understanding of financial decisions made by corporations and how capital markets work. Students are provided with the skills and

knowledge to value cash flows and assets, analyze the financial performance of firms, determine strategies to enhance the value of the firm, and understand financial innovations in domestic and international capital markets.

The program combines coursework in financial management, investment analysis, financial institutions and markets, and international finance to prepare students for positions with major corporations, small business firms, brokerage firms, commercial banks, investment banks, insurance companies, other financial institutions, accounting and consulting firms, and government agencies.

Students are expected to complete coursework in financial management, investment analysis, and international finance.

Required for all finance majors:

	HOURS
ECN(FIN) 326 Money and Banking	5
Note: ECN(FIN) 326 is required for all finance majors and should be taken prior to or concurrently with a student's first major (400-level) course. Because ECN(FIN) 326 is not a 400-level course, it is not acceptable for major area credit but may be used in either the economics elective area or the business elective area (see the BBA required curriculum for the junior and senior years).	
In addition, finance majors must complete 35 hours of finance major courses numbered 400 or above.	
Six of these major courses must be chosen from the following list:	
FIN 430 Long Term Financial Decisions (required)	5
FIN 431 Survey of Investments (required)	5
FIN 432 Portfolio and Capital Market Theory	5
FIN 433 Introduction to Speculative Markets	5
FIN(ECN) 434 Public Finance	5
FIN 436 Applied Corporate Finance	5
FIN 439 Essentials of Working Capital Management	5
FIN 451 Commercial Banking	5
FIN 452 The American Financial System (required)	5
FIN 454 Small Business Finance and Venture Capital	5

FIN 481 International Finance: Theory and Policy	5
FIN(AAE) 487 Commodity Markets	5
FIN 488 Security Analysis	5
RE(FIN) 510 Real Estate Finance	5

The seventh course may be an additional 400-level finance course or selected from the option list which is available in the Banking and Finance Department, Barrow Hall.

Students may also take FIN 340, Internship and/or Cooperative Education, 5 hours, between their junior and senior years.

GENERAL BUSINESS

This major is designed for students who wish to obtain a general training in business administration. With the assistance of their advisor, students may plan their own program of study in general business provided that no more than three major courses from any one department may be used.

INTERNATIONAL BUSINESS

A growing number of large and small U.S. companies transact a significant and continually expanding portion of their business through international channels. In the future, business administration graduates will be increasingly involved with the international problems of modern business. The great majority of multinational companies are headquartered in the United States and are contributing importantly to this nation's status as the world's leading trader, international investor, and lender. Meeting the many challenges implicit in this situation requires special knowledge and skills of personnel engaged in the planning and administration of both business enterprises and governmental organizations with overseas relationships.

This program provides opportunities for students to gain the knowledge and skills required for international business careers, while at the same time assisting them in developing an understanding of the mechanisms and institutions of the international economy. It is designed for students desiring to pursue management careers with firms participating in or affected by international business.

Required Courses (20 hours):	HOURS
ECN 341 Environment of International Business	5
MKT 558 International Marketing	5

FIN 481 International Finance: Theory and Policy	5
MAN 552 International Business Policy: Principles and Cases	5
LS 460 International Legal Transactions for Business	5

Major elective courses (choose one of the following groups): 10

International Finance
FIN 430 Long-Term Financial
Decisions

FIN 431 Survey of Investments
International Marketing
MKT 465 Marketing Research and
Analysis

MKT 564 Sales Management
International Management
MAN 352 Productivity Manage-
ment

MAN 527 Quality Management
International Business (Available only
to students who will complete Glo-
bal Studies Certificate)

Ten hours of Global Studies
Courses taken from the "Foreign
Area" of the program course se-
lection

Modern Language 30

Choose *one* language sequence:

FR, SP (101, 102, 103, 201,
202, 301)

ITA, POR (101, 102, 103, 201,
301, 306)

GER (101, 102, 103, 221, 222,
306)

RUS (101, 102, 103, 104, 310,
400)

CHI, JPN (101, 102, 103, 201,
202, 300)

HUMAN RESOURCE MANAGEMENT

The job of the human resource manager involves a number of activities essential to the effective operation of the modern enterprise. These include job analysis (determining the nature of each employee's job), planning labor needs, recruiting job candidates, selecting job candidates, orienting and training new employees, administering compensation, providing incentives and benefits, appraising performance, interviewing, counseling, disciplining, training and developing, and building employee commitment.

Some typical job titles to which students majoring in Human Resource Management might aspire are compensation and benefits

manager, employment and recruiting supervisor, training specialist, employee relations executive, safety supervisor, job analyst, and EEO/Affirmative Action coordinator.

Students are aided in the selection of a major and major specialty courses by use of the "Guide for Management Majors" available in the Management department offices (220 Physical Education Building).

MANAGEMENT (MAN)

Any organization typically makes use of at least four basic kinds of resources (or inputs) available in its operating environments: human, financial, physical, and information. It is the job of management to combine and coordinate these various resources to achieve that organization's goals.

Because that job is as complex as it is challenging and fascinating, this program of study recognizes that careers in management will normally be fashioned by a long process of development on the job. Coursework is designed primarily to provide students with tools which will both facilitate on-the-job development and make certain that this development will be solidly grounded. The focus of attention will be on principles and on the making of decisions in real-life situations.

In addition to required courses in quality, organizational behavior, ethics, and strategic planning, focus may be given to the major by the logical packaging of courses from a specialized group. For instance, a student planning a career in industrial management, project management, manufacturing supervision, quality assurance, purchasing management or the like, might wish to choose major courses from among those offered in Production/Operations Management.

Students are aided in the selection of their major and major-related courses by use of the "Guide for Management Majors" available in the department offices at 220 Physical Education Building.

MANAGEMENT SCIENCES AND INFORMATION TECHNOLOGY (MS)

This major currently is inactive. For further details on its status, contact the Department of Insurance, Legal Studies, Real Estate, and Management Sciences offices in Brooks Hall (Terry College of Business).

MARKETING (MKT)

Marketing is concerned with developing and selling the vast assortment of products and services needed to satisfy the diverse wants and needs of consumers. It is an indispensable part of business practice and a challenging field for study and research.

The purpose of the major in marketing is to give students a basic understanding of marketing and its role in society. The marketing curriculum is future-oriented, emphasizing the skills needed for successful and responsible careers in sales management, research, logistics management, marketing management, and related areas. The curriculum is designed to develop the broad background of knowledge required for continuing professional growth in a changing world that constantly demands better-trained people for executive positions.

All marketing students are required to take core courses devoted to the development of analytical skills. These required courses draw upon both the behavioral and quantitative sciences and are designed to help students gain an understanding of the analytical methods and research procedures used to identify and solve marketing problems.

Required courses for all marketing students:

	HOURS
MKT 465 Marketing Research and Analysis	5
MKT (PSY) 561 Behavioral Theory and Marketing	5
MKT 571 Marketing Strategy	5

In addition to the required courses, each student majoring in marketing chooses a set of elective courses to represent an area of specialization, depending upon his or her particular interests and career objectives. This part of the instructional program emphasizes problem solving, decision making, and communications. The courses offer opportunities for students to apply analytical techniques to solve practical marketing problems. These courses provide students with sufficient depth of knowledge to recognize problems, search for answers, and apply solutions. Computers are used wherever possible for analytical assignments.

Specialized study is available in sales and sales management, as well as physical distribution/logistics management. Electives may also include advertising and sales promotion, and international marketing.

Current materials are available in the departmental advisor's office to help students determine their specific program of study within the major and major-related areas (as outlined under the Core Curriculum heading of the Bachelor of Business Administration Degree Requirements section of this bulletin).

Marketing students, with junior standing and MKT 360/MKT 369H, may obtain practical experience and enrich their educational program by enrolling in MKT 340, Internship and/or Cooperative Education. Up to 5 hours of major-related credit may be earned for this course.

ORGANIZATION MANAGEMENT

The primary focus of the organization manager centers on the coordination of a typically small staff and a large cadre of interested volunteers toward a particular service need—political, social, religious, health, trade, or professional.

The world of association management represents one of the fastest growing employment sectors in contemporary society. Currently, there are more than 800,000 active associations dedicated to a wide variety of missions. Opportunities for graduates exist in executive management, volunteer coordination, meeting planning, publications development, professional development and training, and fund raising.

Students are aided in the selection of major and major specialty courses by the use of the "Guide for Management Majors" available in the Management department offices (220 Physical Education Building).

REAL ESTATE (RE)

Real Estate is the study of site selection, acquisition (lease or purchase), development, financing, management, and disposition of real property. The major in Real Estate is for students planning careers in real estate sales, leasing, mortgage lending, investment, management, appraising, or development. Majors in Real Estate are required to take the following courses:

	HOURS
RE 390 Real Estate	5
RE 508 Principles of Valuation	5
RE 509 Corporate Real Estate	5
RE 510 Real Estate Finance	5
MAN 599 Business Policy	5
One additional Real Estate Course	5

DEPARTMENTAL OPTIONS: Real Estate majors must select 10 hours of electives from the following list of courses: Any Real Estate course not previously taken, INS 381, 485, LS 470, 576, MAN 509, 549, 554, 563, FIN 430, 431, 432, 452, MKT 562, 564. The additional hours needed to satisfy the Departmental Options requirement must be chosen from departments listed in Areas I, II, or III of the Lower Division or from Computer Science or Statistics.

RISK MANAGEMENT AND INSURANCE (INS)

The Risk Management and Insurance program of study is designed to enable the student to achieve professional competency as well as to become a more intelligent purchaser of insurance. This major provides students with both a broad understanding of the place and functions of risk-bearing institutions in a private economy and an opportunity for professional advancement.

Risk Management and Insurance majors are required to take the following courses:

	HOURS
INS 485 Commercial Lines Insurance	5
INS 511 Pension Planning and Employee Benefits	5
INS 513 Business Risk Management	5

In addition, two of the following courses are required:

	HOURS
INS 381 Principles of Risk and Insurance	5
INS 487 Life Insurance	5
INS 502 Casualty Insurance Problems	5
INS 503 Property Insurance Problems	5
INS 515 Estate Management	5
INS 599 Business Policy—Insurance	5

DEPARTMENTAL OPTIONS: Risk management and Insurance majors must select 10 hours of electives from the following list of courses: ACC 440, FIN 430, 431, 432, INS 340, 381, LS 470, MAN 509, 540, 560, 585, MKT 562, 564, RE 390, 509, 510, HPB 375, 445. Of these courses, MAN 509 is especially recommended. The additional hours needed to satisfy the Departmental Options requirement must be chosen from departments listed in Areas I, II, or III of the Lower Division or from Computer Science or Statistics.

Combined Major Programs

BUSINESS ADMINISTRATION/ LOCATION ANALYSIS

In cooperation with the Department of Geography in the College of Arts and Sciences, the Terry College of Business offers a major in "Location Analysis" which trains students in the fundamentals of economics, geography, and allied fields. Its purpose is to provide the background requisite for careers in location decision-making in the private and public sectors, such as with city, county, metropolitan, and regional planning commissions; private planning and real property development firms; industries concerned with urban, industrial, and retail development problems; transportation planning; and market analysis consultants. This curriculum also provides a superior basis for graduate work in area planning or economic geography. Contact Dr. Jean-Claude Thill in the Geography Department, 542-1753, for information concerning this major.

Freshman and Sophomore Years

Requirements as outlined for the B.B.A. degree, with the exception that GGY 101 must be taken as a social science course. GGY 120-120L and 121-121L or 122-122L are recommended for the laboratory science category, but are not required.

HOURS

Business Courses

25

GGY 358 Economic Geography
RE 390 Real Estate

Choose from Marketing or Real Estate courses:

Marketing:

MKT 559 Logistics Management
Any two of the following:

ECN 341 Environment of International Business

MKT 465 Marketing Research and Analysis

MKT 558 International Marketing
MKT 569 Strategic Logistics

Real Estate:

RE 508 Principles of Valuation

RE 509 Corporate Real Estate

RE(FIN) 510 Real Estate Finance

Geography Courses

25

GGY 459 Urban Geography

Any one of the following:

GGY 418-418L Introduction to Geographic Information Systems

GGY 460 Industrial Geography

GGY 462 Location Decision Making for Retail and Service Firms

GGY 463 Geography of Transportation

Choose three courses from the following:

GGY 412 Geography of Development

GGY 418-418L Introduction to Geographic Information Systems

GGY 460 Industrial Geography

GGY 462 Location Decision Making for Retail and Service Firms

GGY 463 Geography of Transportation

GGY 468 Urban Transportation and Land Use

GGY 472 Population Geography

COURSES OF INSTRUCTION

J. M. Tull School of Accounting (ACC)

Contact Person: Ms. Patricia G. Hoyt, 542-1616

110. Principles of Accounting I. 5 hours.

A study of fundamental principles applicable to the accounting cycle, asset valuation, income determination, financial reporting, basic business taxes, and owner's equity.

111. Principles of Accounting II. 5 hours.

Prerequisite: ACC 110.

Accounting principles and basic accounting theories as an aid to management. Cost accounting fundamentals. Analysis and interpretation of financial statements.

112H. Principles of Accounting I (Honors). 5 hours.

Not open to students with credit in ACC 110.

Underlying accounting concepts and standards utilized to communicate information essential to understanding the activities of an enterprise, including financial analysis, valuation and measurement, planning and control.

113H. Principles of Accounting II (Honors). 5 hours.

Not open to students with credit in ACC 111.

A continuation of 112H.

116. Survey of Accounting. 5 hours.

Not open to Business Administration students. A general survey of accounting with emphasis on the preparation, analysis, and interpretation of financial statements. A non-technical approach is taken in this study of accounting concepts and standards underlying financial reporting and their relevance to the public, private, and governmental segments of society.

300 and above level courses: see Bachelor of Business Administration degree requirements section, "Other Requirements" paragraph.

399. Directed Study in Accounting. 1-10 hours

variable. Repeatable for maximum 10 hours credit. Prerequisite: ACC 111. Directed study or research in the area of accounting.

440. Principles of Taxation for Non-Accounting Majors. 5 hours.

An introduction to Federal tax principles as they apply to individuals, corporations, partnerships, estates, and trusts.

499H. Honors Thesis. 5 hours.

Prerequisite: Good academic standing (general and honors). Senior division standing or Junior Division Honors Certificate. Furthermore, a student should have at least 10 hours of senior division credit in the subject of his/her proposed thesis.

This course provides opportunity for Honors students to undertake individual research under the guidance of a thesis director who would be his/her major professor or some other professor approved by the major professor leading to an Honors Thesis.

500. Intermediate Accounting I. 4 hours.

Prerequisite: ACC 111 or 113H, and grades of at least 2.0 in each of ACC 110 and 111.

The financial accounting sequence is designed to be a rigorous study of current technical practices and theory. Covers theoretical foundations, the accounting process, income determination, preparation of financial statements and accounting for current assets. There is a heavy emphasis on theoretical arguments supporting current accounting practice and alternatives.

501. Intermediate Accounting II. 4 hours.

Prerequisite: ACC 500.

A continuation of ACC 500 covering the theory and practice of accounting for liabilities, owners' equity and earnings per share.

502. Intermediate Accounting III. 4 hours.

Prerequisite: ACC 501.

A continuation of ACC 501 covering the theory and practice of accounting for accounting changes

and errors, income taxes, pension plans, leases and other topics.

503. Advanced Accounting. 4 hours.

Prerequisite: ACC 502.

Application of accounting theory to specialized accounting areas including accounting for equity investments and for business combinations, preparation of consolidated financial statements, accounting for the effects of foreign currency exchange rate fluctuations, and accounting for non-profit organizations.

510. Managerial I. 4 hours.

Prerequisite: ACC 110 and 111.

Emphasis is upon utilization of cost data in planning and controlling activities. Internal and external data are woven into the planning models. Specific areas are: process, job order, standard, functional relationships, and budgeting.

520. Auditing I. 4 hours.

Prerequisite: ACC 530 and MS 312-312L.

An in-depth review of the profession's auditing standards and of the steps involved in (1) planning the audit, (2) reviewing the system of internal control, (3) performing substantive auditing procedures, and (4) writing audit reports. Emphasis is placed on statistical sampling and auditing computerized systems. An overview of SEC regulations is provided.

530. Systems I. 4 hours.

Prerequisite: MAN 209-209L or 219H-219L and ACC 500.

Electronic data processing, software applications, file maintenance data structure, transactions flow, systems analysis, and systems control.

540. Tax I. 4 hours.

Prerequisite: ACC 111 or 113H.

A basic Federal income tax course, involving a study of history and background, general concepts of taxation, income, deductions, and federal income taxation primarily relating to individuals. This course is designed for accounting majors to emphasize the application of technical rules to factual situations such as those typically encountered by an accountant.

541. Tax II. 4 hours.

Prerequisite: ACC 540.

A continuation of ACC 540. Includes the study of income tax laws applicable to corporations, subchapter S corporations, partnerships, estates, trusts, and an introduction to social security taxes and estate and gift taxes, and tax research methodology.

542. Tax III. 4 hours.

Prerequisite: ACC 540.

Selected sections of the Internal Revenue code, primarily dealing with corporations, are used to

emphasize tax planning and research. Limited treatment of estate planning is given.

571. Professional Accounting. 3 hours.
Ethics, responsibility and liability of the accountant.

580. Internship and/or Cooperative Education. 1-15 hours. Repeatable for maximum 15 hours credit.

Prerequisite: Permission of department.
Students are permitted to enter business establishments, accounting firms, and governmental agencies for the purpose of obtaining practical and applied business and professional experience. A paper describing and analyzing this experience is required. (School Approval Required)

Banking and Finance (FIN)

Contact Person: Dr. James A. Verbrugge,
542-3657

300 and above level courses: see Bachelor of Business Administration degree requirements section, "Other Requirements" paragraph.

326. (ECN) Money and Banking. 5 hours.
See ECN 326.

330. Financial Management. 5 hours.
Prerequisite: ACC 111 and MS 312-312L.
A study of the basic concepts and analytical tools necessary to understand and engage in the financial decision-making process. Specific topics include financial statement analysis, working capital management, valuation theory, capital budgeting, cost of capital, dividend policy, and long-term financing.

337H. Business Finance (Honors). 5 hours.
Not open to students with credit in FIN 330.
Prerequisite: ACC 111 and MS 312-312L.
This course is designed to acquaint the student with the analytical tools of finance. The honors course emphasizes analysis as opposed to description.

340. Internship and/or Cooperative Education. 1-15 hours.

Students are permitted to enter business establishments or governmental agencies for the purpose of obtaining practical and applied business experience. A paper describing and analyzing this experience is required. (Department Approval Required)

430. Long-Term Financial Decisions. 5 hours.
Prerequisite: FIN 330.

The economic analysis of long-term capital investment decisions including the financing of long-term investment projects. Specific topics include capital budgeting under certainty, risk and uncertainty, cost of capital and financial structure, and the dividend decision.

431. Survey of Investments. 5 hours.
Prerequisite: FIN 330.

Fundamentals of the securities markets, investor objectives, introduction to analytical techniques and an examination of investment alternatives.

432. Portfolio and Capital Market Theory. 5 hours.

Prerequisite: FIN 330 and 431.
Analysis of alternative approaches to management of common stock and fixed income portfolios. Analytical introduction to the principles of investing focused primarily on portfolio theory utilizing financial valuation concepts and capital market theory.

433. Introduction to Speculative Markets. 5 hours.

Prerequisite: FIN 330 and 431 and MAT 253 or equivalent.
Elementary economics of financial futures and option markets. Mechanics of trading. Regulations. Introduction to hedging with speculative financial instruments.

434. (ECN) Public Finance. 5 hours.
A general consideration to American public expenditures, revenues, and fiscal administration.

436. Applied Corporate Finance. 5 hours.
Prerequisite: FIN 330.
Explores the tools, techniques and theories of financial decision making by examining actual business decisions (case-based).

439. Essentials of Working Capital Management. 5 hours.

Prerequisite: FIN 330 and 430.
The essentials of working capital management are presented. Cash management, credit policy, inventory policy and current liability management are studied within a value maximizing framework.

451. Commercial Banking. 5 hours.
Prerequisite: FIN 330 and ECN(FIN) 326.
The theory of commercial banking; and the concept of bank asset management; the relationship of asset management to liquidity; commercial banking and the nation's credit structure.

452. The American Financial System. 5 hours.
Prerequisite: FIN 330.

The function, role, and management of the major types of financial institutions in the United States. Emphasis is on the flow of funds through the specialized financial market sectors.

454. Small Business Finance and Venture Capital. 5 hours.

Prerequisite: FIN 330.

Principles of small business finance and the raising and management of venture capital. Financial planning and forecasting. Capital budgeting and working capital management in the small firm. Sources of capital.

481. International Finance: Theory and Policy. 5 hours.

Prerequisite: FIN 330.

Balance of payments analysis, international equilibrium and the mechanism of adjustment, international money markets and monetary standards, capital movements and the objectives of international monetary policy and international corporate finance.

487. (AAE) Commodity Markets. 5 hours.

See AAE 487.

488. Security Analysis. 5 hours.

Prerequisite: FIN 330 and 431.

Analysis of determinants of individual common stock value, statement analysis, predictive methodology and financial modeling.

492. Special Topics in Finance. 5-15 hours, repeatable twice for maximum credit of 15 hours. Prerequisite: FIN 330.

This course affords upper division students the opportunity to engage in individual, advanced study, reading or projects under the direction of a project director.

510. (RE) Real Estate Finance. 5 hours.

See RE 510.

Economics (ECN)

Contact Person: Ms. Kate Wrightson,
542-1311

The Economics major may lead to a B.B.A degree or an A.B. degree. See page 273 for requirements.

106. Principles of Microeconomics. 5 hours.

Introduction to the price and market system with applications of microeconomic theory to current economic problems.

107. Principles of Macroeconomics. 5 hours.

Not open to students with credit in ECN 105.

Income, employment, and other macroeconomic theory with applications to current economic problems.

116H. Principles of Microeconomics (Honors). 5 hours.

Not open to students with credit in ECN 106.

Introduction to the price and market system with applications of microeconomic theory to current economic problems.

117H. Principles of Macroeconomics (Honors). 5 hours.

Not open to students with credit in ECN 107 or 115H.

Income, employment, and other macroeconomic theory with applications to current economic problems.

150. Analysis of Strategic Games. 5 hours.

Prerequisite: MAT 102.

Game theory used to analyze situations in which the results of one party's actions depend on the actions of others. Study of how agents design their strategies of behavior, and how outcomes arise.

202. Economics of Environmental Quality. 5 hours.

Not open to students with credit in ECN 402.

Prerequisite: ECN 106 and 107.

Standard economic concepts are applied to environmental issues. Current environmental policies are analyzed. Students will learn to evaluate environmentally friendly business practices.

233. Economic Development of the United States. 5 hours.

Not open to students with credit in ECN 133.

Prerequisite: ECN 106 and 107.

American economic development from the colonial period to the present; economic factors involved in industrial growth and the resulting economic problems.

243H. Economic Development of the United States (Honors). 5 hours.

Not open to students with credit in ECN 143H or 233.

Prerequisite: ECN 106 and 107.

American economic development from the colonial period to the present; economic factors involved in industrial growth and the resulting economic problems.

300 and above level courses: see Bachelor of Business Administration degree requirements section, "Other Requirements" paragraph.

326. (FIN) Money and Banking. 5 hours.

Prerequisite: ECN 106 and 107.

Money in the economic organization; monetary theory; methods of stabilizing the price level; theories of bank deposits; discount policy and the interest rate of central banks regulation of credit.

336H. Money and Banking (Honors). 5 hours.

Not open to students with credit in ECN(FIN) 326.

Prerequisite: ECN 106 and 107.

Economics

Money in the economic organization; monetary theory; methods of stabilizing the price level; theories of bank deposits; discount policy and the interest rate of central banks regulation of credit.

340. Internship and/or Cooperative Education. 1-15 hours.

Prerequisite: Upper division economics majors and permission of department.

Students are permitted to enter business establishments or governmental agencies for the purpose of obtaining practical and applied business experience. A paper describing and analyzing this experience is required.

341. Environment of International Business. 5 hours.

Not open to students with credit in ECN 480.

Prerequisite: ECN 106 and 107.

Introduction to the economic environment surrounding multi-national business operations. Special attention is given to theories, problems, and policies of the world monetary system, international trade, and foreign investment.

386. Labor Economics. 5 hours.

Prerequisite: ECN 106 and 107.

Survey of labor organizations, wages, hours, unemployment, labor legislation, and current developments in labor. Tools of economic analysis are utilized.

402. Economics of Natural and Environmental Resources. 5 hours.

Prerequisite: ECN 405.

An analysis of the economic and physical principles underlying the use of our natural resource base. The economic sources of environmental problems will be examined as well as policies put forth to correct these problems.

405. Intermediate Micro-Economic Theory. 5 hours.

Prerequisite: ECN 106 and 107 and MAT 253.

Economic theory of households and firms, determination of prices, and allocation of resources.

406. Intermediate Macro-Economic Theory. 5 hours.

Prerequisite: ECN 106 and 107 and MAT 253.

National income accounting and theory. Determination of national income, employment, price level, and growth.

410. Economic Growth and Development. 5 hours.

Prerequisite: ECN 405.

Problems and programs of economic growth; specific attention directed to underdeveloped areas, national economics, and regions. International agencies and coordinated efforts in economic development processes will be appraised within a theoretical reference.

434. (FIN) Public Finance. 5 hours.

See FIN 434.

447. The Economics of Industrial Organization. 5 hours.

Prerequisite: ECN 405.

Industrial organization is a theoretical and empirical study of how structure and conduct of industries affect economic performance and public policies. Structure includes studies of concentration, barriers to entry; conduct includes analysis of pricing and product strategy; performance includes price-cost patterns, profits, and technology; public policies include antitrust law.

448. Public Utilities, Regulation, and Enterprise. 5 hours.

Prerequisite: ECN 405.

Nature, background, and significance of public utilities in our economy; economic and philosophical basis for government regulation and ownership in the public utilities sector; legal basis for and restrictions upon federal, state, and local regulatory authorities; development characteristics, rights, and duties of regulated industries; utility problems of regulation (rates, service, securities).

449. Economic Analysis of Law. 5 hours.

Prerequisite: ECN 405.

This course will deal with the economics of law and government. The court (common law) and legislative (statute law) systems are viewed as resource allocating mechanisms which supplement or replace the market. An economic analysis of the behavior of these systems and of the output of the systems is provided; consideration is given to the implications of each system for efficiency.

450. Monetary Policy. 5 hours.

Prerequisite: ECN(FIN) 326.

Monetary theory and how it affects monetary policy; objectives, techniques, and problems involved; Treasury fiscal and debt management policies as they affect and are affected by Federal Reserve policy.

480. International Trade: Theory and Policy. 5 hours.

Prerequisite: ECN 405.

Theoretical analysis, historical survey, and current problems of international trade; an examination of international economic policies and institutions especially as they relate to national political and economic objectives; trade barriers and controls.

494. Labor Market Analysis. 5 hours.

Prerequisite: ECN 405.

A presentation of current theories, recent empirical investigations, and historical and current data source materials in the area of labor supply at the local, state, regional, and national levels. The

course will focus upon (1) evaluation of the quality and quantity of the labor resource available to a labor market; (2) application of labor market data by firms and government agencies; and (3) the role of the labor resource in explaining the South's regional position in the national economic setting.

496. Managerial Economics. 5 hours.

Prerequisite: ECN 405.

Concepts, tools and methods of economic analysis relevant to a broad cross section of decisions within the business firm; analysis of market demand, cost relevant to various decisions; capital budgeting; and interrelationships between price policy, costs, promotion outlays, operating rates, capital budgets, and financing in the short and long run.

497. Economic Evolution of the United States. 5 hours.

Prerequisite: ECN 405.

Economic evolution of the United States emphasizes use of tools of quantitative and qualitative analysis as applied to American economic evolution.

496H, 497H, 498H. Directed Reading and/or Projects. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading, or projects under the direction of a project director.

499. Quantitative Analysis for Economists. 5 hours.

Prerequisite: [MS 312-312L or STA 421] and ECN 405.

The general linear correlation model is developed and the inferences that can be drawn from the model are discussed.

499H. Honors Thesis. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

598. Senior Directed Study. 1 hour.

Prerequisite: ECN 405 and senior standing.

Senior Directed Study in Economics consists of a senior paper as required by the department for a degree in Economics. The paper is to be written under the direction of a faculty member.

International Business (IB)

340. Internship and/or Cooperative Education in International Business. 1-15 hours. Repeatable for maximum 15 hours credit.

Prerequisite: Permission of department.

Internship or studies abroad program in the field of international business.

Legal Studies (LS)

Contact Person: Ms. Mary Berry, 542-4290

270. The Legal Environment of Business. 5 hours.

Jurisprudence, the legal process, regulation of competition, consumerism. A study of patterns and processes of legal regulation.

280H. The Legal Environment of Business (Honors). 5 hours.

Not open to students with credit in LS 270.

An honors study of the principles, trends, and processes of legal influences and regulation upon business. Jurisprudence, the legal process, regulation of competition, consumerism.

300 and above level courses: see Bachelor of Business Administration degree requirements section, "Other Requirements" paragraph.

450. Employment Law. 5 hours.

Legal implications of the employment relationship, with particular attention to discrimination based upon gender, disabilities, race, religion, and national origin.

460. International Legal Transactions for Business. 5 hours.

Prerequisite: LS 270.

Legal problems involving international trade, licensing and investment issues, dispute resolution and extraterritorial jurisdiction.

470. Business Law I. 5 hours.

Provides a basic appreciation of the relationships of law and society and the fundamental concepts encompassed by law as well as an investigation of contracts, Uniform Commercial Code sales and Antitrust Law.

511. (RE) Real Estate Law. 5 hours.

See RE 511.

550. Conflict Resolution and Negotiation. 4 hours.

Principles of conflict resolution and negotiation theories including methods of reducing and preventing disputes as well as how to resolve conflicts. Role playing in simulated business environments will be a key element of the instruction.

576. Business Law II. 5 hours.

Prerequisite: LS 470 or permission of department. Business organization, property, bankruptcy, secured transactions and commercial paper.

Management (MAN)

Contact Person: Mr. John R. Lough,
542-3729

201. Introduction to Organizational Communication. 5 hours.

This course is an examination of communication within the organizational context. Students are introduced to organizational communication through a variety of reading assignments, case studies, and lecture/discussion sessions that deal with various aspects of organizational communication.

209-209L. Introduction to Computing and MIS. 5 hours. Four lectures and two 1-hour lab periods. Not open to students with credit in (MS 209-209L and MAN 260) or CS 101-101L or MAN 219H-219L.

Computing, computing skills, and management information systems skills; computer hardware and software; operating systems, word processing, database, and spreadsheet applications; and information systems management.

219H-219L. Introduction to Computing and MIS (Honors). 5 hours. Four lectures and two 1-hour lab periods.

Not open to students with credit in (MS 219H-219L and MAN 260) or CS 101-101L or MAN 209-209L.

Computing, computing skills, and management information systems skills; computer hardware and software; operating systems, word processing, database, and spreadsheet applications; and information systems management.

300 and above level courses: see Bachelor of Business Administration degree requirements section, "Other Requirements" paragraph.

320. Principles of Production/Operations Management. 5 hours.

Prerequisite: ACC 111 or equivalent and junior standing.

Production and its relationship to marketing, finance, accounting, and personnel functions are described. Forecasting demand, aggregate planning, master scheduling, capacity planning and material planning provide basis for linking strategic plans to operations plans. Facilities design, job design, work measurement, productivity improvement, quality control and project management are discussed.

321H. Principles of Production/Operations Management (Honors). 5 hours.

Not open to students with credit in MAN 320.
Prerequisite: ACC 111 or equivalent and junior standing.

This course provides academically talented students a survey of production and its relationships to the marketing, finance, accounting, and personnel functions. Forecasting demand, aggregate planning, master scheduling, capacity planning, material planning, facilities design, job design, work measurement, productivity improvement, quality control and project management are discussed.

335. Computer Programming in Business. 5 hours.

Not open to students with credit in MS 335.

Prerequisite: MAN 209-209L or MAN 219H-219L or equivalent.

Introduction to computer programming. Fundamentals of systems analysis and program development using top-down design; structured programming; and debugging, testing and implementation; elementary data structures. The Pascal language is used.

340. Internship and/or Cooperative Education.

1-15 hours. Repeatable for maximum 30 hours credit.

Prerequisite: Permission of department.

Students are permitted to enter business establishments or governmental agencies for the purpose of obtaining practical and applied business experience. A paper describing and analyzing this experience is required. (Departmental Approval Required)

345. Telecommunications and Networks for Business. 5 hours.

Not open to students with credit in MAN 564 or MS 345.

Prerequisite: MAN 209-209L or MAN 219H-219L or equivalent.

An introductory course in the components of a telecommunication/data communication system for business. Concepts associated with the development of communication networks include network structures, local area networks, PC communications, voice/data integration, and wide area networks.

351. Management and Organizational Behavior. 5 hours.

Prerequisite: ACC 111 or equivalent and junior standing.

Analysis of management functions and processes as applied to organizations, includes fundamentals of staff and operative management, management principles and techniques, application of techniques to specific fields. Study of human behavior in organizations, with emphasis on problems of organization structure, authority and responsibility, motivation and leadership. Particular attention will be given to motivation, authority relationships, and organization structure as their

interactions with behavior processes make efficiency more or less difficult to achieve.

352. Productivity Management. 5 hours.

Prerequisite: MAN 320 and 351.

This course is designed to provide the student a working knowledge of time study, predetermined time study, methods improvement, layout techniques, and productivity improvement programs.

401. Conceptual Foundations of Business. 5 hours.

Prerequisite: MAN 351.

Examination of the intellectual, cultural, and legal concepts underlying the business system. Relationships of business systems to modern industrial society.

467. (SPC) Interviewing. 5 hours.

See SPC 467.

499H. Honors Thesis. 5 hours.

Prerequisite: MAN 351 and permission of department.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

509. Introduction to Microcomputer Hardware and Software in Business. 5 hours.

Not open to students with credit in MS 509, 519, or MAN 519.

Prerequisite: MAN 209-209L or 219H-219L or equivalent.

Computer hardware, operating systems, spreadsheets, computer utility programs, and a popular database package. (Not to be taken for Management Sciences major credit.)

510. Organization and Management of the Non-profit Institution. 5 hours.

Prerequisite: MAN 351.

History, legal basis, organization, management and activities of the nonprofit organization. Specific attention is given to board roles, resource development, and fund-raising as well as budgeting and strategic management in a nonprofit institution.

519. Applications of Small Computers in Business. 5 hours.

Not open to students with credit in MS 519.

Prerequisite: MAN 335 or equivalent.

The use of microcomputers in business. Computer hardware, MS-DOS operating system, popular utility programs, database systems on personal computers, spreadsheets, and local area networks are emphasized.

522. Project Management. 5 hours.

Prerequisite: MAN 320 and 351.

This course provides students the management skills to plan, schedule, organize and control project activities.

524. Materials Management I. 5 hours.

Prerequisite: MAN 320 and 351.

This course provides students an in-depth knowledge of the production and inventory planning and control field.

526. Purchasing Management. 5 hours.

Prerequisite: MAN 320 and 351.

This course is designed to provide the student an in-depth knowledge of the purchasing function and related functions (traffic, receiving, stores and surplus materials). The relationships among price, quality and delivery performance are illustrated. Techniques of negotiation, sourcing, values analysis and engineering are discussed. Japanese purchasing philosophy is contrasted to U.S. philosophy.

527. Quality Management. 5 hours.

Prerequisite: MAN 320 and 351.

Introduction to the management of the quality control function. Methods and application of quality control techniques commonly used in manufacturing and service organizations. Emphasis is on quality measurement and management.

528. Management of Service Operations. 5 hours.

Prerequisite: MAN 320 or equivalent.

An analysis and appraisal of various types of service businesses. Those aspects of service business that differ most greatly from manufacturing firms will be highlighted. Specific focus is on the role of the operations management function within a service business.

535. Advanced Computer Programming in Business. 5 hours.

Not open to students with credit in MS 535.

Prerequisite: MAN 335.

Technical training in computer programming to support management sciences and information technology in business. Data structures and advanced programming techniques using the Pascal language.

537. Software Development for the Microcomputer for Business. 5 hours.

Not open to students with credit in MS 537.

Prerequisite: MAN 519 and 535.

The programming language C, screen display strategies, and the documentation principles involved in the construction of user-convenient microcomputer software systems are emphasized.

539. Database Management Systems for Business. 5 hours.

Not open to students with credit in MS 539.

Prerequisite: MAN 535 or equivalent.

An introduction to data structures and database models, indexing techniques, file access techniques, and data retrieval methods. The three classic data models: network, hierarchical, and

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relational, are examined. The relational database model and normalization of relations are emphasized along with a relational database system that involves database queries formulated in SQL.

540. Business and Society. 5 hours.

Prerequisite: MAN 351.

A study of the major facets of the American business system in their historical and social background; growth of corporate capitalism and industrial state and business institutions in their interaction with cultural and social environment.

542. Business Ethics. 5 hours.

Prerequisite: MAN 351.

This course entails a detailed study of the ethical dimension of business and management practice. Topics covered include the meaning and nature of business ethics, the ethical climate in business today, forces which influence ethical behavior, ethics in the management hierarchy, and improving business ethics.

549. Entrepreneurship/New Venture Formation. 5 hours.

Prerequisite: MAN 351, ACC 110, MKT 360, FIN 330.

This course will deal with the characteristics of the entrepreneur, a brief history of independent business, causes of success and failure of independent businesses, and the factors involved in starting up an independent business on a sound basis.

552. International Business Policy: Principles and Cases. 5 hours.

Prerequisite: MAN 351.

Examination of some of the major problems that confront a manager who operates across international boundaries from a base in a single country, or who maintains affiliates and subsidiaries in several national jurisdictions, the greater emphasis being on problems involved in the crossing of national boundaries.

553. Materials Management II. 5 hours.

Prerequisite: MAN 320 or equivalent and MAN 524.

Acquaints the student with the design, operation and maintenance of production planning and control systems. Dependent demand item inventory techniques are emphasized. Material requirements planning, capacity requirements planning, and shop floor control techniques are examined in detail. Japanese production concepts are also analyzed. Repetitive manufacturing, job shop, and process industries are studied to identify critical factors in designing planning and control systems.

554. Small Business Management. 5 hours.

Prerequisite: MAN 351.

This course is designed to acquaint the student with the aggregation of activities that are involved in the planning, establishing/entering a small business, and in the management of a small business enterprise. Special consideration will be given to the feasibility and the preparation of a plan of action for entering a new business or for entering an established business.

556. Special Problems in Small Business. 5 hours.

Prerequisite: MAN 351, MAN 549 and 554.

This course begins with a study of the environment of small businesses and the factors leading to success and/or failure, then moves into the particular approaches and tools utilized by the more successful businesses and applies those tools to an operating concern. The final part of the course involves the student serving as a counselor to a small business that has requested assistance.

557. Data Management. 5 hours.

Not open to students with credit in MS 529 or 539. Prerequisite: MAN 351.

A study of data management concepts, including data administration, database administration, fundamentals of database management systems, data sharing and data dictionaries, data proliferation, and data integrity. Significant experience with IBM DBMS is provided.

561. Structured Systems Analysis and Design. 5 hours.

Prerequisite: MAN 557 and CS 533.

Introduction to structured systems analysis and design with emphasis on the development of large-scale man-machine systems. Methods of systems documentation are examined through the use of tools and techniques for describing process flows, data flows, data structures, file designs, input and output designs and program specifications.

562. Building Knowledge-Based Systems for Management. 5 hours.

Prerequisite: MAN 351.

This course provides the student with knowledge engineering skills require to elicit and represent human knowledge, and to build, implement and maintain knowledge-based systems in organizations.

563. Building Decision Support Systems for Management. 5 hours.

Prerequisite: MAN 351.

Decision support systems are the highest level of information support systems which aid the manager in the decision-making process. This course provides the student with the skills necessary to conceptualize, build, and implement decision support systems in organizations.

564. Business Telecommunications and Networking. 5 hours.

Not open to students with credit in MAN 345.

Prerequisite: CS 533 and MAN 351.

Telecommunications concepts, communications architectures, modes and protocols, commercial offerings, equipment, software, network design, and network management.

565. Applied Systems Development Project. 5 hours.

Prerequisite: MAN 561.

This course provides the student with experience in analyzing, designing, implementing, and evaluating information systems. Students are divided into project teams, and they utilize a structured development methodology to develop computer-based information systems for local organizations.

566. Advanced Applications Development. 5 hours.

Prerequisite: MAN 557 and CS 533.

Emphasis on the structured methodology of program design, development, testing, implementation, and documentation of business applications using COBOL, CICS, and DL/1. In addition, a system will be developed using the applications generator CSP (Cross System Product).

567. Information Resource Management. 5 hours.

Prerequisite: MAN 351.

Planning, organizing and controlling the information systems function. Topics include: computer center administration, motivating computer personnel, project selection, privacy, security, and implementation strategies.

569. Special Topics in Management Information Systems. 5 hours, repeatable for maximum credit of 15 hours.

Prerequisite: MAN 351.

The management information systems field evolves rapidly and covers many topic areas. This course explores recent developments in areas such as office automation, data communications, and the implementation of management information systems.

577. Applications in Operations Management. 5 hours.

Prerequisite: MAN 352 and 522 and 527 and 553.

This is the capstone course for operations management students and integrates the knowledge acquired in the prerequisite materials and operations management courses. Case studies are used to develop the analytical problem-solving and decision-making skills and to provide students the technical writing and oral communications skills required of operations personnel at all levels of management.

582. (PSY) Personnel Program Development. 5 hours.

Prerequisite: MAN 585 or PSY 414.

This is an experiential/skills building course in which students gain practice in dealing with matters such as job analysis and the preparation of job descriptions, developing performance evaluation systems, designing compensation plans, and personnel program evaluation.

585. Personnel/Human Resource Management. 5 hours.

Prerequisite: MAN 351.

An introduction to personnel/human resource management. Topics introduced include human resource planning, staffing, training and development, compensation, safety and health, and labor relations.

586. (PSY) Compensation Administration. 5 hours.

Prerequisite: MAN 351.

An examination of the internal and external determinants of compensation within an organization. The role of job analysis, job evaluation, and the compensation survey will be studied. The total compensation package, including monetary and nonmonetary rewards, will be analyzed as will those problems often encountered in compensation administration.

589. Federal Regulation of Personnel Management. 5 hours.

Prerequisite: MAN 585 or permission of department.

Federal regulation of personnel/human resources management in areas such as equal employment opportunity, occupational safety and health, and employee benefit plans.

592. Problems in Human Resource Utilization. 5 hours.

Prerequisite: MAN 351.

A treatment of selected areas of current concern regarding the utilization of human resources.

595. Administrative Practices. 5 hours.

Prerequisite: MAN 351.

A study of concepts and research findings pertaining to individual and group behavior in organizations; nature and crucial importance of communications, employee motivation and group dynamics; development of greater effectiveness in organizations through a better understanding of managerial philosophies, procedures and techniques.

599. Business Policy. 5 hours.

Prerequisite: MAN 320, 351, FIN 330, MKT 360. Senior standing.

Building upon and integrating the knowledge and methods learned in the major fields in business administration, designed to develop analytical,

problem-solving and decision-making skills in situations dealing with the firm as a whole. This course is designed for final quarter seniors.

599H. Business Policy (Honors).

Not open to students with credit in MAN 599. Prerequisite: MAN 320, 351, FIN 330, MKT 360 and Senior standing.

This course is concerned with the selection of the goals, objectives, strategies, and policies that will significantly affect the basic character and performance of the total enterprise, and with the functions and duties of those top and middle-level managers who are responsible for the resolution of such issues.

Management Sciences and Information Technology (MS)

Contact Person: Dr. Sandra G. Gustavson, 542-4290

219H-219L. Introduction to Computers and Information Technology in Business (Honors). 3 hours.

Not open to students with credit in MS 209-209L. Computer concepts and information technology in business, including: hardware and software concepts, programming in BASIC, word processing, graphics, database management systems, spreadsheets and telecommunications. Business-related software packages such as Lotus 1-2-3, dBase III Plus, and WordPerfect are used.

300 and above level courses: see Bachelor of Business Administration degree requirements section, "Other Requirements" paragraph.

312-312L. Statistical Analysis for Business. 5 hours. Four lectures and one 2-hour lab period. Prerequisite: MAT 253 or equivalent.

The application of statistics to business. Descriptive statistics, statistical distributions, parameter estimation, tests of hypotheses, and simple regression models are emphasized. Current statistical software packages for microcomputers are utilized.

322H. Statistical Analysis for Business (Honors). 5 hours.

Not open to students with credit in MS 312-312L. Prerequisite: MAT 253 or equivalent.

The application of statistics to business. Descriptive statistics, statistical distributions, parameter estimation, tests of hypotheses, and simple regression models are emphasized. Current statis-

tical software packages for microcomputers are utilized.

340. Internship and/or Cooperative Education. 1-15 hours elective credit. Repeatable for maximum 15 hours credit.

Prerequisite: Permission of department. Students are permitted to enter business establishments or governmental agencies for the purpose of obtaining practical and applied business experience. Reports and a paper describing and analyzing this experience are required. All Management Sciences majors are encouraged to participate in the internship program during their junior year. This course not to be taken for major credit.

500. Survey of Operations Research. 5 hours. Prerequisite: MAN 335 or equivalent.

An introduction to the formulation and application of operations research models in solving business problems. Linear programming, network models, integer programming, multicriteria models and methods, queuing analysis, simulation and stochastic models are examined.

505. Introduction to Simulation. 5 hours. Prerequisite: MS 500 and MAN 535.

The design and use of computer simulation models of business systems. Random number and process generators, construction and validation of simulation models, model implementation and interpretation of model output are emphasized.

545. Decision Support Systems. 5 hours. Prerequisite: MS 500 and MAN 335 and 539.

Theory, methodology, and implementation of computer-based decision support models. Such models involve an integration of quantitative tools, financial concepts, accounting, and computing. Emphasis is on the design, development, and use of computer-based decision support models for managerial decision making, and on the implementation of real-world systems.

547. Artificial Intelligence/Expert Systems in Business. 5 hours.

Prerequisite: MS 545. The role of artificial intelligence and expert systems in business. Emphasis is on artificial intelligence and on the design, testing, validation, and use of expert systems. Computer-based projects and the study of existing systems will be employed to reinforce concepts.

597. Special Topics in Management Science. 1-5 hours; repeatable for maximum of 15 hours credit.

Prerequisite: MAN 335. A program of independent study, including reading of advanced management science topics and projects related to those topics. Scheduling of this course must be approved by instructor.

MARKETING (MKT)

Contact Person: Kelly Chitwood, 542-3770

300 and above level courses: see Bachelor of Business Administration degree requirements section, "Other Requirements" paragraph.

340. Internship and/or Cooperative Education. 1-15 hours. Repeatable for maximum 15 hours credit.

Prerequisite: Junior Standing; MKT 360 or 369H. Students are permitted to enter business establishments or governmental agencies for the purpose of obtaining practical and applied business experience. A paper describing and analyzing this experience is required. (Departmental Approval Required)

360. Principles of Marketing. 5 hours.

Prerequisite: ACC 111 or equivalent and junior standing.

This course is concerned with the estimation of demand, consumer buying behavior, adaptation of products to markets, selection of channels of distribution, sales management, advertising, pricing, measurement of marketing efficiency, and procedures for planning and controlling marketing operations. The economic, social, and political forces that constantly change the market environment are stressed.

369H. Principles of Marketing (Honors). 5 hours.

Not open to students with credit in MKT 360.

Prerequisite: MS 312-312L or equivalent and ACC 111 or equivalent and junior standing.

Examines marketing methods, concepts, and practices. Problems are used to investigate decision-making processes and illustrate the administration and management of marketing operations.

465. Marketing Research and Analysis. 5 hours.

Prerequisite: MKT 360 and MS 312-312L.

A study of the role of research in marketing decision-making, the research process, scientific method, information gathering techniques and analysis and interpretation of research findings.

558. International Marketing. 5 hours.

Prerequisite: MKT 360.

A study of international marketing and the cultivation of international markets by business enterprises. Emphasis is placed on formulating and implementing international marketing plans.

559. Logistics Management. 5 hours.

Prerequisite: MKT 360.

Logistics activities including movement and storage of inventories and the dynamic forces affecting logistics decisions will be reviewed and discussed. Concepts, methods, and analytical techniques used by logistics managers to gain

and retain competitive advantages will be examined. Topics include traffic management, inventory control, warehousing, and freight transportation.

561. (PSY) Behavioral Theory and Marketing. 5 hours.

Prerequisite: MKT 360.

This course deals with the motives, attitudes, and expectations of consumers and businessmen that contribute to an understanding of the marketing process.

562. Personal Selling. 5 hours.

Prerequisite: MKT 360, Terry College of Business requirements for upper division and permission of department.

An examination of the theory and practice of salesmanship. Its purpose is primarily to give a professional foundation to students who will be involved in personal selling careers, and secondarily to acquaint those who will be engaged in marketing management with the capabilities and the problems of the sales force.

563. Advertising and Sales Promotion. 5 hours.

Prerequisite: MKT 360.

The management of advertising activities in the business organization, advertising agency operation, media evaluation and selection, creative strategy, and campaign planning. The nature and scope of selling activities, especially salesmanship and sales promotion. Promotional theory, problems, and strategies are emphasized; legal, ethical, and moral implications of promotion are considered as well.

564. Sales Management. 5 hours.

Prerequisite: MKT 360.

A study of sales force management. Topics covered include: selecting, training, compensating, motivating, and evaluating sales personnel.

566. Services Marketing. 5 hours.

Prerequisite: MKT 360.

Marketing in the service industries with particular emphasis on the unique aspect of services marketing, the service mix, and the implementation of service strategies.

569. Strategic Logistics. 5 hours.

Prerequisite: MKT 360 and 559.

Comprehensive analysis of physical distribution systems. Case format will be used to apply logistics principles presented in MKT 559 and introduce advanced methods and techniques. System component parts; analytical tools used in planning, implementing, and controlling the system; and coordination with other functional areas will be emphasized.

571. Marketing Strategy. 5 hours.

Prerequisite: MKT 360, 465, MKT(PSY) 561 and at least one marketing major elective course.

This course covers the integration and coordination of product development, promotional strategy, physical distribution, and pricing in planning and controlling marketing operations. Stress is placed upon the managerial aspects of marketing.

Real Estate (RE)

Contact Person: Ms. Mary Berry, 542-4290

300 and above level courses: see Bachelor of Business Administration degree requirements section, "Other Requirements" paragraph.

340. Internship and/or Cooperative Education. 1-10 hours. Repeatable for maximum 10 hours credit.

Prerequisite: Permission of department.

Students are permitted to enter business establishments or governmental agencies for the purpose of obtaining practical and applied business experience. A paper describing and analyzing this experience is required. (Departmental Approval Required)

390. Real Estate. 5 hours.

An introduction to real estate law, markets, valuation, and finance for real estate decision making. Prerequisite for all other real estate courses.

507. Real Estate Development. 5 hours.

Not open to students with credit in RE 491 or 590. Prerequisite: RE 390 or permission of department.

Development process with particular emphasis on analyzing the feasibility of design, location, and construction.

508. Principles of Valuation. 5 hours.

Prerequisite: RE 390 or permission of department.

An introductory valuation course; the subject matter deals mainly with the logic of valuation theory. Study material covers conventional valuation techniques in addition to new valuation methods introduced by statistical inference and computer terminal models adapted to investment property. Case problems use computer models developed for decision-making purposes.

509. Corporate Real Estate. 5 hours.

Prerequisite: RE 390 or permission of department.

A study of planning, choosing and implementing programs to provide and allocate real property to meet corporate objectives.

510. (FIN) Real Estate Finance. 5 hours.

Prerequisite: RE 390 or permission of department.

A study of the instruments, techniques, and institutions of real estate finance; sources of funds; mortgage risk analysis; emphasis on typical policies and procedures used in financing of residential, industrial, and commercial properties, including commercial leasing.

511. (LS) Real Estate Law. 5 hours.

Real Estate Law is a study of how the law affects real property. Topics covered include property ownership and interests, restrictions on such interests, real estate sales documents, landlord-tenant agreements, conveyances, and broker-owner relationships. Also discussed are the licensing requirements for brokers and salespeople.

515. (LAR) Land Development Studio. 5 hours.

Prerequisite: Permission of department.

Directed study in the process of land development.

Risk Management and Insurance (INS)

Contact Person: Ms. Mary Berry, 542-4290

300 and above level courses: see Bachelor of Business Administration degree requirements section, "Other Requirements" paragraph.

340. Internship and/or Cooperative Education. 1-10 hours. Repeatable for maximum 10 hours credit.

Prerequisite: INS 381 or 487:

Students are permitted to enter business establishments or governmental agencies for the purpose of obtaining practical and applied business experience. A paper describing and analyzing this experience is required. (Departmental Approval Required)

381. Principles of Risk and Insurance. 5 hours.

Introduction to the basic principles of life, property, liability and other areas of insurance from the viewpoint of the purchaser. Consideration is given to the importance of risk bearing in personal and business affairs and the various methods of handling risk with emphasis on insurance arrangements. Designed for non-insurance majors as well as a basis for more advanced courses.

485. Commercial Lines Insurance. 5 hours.

Prerequisite: INS 381.

Risk management and insurance tools applied to the needs of the corporate enterprise. Subjects covered are direct and indirect property exposure,

third party claims, workers' compensation (insurance versus self-insurance) fidelity, crime, boiler and machinery, lease analysis, property valuation and insurance surveys.

487. Life and Health Insurance. 5 hours.

A study of individual life, health, and annuity contracts and life insurance programming, types of insurance, investments, selection, taxation and regulation of companies.

502. Casualty Insurance Problems. 5 hours.

Prerequisite: INS 381 and 485.

Advanced study of all types of casualty insurance; automobile, professional and general liability, multi-line coverage, and how these relate to the risk-bearing function; legal and technical aspects of selection of risk, contract underwriting and loss adjustment.

503. Property Insurance Problems. 5 hours.

Prerequisite: INS 485.

Practical application of property insurance policies, including multiple-lines, to specific risk-bearing problems; survey and insurance counseling to complex problems; legal and technical aspects of selection of risk, contract underwriting, and loss adjustment.

507. Insurance Agency Management. 5 hours.

Prerequisite: INS 381 and 485.

The economic functions performed by the general agency and its position in the insurance distribution system. Emphasis is given to the management aspects of agency operations from the sales, administrative and financial viewpoint.

511. Pension Planning and Employee Benefits. 5 hours.

Private approaches to the problems of employee financial security. Components of employee benefit programs. Employee attitudes toward benefits. Theory of group programs. Group life and health insurance. Basic features of pension plans. Funding, vesting, tax, actuarial and communication problems. Profit sharing. Plans for self-employed. Effect of ERISA. Cases and problems.

513. Business Risk Management. 5 hours.

Prerequisite: INS 485 and 511.

An analysis of the risks faced by the business enterprise and the study of the various methods of handling these risks including loss prevention, risk retention, self-insurance and corporate insurance programs. Extensive use of case method and logical decision making.

515. Estate Management. 5 hours.

Prerequisite: INS 487 and FIN 431.

Integration of previously studied subjects in financial planning insurance, employee benefits, real estate, tax accounting, law, and investments. This will be accomplished through lecture, readings, and analysis of cases.

599. Business Policy—Insurance. 5 hours.

Prerequisite: Senior standing.

This course seeks to integrate the techniques, methods and knowledge from all areas of business administration into a meaningful whole; problems of setting policies which enable the firm to accomplish its objectives will be studied. This course is designed for final quarter seniors.

The College of Education

Aderhold Hall, 542-1151

Administrative Officers

Russell Yeany, B.S., M.Ed., Ph.D., *Dean*
Sylvia M. Hutchinson, B.S.Ed., M.Ed., Ph.D.,
Associate Dean of Education

General Information

PURPOSE

The College of Education is the division of the University of Georgia that provides and administers all professional programs and courses designed for the preparation of teachers and other professional education positions. In its role of educational leadership, the College recruits and selects prospective educational professionals, provides pre-service and in-service training programs, conducts research to solve educational problems, and offers field service to all types and levels of educational institutions.

ORGANIZATION OF UNDERGRADUATE PROGRAMS

Undergraduate programs at the University of Georgia prepare students to teach in the following fields:

Early Childhood (preschool, kindergarten, grades 1-5)

Middle School (grades 4-8)

Secondary (grades 7-12) in agricultural education, business education, home economics, marketing education, technological studies, and the areas of English, mathematics, foreign language, science, and social science.

Grades P-12 in art, dance, health promotion and education, music, physical education, and special education.

Programs leading to certification as a counselor, school administrator, etc., are all graduate or postbaccalaureate programs.

The entire resources of the University are used in the education of teachers.

The College of Education administers all programs in professional education. Some programs such as Agriculture, Music, and Art Education are primarily housed outside of the College of Education and many courses in other teacher education programs are taught by other divisions of the University.

Although specific course requirements vary with the teaching field, each undergraduate program includes the following elements:

- (1) general education, a sequence of courses from a variety of fields, taken primarily in the College of Arts and Sciences in the freshman and sophomore years;
- (2) the teaching field or major, consisting of courses designed for the specific subject or grade level of prospective teaching, offered in the College of Agricultural and Environmental Sciences, College of Arts and Sciences, College of Business Administration, College of Education, and College of Family and Consumer Sciences;
- (3) work in professional education in the College of Education.

Non-teaching majors are also offered in communication sciences and disorders, dance, exercise and sport science, health promotion and education, and recreation and leisure studies.

FACILITIES

The College of Education utilizes extensively the facilities of the University, the community, and the schools. Administrative offices are located in Aderhold Hall. In addition, the following buildings are primarily used for College of Education programs: Industrial Arts Building, Physical Education Building, Rivers Crossing, Tucker Hall, and Ramsey Student Center.

ACCREDITATION

The University is accredited by the Georgia Department of Education, the Southern Association of Colleges and Schools, and the National Council for the Accreditation of Teacher Education. Specific programs are also accredited by the American Speech-Language-Hearing Association, National Recreation and Parks Association in cooperation with the American Association for Leisure Recreation, and the American Psychological Association.

Student Services

ACADEMIC ADVISING

The Student Services Center of the College provides initial advisement for freshmen, transfer students and for those who have not yet made a decision about a specific teaching field or level. Following this initial advisement period, students are assigned to an advisor in their teaching field. Students should consult an advisor in their teaching field as early as possible in their program of study and should confer with their advisor at least once per quarter to plan programs and to preregister.

Students who need initial advisement should contact the Student Services Center in 122 Aderhold Hall.

Special Programs

HONORS PROGRAM

Students in the College of Education are encouraged to participate in the Honors Program. Admission of beginning students is by invitation. Enrolled students with a cumulative average of 3.5 may apply for admission to the program. The College of Education offers individual study and Honors thesis courses and an Honors section of Learning and Motivation (EPY 314H). See the section "Programs for Superior Students" in the Academic Information section of this bulletin for more information about this program.

Educational Field Experiences (Student Teaching and Practicums)

Supervised observation-participation in cooperating schools is required of most candidates for a degree leading to professional certification. The degree of required participation in pre-student teaching laboratory experiences varies extensively among different teacher preparation programs. A minimum of one full quarter of student teaching is required of all teaching candidates.

Placement in student teaching requires admission to Teacher Education and other prerequisites as outlined under the Admission to Teacher Education section. Student teaching activities are directed by college supervisors and selected cooperating supervising teachers. High school student teachers usually teach in one teaching field, middle grades in one or two teaching fields, and early childhood at a kindergarten or primary level.

Student teaching involves full-time placement in a school setting. It carries 15 hours credit and no additional coursework is permitted during student teaching. Students should anticipate that additional expenses will be incurred during student teaching as placement may require transportation and off-campus living arrangements.

Students in some programs participate in a school practicum prior to student teaching. Students should see their departmental advisor concerning this requirement. Practicums are required for non-teacher education programs which include exercise and sport science, health promotion and education, recreation and leisure studies, and dance education.

Clinics and Laboratories

READING CLINIC

The Reading Clinic provides assessment and instruction of school-aged children with reading difficulties. These services are provided both as a service to the state of Georgia and to provide useful experiences for our graduate students. The Clinic provides direct tutoring for children with reading problems. This tutoring is done individually or in small groups and is based on an analysis of

the child's needs in reading. The Clinic also will evaluate children for the purpose of making suggestions for more effective reading instruction. These evaluations are followed up with a conference with school personnel to implement these suggestions. Arrangements for these services should be made through the Director of the Clinic.

SPECIAL EDUCATION CLINIC

The Learning Disabilities Clinic functions as a service facility for members of the community and a training facility for prospective teachers who are developing their assessment skills. The Adult Clinic provides in-depth diagnostic evaluations and intervention services to individuals over the age of 18 who think their learning, vocational, or social difficulties may be due to learning disabilities. Arrangements may be made through the clinic's intake coordinator.

SPEECH AND HEARING CLINIC

The communication sciences and disorders area is concerned with training of speech/language pathologists, audiologists, and teachers of the hearing impaired, and the conducting of research in speech, language, and hearing disorders. The Speech and Hearing Clinic extends its diagnostic and treatment services to all children and adults who have functional or organic problems of oral communication. Particular attention is given to assisting University students. Arrangements for these services are made by contacting the Clinic office at (706) 542-4598.

STUDENT DEVELOPMENT LABORATORY

The Student Development Laboratory provides counseling and other developmental personal growth experiences for all college-age students. Experiences include academic success training (study skills), human relations skill building, dealing with test anxiety, leadership training, improving creative thinking, asserting oneself positively, and personal decision-making skill building. In addition, individual and group counseling opportunities are available. The program is coordinated and implemented by faculty and advanced graduate students in the Department of Counseling and Human Development Services. The Student Development

Laboratory is located in 420 Aderhold Hall. Telephone (706) 542-4140.

Degrees Offered

The College of Education prepares its students for the undergraduate degree of Bachelor of Science in Education. By coordinating programs with other appropriate colleges and schools, the College also prepares students for educational specialties within the undergraduate degrees of Bachelor of Science in Agriculture, Bachelor of Fine Arts, Bachelor of Science in Family and Consumer Sciences, and Bachelor of Music.

A two-year Associate of Applied Science degree is offered in cooperation with Athens Area Technical Institute. See the Other Programs (non-B.S.Ed. and non-Teaching) section for further information.

Through the Graduate School of the University, the following degrees are offered: Master of Education, Master of Arts in Education, Master of Art Education, Master of Music Education, Educational Specialist, Doctor of Education, and Doctor of Philosophy. See the *Graduate School Bulletin* for further information.

Matriculation

Most students who prepare for teaching matriculate in the College of Education and pursue one of the programs leading to the degree of Bachelor of Science in Education. Students matriculate in other colleges for specialized degrees with educational applications.

Students enrolled in other colleges of the University who seek certification as a teacher should apply for admission to Teacher Education, have their individual programs approved by the College of Education by the beginning of the junior year, and must meet all requirements of the approved professional programs.

A distinction is made between matriculation in a division of the University or the College of Education offering teacher education programs and formal admission to a program in teacher education, as described in "Admission to the College and to Teacher Education."

Admission to the College and to Teacher Education

Standards for admission of freshmen to the College of Education are the same as for those admitted to the University. Admission standards for transfer students to the College of Education may vary from those standards set by other schools and colleges within the University and may also vary according to the number of hours earned.

Enrollment in the College of Education does not constitute admission as a candidate for a degree in teacher education or professional certification in other professional fields. Each student who seeks a professional teaching degree or professional teacher certification must apply for admission to Teacher Education through the College's Educational Field Experience Office, 315 Aderhold Hall.

For admission of transfer students to the College of Education, the following grade point averages (GPAs) will apply: All external transfer students must have a minimum overall GPA of at least a 2.30 for acceptance to the College. All internal transfer students (transfers from within the University) must meet the following minimum requirements: for up to 45 quarter hours, 2.00; from 45 to 89 quarter hours, 2.10; from 90 to 134 quarter hours, 2.20; and for 135 or more quarter hours, a 2.30 GPA.

Many of the majors in the College of Education have higher GPA's for entry than these minimum requirements listed. Students should check with individual departments to determine the actual requirements for entry into their program.

In determining the GPA for admission, an overall grade point average will be used for transfer students from other institutions, while a cumulative grade point average will be used for University of Georgia students.

Admission to Teacher Education must be obtained prior to enrollment in professional teacher education courses designated (TE). Requirements for admission to undergraduate Teacher Education include: completion of at least one quarter of academic work at the University of Georgia, 2.5 cumulative grade point average, satisfactory completion of English 101 and 102, satisfactory completion of EFN 203 or the equivalent course taken at another institution, passing of the Regents' Test, and demonstration of

oral language competency. Please note the B.S.Ed. degree requirements below. Courses that are designated as Teacher Education (TE) require admission to a teacher education program before they can be taken. *Some programs have GPA requirements exceeding these.* Language proficiency and the 2.5 GPA (or higher program requirements) must be maintained throughout the programs. If a student already holds a degree, admission to teacher education is based on the *overall* GPA.

To receive a student teaching assignment a student must: make application at the Educational Field Experience Office, 315 Aderhold, by the end of the first week of the quarter preceding student teaching; be admitted to Teacher Education; have at least a 2.5 cumulative grade point average; have completed essentially all required courses in the teaching field with a grade of at least C in each; have completed the prerequisite education courses with a grade of at least C in each (courses in curriculum and teaching procedures must have been taken on this campus); have successfully completed the school practicum (required in most programs); be in satisfactory personal health to assume responsibility in student teaching; and be recommended by his/her department. A student is not permitted to student teach while on probation.

Some program areas have requirements exceeding the above; such requirements must be met to enter the program and for continued matriculation, including student teaching.

Certification

A Georgia professional teaching certificate may be obtained by following an approved teacher education program such as those described in the following pages. Applicants holding a bachelor's or advanced degree may obtain an evaluation for a provisional teaching certificate by submitting an application for evaluation to the Georgia Professional Standards Commission. A provisional teaching certificate is a non-renewable certificate valid for three years. A provisional certificate must be converted to a professional certificate by the end of the three-year validity period. In order to convert the provisional certificate to a professional certificate, the applicant must contact the department

within the College of Education in which they wish to be certified to determine the requirements for entry into the program and the course work required to meet the approved teacher education program and the procedures for obtaining a professional recommendation. In addition to completing prescribed academic work, an applicant must pass the Georgia Teacher Certification Test (TCT) in the field for which certification is sought. Applications for evaluations, professional certificates, and the TCT are available from the Student Services Center, Room 122 Aderhold Hall.

Bachelor of Science in Education Degree Requirements

Students are required to acquaint themselves with general degree requirements applicable to all students of the University as stated in the Academic Information section of this bulletin.

Undergraduate teacher education programs are approved by the State Board of Education and the National Council for the Accreditation of Teacher Education. A person completing any one of these programs may be recommended for certification in Georgia as well as in most other states.

The programs outlined lead to a Bachelor of Science in Education degree except in agriculture, art, home economics, and music. For these fields, students who wish to complete a certification program must meet the professional education requirements cited under "Admission to the College and to Teacher Education" and complete required professional teacher education courses. They must also meet the respective degree requirements for these majors.

The B.S.Ed. programs typically include 182 quarter hours or more. Credit for English 100 and credit beyond two quarter hours of Basic Physical Education (PEB 100-199) may not be applied toward the 182-hour minimum requirement. In the requirements of each particular program, please note that *Teacher Education (TE) courses require admission to Teacher Education prior to enrollment.*

CORE CURRICULUM

For general information on the core curriculum, see the Academic Information section of this bulletin, under the listing *The University System of Georgia Core Curriculum*. The following General Core Curriculum for the College of Education applies to all departments within the College of Education. For specific requirements see individual major listings.

GENERAL CORE CURRICULUM FOR THE COLLEGE OF EDUCATION

	HOURS
AREA I HUMANITIES/FINE ARTS	20
ENG 101, 102	10
Choose from the following: ENG 231G, 232G, 233G, 234G; CML 221, 222; CLC 120, 121, 150	5
Choose from the following: ENG 231G, 232G, 233G, 234G; CML 221, 222; CLC 120, 121, 150; REL 115; PHY 100, 102; SPC 108, 256; ART 200; DRA 200; MUS 202; DAN 201; foreign language at the 100-200 level (Courses should not be duplicated in Area IV.)	5
AREA II MATHEMATICS AND NATURAL SCIENCES	20
MAT 102, 105, 109, 116, 253	5
Choose from the following: BIO 103-103L, 104-104L, 107-107L, 108-108L; BOT 121-121L, 122-122L; PCS 127-127L, 128-128L; GLY 115-115L, 116-116L, 125-125L, 126-126L; CHM 111 and 111L, 112 and 112L, 121 and 121L, 122 and 122L; GGY 120-120L, 121-121L, 122-122L	10
Choose from the following: MAT 109, 116, 205, 206, 253; AST 291; PHY 110; PCS 101, 127-127L, 137-137L; GGY 104; GLY 115-115L, 116-116L; STA 200	5
AREA III SOCIAL SCIENCES	20
HIS 251 or 252	5
POL 101	5
Choose from the following: HIS 111, 121, 122, 251, 252, 253H, 254H; ECN 106, 107; SOC 105, 160; GGY 101, PSY 101; ANT 102; PHY 101; SOS 104	10

AREA IV COURSES RELATED TO MAJOR

EFN 203
EPY 201*

30
5
5

Choose from the following as appropriate for intended major:
ANT 102, 231; ACC 110, 111;
BIO 103-103L, 104-104L; ART 120, 130, 200, 230, 240, 260;
BOT 121-121L; CB 220-220L, 221-221L; CHM 240, 240L, 261, 261L; CFD 210; CS 101-101L; DAN 201; DRA 200; ECN 106, 107, 233; FDN 210; foreign language at the 100-200 level; GLY 115-115L, 125-125L; GGY 101, 104, 120-120L, 121-121L, 122-122L; HIS 111, 121, 122, 251, 252; LIN 210; LS 270; MAN 209-209L; MAT 205, 206, 253, 254, 255; MIB 250-250L; MUS 110, 111, 122, 182ABC, 202, 240-244, 245A-E, 246A-E; PHY 100, 101, 102, 110; PCS 127-127L, 137-137L; PSY 101, 252, 254, 256, 258; SPC 108, 256; SOC 105, 160; STA 200

20

HOURS AND RESIDENCY

A minimum of 182 quarter hours is required for a Bachelor of Science in Education degree. A minimum of 90 quarter hours must be taken in residence at the University.

GRADES

A candidate for the Bachelor of Science in Education degree or other baccalaureate degree leading to teacher certification must obtain a grade of C or higher in the prescribed education and teaching field courses.

CANDIDACY FOR A DEGREE

When a student has earned at least 150 quarter hours, a graduation check sheet will automatically be generated by the Office of the Registrar for processing. For graduation information contact the Student Services Center, 122 Aderhold Hall.

*EPY 201 is required in Area IV for all teacher certification programs with the exception of Early Childhood which still requires EPY 204. Other courses may be substituted in non-certification programs from courses listed in Area IV.

Elementary Education

Two programs are available for those interested in teaching in elementary and middle grades. The Early Childhood Education program is for those wishing to prepare to teach in grades P-5, and the Middle School program for those who wish to prepare to teach in grades 4-8.

EARLY CHILDHOOD

This program provides extensive field experiences and a broad educational background to teach a variety of subjects in the early grades. Students must be admitted to Teacher Education before entering Level I. In order to move from one level to the next, students must complete all level courses with at least a grade of C, and maintain the 2.75 GPA required for admittance to Teacher Education.

In addition to meeting the usual requirements for admission to undergraduate Teacher Education, Early Childhood Education students must meet the following program requirements:

- Successfully complete with a grade of C or better or exempt through the second quarter of one language (e.g., Arabic, Chinese, French, German, Greek, Hebrew, Italian, Japanese, Korean, Latin, Portuguese, Russian, Spanish, Swahili, sign language).
- Successfully complete with a grade of C or better CFD(PSY) 395 and EFN 203.
- Students entering the University January 1996 or later must have a grade point average of at least 2.75 covering all work attempted. For students who have attended only the University of Georgia, this will be the *cumulative* average. For students who have attended other colleges, this will be the *overall* average. In the latter case, if the student has completed some of the work at the University of Georgia, both the *cumulative* and the *overall* must be at least 2.75.
- Completion of a minimum of 50 documented hours of "in-school" experiences (e.g., public schools, private schools, after school, day care centers, Head Start programs).
- Word processing skills adequate to meet course requirements.

Being accepted as a major in early childhood education does not guarantee permis-

sion to enroll in "level" or "teacher education" courses. Students who meet minimum requirements for admission to Teacher Education and program levels are rank-ordered according to their *overall* GPA. Accordingly, the cutoff for admission to program levels each quarter is determined by the *overall* GPA's of the applicant pool for that quarter. Generally, more students are qualified for admission to Level I than can be accepted into the program in any quarter. Enrollment is limited.

Freshman and Sophomore Years

	HOURS
AREAS I, II, and III - Refer to the General Core Curriculum for the College of Education, or to individual program checksheet for requirements for these areas.	60
AREA IV COURSES RELATED TO MAJOR	30
EFN 203*	5
EPY 204*	5
Humanities Elective - See General Core Curriculum	5
Physical Science Elective - See General Core Curriculum	5
Teaching Field Elective - See General Core Curriculum	5
Elective - See General Core Curriculum	5
Physical Education	2

Junior and Senior Years

Professional Preparatory Courses

ART 305*; CFD(PSY) 395*; EIT 401*; SPE 300*; HPB 442*; MAT 205, 206 (if not satisfied in the Core); MUS 303*, 305*; PES 442* 42

Level I

ECE(CFD) 401(TE)*; ESC 442 (TE)*; ESS 342(TE)*; EEN 300 16

Level II

ECE 402(TE)*; EEN 442(TE)*; EMT 442(TE)*; ERD 342(TE)* 18

Level III

ECE(CFD) 403(TE)*; EEN 345 (TE)*; EMT 441(TE)*; ERD 343 (TE)* 14

Level IV

ECE(CFD) 546(TE) 15

MINIMUM TOTAL HOURS 197

MIDDLE SCHOOL EDUCATION (GRADES 4-8)

This program, specifically designed for prospective teachers of upper elementary, middle school, and junior high school levels, provides preparation for teaching in one major and one minor area of specialization selected by the teacher candidate.

To be eligible for admission to the Middle School Program, students must be admitted to Teacher Education. Students who entered the University in the winter quarter of 1990 or later are required to have and maintain a 2.75 cumulative GPA to be admitted to Teacher Education. (If a student holds a degree, the requirement is a 2.75 overall GPA.)

If more students are qualified for admission to the program than can be accepted in any quarter, the department reserves the right to limit enrollment.

Freshman and Sophomore Years

	HOURS
AREAS I, II, and III - Refer to the General Core Curriculum for the College of Education, or to individual program checksheet for requirements for these areas.	60
AREA IV COURSES RELATED TO MAJOR	30
EFN 203*	5
EPY 201*	5
Electives - See General Core Curriculum	20
Basic Physical Education	2

Junior and Senior Years

The middle school program is field oriented. Three quarters of lab experiences in grades 4-8 are provided.

Courses required are:

EMS 303*, 502(TE)*, 504(TE)*, 546(TE); ERD 352* or EEN 519(TE)*; ERD 353(TE)*; SPE 300*; E__ 546(TE); Teaching Fields(TE)* as identified on individual program checksheets 105

MINIMUM TOTAL HOURS 197

*Minimum grade of C required.

MEDIA SPECIALIST CERTIFICATION FOR THE EARLY CHILDHOOD AND MIDDLE SCHOOL TEACHER

Department of Instructional Technology courses are open to elementary, middle school, and secondary teachers. By taking 40 quarter hours (approved by the Department of Instructional Technology), including a 5-hour internship in a school media center, a student may satisfy training requirements for the S-4 media specialist certificate. The four-year professional teaching certificate is prerequisite for the S-4. With the approval of the faculty advisor, some of these courses may be included among electives at the junior or senior years or they may be completed on a postbaccalaureate basis. Additional courses carry graduate credit and, subject to the approval of the faculty advisor, may be included in a graduate degree program. Certification requirements are under review and may change.

Secondary School Teacher Education Programs (Grades 7-12)

The programs in secondary education are designed for prospective teachers of English; foreign languages (French, German, Latin, Spanish); mathematics; sciences (biology, chemistry, earth science, physics); social sciences (economics, geography, history, political science); and occupational studies (agriculture, business, home economics, marketing, and technological studies) in grades 7 through 12. The programs are described on the following pages under the departmental headings (1) Languages—English Education, Foreign Language (French, German, Latin, Spanish) Education, (2) Mathematics Education, (3) Science Education, (4) Social Science Education, and (5) Occupational Studies (agriculture, business, home economics, marketing, and technological studies). Requirements and prerequisites in the teaching field should be considered in choosing courses in the freshman and sophomore years. All prospective teachers should select a teaching field and plan their program with their advisor in the appropriate department of the College of Education. Completion of a program and

meeting other requirements of the Georgia Department of Education qualify a student for a professional four-year teacher's certificate in a field in grades 7-12.

LANGUAGE EDUCATION

This program offers two majors: English Education and Foreign Language Education (French, German, Latin, and Spanish) which lead to teacher certification in grades 7-12. To enter the final 45-hour sequence of Capstone Teaching Field Courses and the Professional Teacher Education (TE) courses in English, an overall 2.6 GPA must be obtained and maintained. In addition, a 2.6 GPA must be maintained in all upper-level teaching field required and elective course work. To enter the final 30-hour sequence of Cross-Cultural Understanding and Professional Teacher Education (TE) courses in Foreign Language Education, a 2.6 GPA must be obtained and maintained.

If there are more applicants for the Advanced Professional Education Course sequence than can be accommodated, admission will be determined by the date the applicant declared English Education as his or her major. Students who are delayed because of their late date of declaration will have priority for spaces the next time the courses are offered.

English Education

This program prepares a student for a professional four-year certificate in Georgia to teach English in grades 7-12. To enter these professional teacher education (TE) courses, a 2.6 GPA must be obtained and maintained.

Freshman and Sophomore Years

	HOURS
AREAS I, II, and III - Refer to General Core Curriculum for the College of Education, or to individual program checksheet for requirements for these areas. Note: Two general literature courses are required in Area I.	60
AREA IV COURSES RELATED TO MAJOR	30
EFN 203	5
EPY 201	5
Appreciation of ART, DAN, DRA, MUS at the 100-200 level	5
SPC 108	5

Foreign language sequence at the 100-200 level	
Choose from the following:	10
CHI, FR, GER, GRK, HBW, ITA, JPN, LAT, POR, RUS, SP	
Physical Education	2
<i>Junior and Senior Years</i>	
Teaching Field:	
Required Courses: ENG 432G or 433G; American Literature (pre-1900); British Literature (pre-1900); 20th Century Literature; Language Study (ENG or LIN)	25
Capstone Courses: EEN 506, 507, 509	15
Teaching Field Electives (ENG, SPC, CLC, CML, DRA at the 300-400 level)	15
Professional Education:* EEN 435(TE), 436(TE), 546(TE); ERD 403; SPE 300	35
Other Courses: Foreign Language or Cross-Cultural Course	5
TOTAL HOURS	187

Foreign Language Education

(French, German, Latin, Spanish)

This program leads to certification in one of four foreign languages in grades 7-12 in Georgia.

Freshman and Sophomore years

AREAS I, II, and III - Refer to General Core Curriculum for the College of Education, or to individual program checksheet for requirements in these areas. Note: Two general literature courses are required in Area I.

AREA IV COURSES RELATED TO MAJOR

EFN 203	5
EPY 201	5
Appreciation of ART, MUS, DAN, DRA at the 100-200 level	5
SPC 108 or 256	5
FR, GER, LAT or SP at the 100-200 level	10
Physical Education	2

Junior and Senior Years

Teaching Field:	45
Foreign literature, culture, and language (see specific courses listed below under appropriate language heading. Additional courses require advisor approval.)	
Professional Education: EFL 435 (TE)**, 436(TE)**, 546(TE); SPE 300	30
Other Courses: EFL 505**	5
Approved electives	20
TOTAL HOURS	192

French

Literature—15 hours	FR 303 (or 304H), 310, 311, or 312
Culture—5 hours	FR 410 or 411
Language—25 hours	FR 301 (or 302H), 306, 556, FR(LIN) 507F, or 557F

German

Literature—15 hours	GER 325, 326, 327
Culture—5 hours	GER 310
Language—15 hours	GER 322, 338, 422
Electives in German—10 hours	

Latin

LAT 304—5 hours	
LAT 400-level—25 hours	
Electives 400-level (LAT, GRK, CLC)—15 hours	

Spanish

Literature—15 hours	SP 303 (or 304H), 310, 311, 312, or 313
Culture—5 hours	SP 410 or 411
Language—25 hours	SP 301 (or 302H), 306, 556, SP(LIN) 507S, 557S, or 570S

*The final 45-hour sequence of Capstone Teaching Field Courses and Professional Education (TE) courses may be taken only by application, which must be made no later than one month prior to registering (early or regular) for the first of these three quarters. No other work may be undertaken during the final two quarters. Consult the department's "Selection/Retention Procedures" statement for specific criteria.

**These courses may be taken only by application, which must be made no later than one month prior to registering (early or regular) for the first (435) of the two-quarter sequence.

MATHEMATICS EDUCATION

This program prepares students for teaching mathematics in Georgia, grades 7-12.

Freshman and Sophomore Years

	HOURS
AREAS I, II, and III - Refer to General Core Curriculum for the College of Education, or to individual program checksheet for requirements in these areas.	60
AREA IV COURSES RELATED TO MAJOR	30
EFN 203	5
EPY 201	5
MAT 253, 254, 255	15
Appreciation of ART, MUS, DAN, DRA at the 100-200 level	5
Physical Education	2
<i>Junior and Senior Years</i>	
All courses selected in the teaching field must be approved by the student's advisor. Students must complete 40 hours in upper division teaching field courses, including at least one course in each of geometry, linear algebra, higher algebra, computing, and statistics.	
Two courses in geometry are recommended and MAT 256 and 390 are strongly recommended.	40
Electives	24
Professional Education: EMT 335(TE), 336(TE) or 505(TE), 345, 499(TE), 546S(TE); SPE 300	36
TOTAL HOURS	192

EMT 505 and 531 are also "TE" courses requiring admission to teacher education, although they are normally taken by post-baccalaureate students.

A minimum grade of C is required in each mathematics course and in each education course. Each student is responsible for maintaining contact with his/her Mathematics Education Department advisor.

SCIENCE EDUCATION

This program prepares students for teaching in the field of science in grades 7-12.

Freshman and Sophomore Years

	HOURS
AREAS I, II, and III - Refer to General Core Curriculum for the College of Education, or to individual program checksheet for requirements in these areas. Note: CHM 121, 121L, 122, 122L, and MAT 166 and 253 are required in Area II.	60
AREA IV COURSES RELATED TO MAJOR	30
EFN 203	5
EPY 201	5
GLY 125-125L	5
Appreciation of ART, MUS, DAN, DRA at the 100-200 level	5
Behavioral Science Elective: ANT 102; PSY 101, 252, 258; SOC 105	5
PCS 127-127L	5
Physical Education	2
<i>Junior and Senior Years</i>	
Science Specialization: BIO 107-107L, 108-108L; ESC 448; PCS 128-128L and 229-229L	25
(Biology-45 hours; Chemistry-41 hours, Earth Space Science-45 hours; or Physics-43 hours)	41-45
Professional Education: ESC 345A, 441, 445(TE), 446(TE), 503, 546(TE)	36
TOTAL HOURS	194-198

SOCIAL SCIENCE EDUCATION

Two programs are available in this field. One leads to broad field (social science) Georgia certification in grades 7-12; the other leads to single discipline certification in economics, geography, history, or political science in grades 7-12, if all other requirements are met. Students entering the University fall quarter 1990 and thereafter must have and maintain a 2.6 GPA for admission to a program in this field.

Broad Field Certification

Freshman and Sophomore Years

HOURS

AREAS I, II, and III - Refer to General Core Curriculum for the College of Education, or to individual program checksheet for requirements in these areas. Note: GGY 101, HIS 251 and 252 are required in Area III.

60

AREA IV COURSES RELATED TO MAJOR

30

EFN 203

5

EPY 201

5

Appreciation of ART, MUS, DAN, DRA at the 100-200 level

5

ECN 106, 107

10

ANT 102, PSY 101, or SOC 105

5

Physical Education

2

Junior and Senior Years

Major Concentration:

25

300-400 level courses selected from one discipline: HIS, ECN, GGY, POL

Related Social Science Courses:

ECN

5

GGY

10

POL

10

HIS

5

Professional Education Courses:

ESS 435(TE), 436(TE), 445A(TE), 445B(TE), 546(TE); SPE 300

32

Electives

8

TOTAL HOURS

187

Single Discipline Certification

Freshman and Sophomore Years (Economics, Geography, History, or Political Science)

HOURS

AREAS I and II - Refer to General Core Curriculum for the College of Education, or to individual program checksheet for requirements in these areas.

40

AREA III SOCIAL SCIENCES

20

HIS 251 or 252

5

ANT 102, PSY 101, or SOC 105

5

POL 101

5

100-200 level course selected from ANT, ECN, GGY 101, HIS, POL, PSY, or SOC

5

AREA IV COURSES RELATED TO MAJOR

30

EFN 203

5

EPY 201

5

Appreciation of ART, MUS, DAN, DRA at the 100-200 level

5

ANT, ECN, GGY, HIS, POL 101, PSY, SOC - See General Core Curriculum

15

Physical Education

2

Junior and Senior Years

Major Concentration: HIS, GGY, ECN, or POL (select from one discipline)

40

Professional Education Courses:

ESS 435(TE), 436(TE), 445A(TE), 445B(TE), 546(TE); SPE 300

32

Electives

23

TOTAL HOURS

187

Occupational Studies

The programs in the overall area of Occupational Studies lead to Georgia teacher certification in the teaching fields of agricultural education, business education, home economics education, marketing education, and technological studies.

AGRICULTURAL EDUCATION

This program leads to the Bachelor of Science in Agriculture degree in the College of Agricultural and Environmental Sciences (see College of Agricultural and Environmental Sciences). Courses offered in the College of Education which require admission to teacher education (carry a "TE" designation) are: EAG 335, 336, 349, and 546.

BUSINESS EDUCATION

This program prepares a student for a professional certificate in Georgia to teach in the field of Business Education in grades 7-12.

Freshman and Sophomore Years

HOURS

AREAS I, II, and III - Refer to the General Core Curriculum for the College of Education, or to individual program checksheet for requirements for these areas. Note: ECN 106 and 107 are required in Area III for this major. **60**

AREA IV COURSES RELATED TO MAJOR **30**

EFN 203 5
 EPY 201 5
 PSY 101 5
 Appreciation of ART, MUS, DAN, DRA at the 100-200 level 5
 ACC 110, 111 10

Physical Education 2

Junior and Senior Years

EBE 205, 401, 402, 503, 506, 507, 509, 510, 576; LS 270 or 470 50

Approved electives in business administration 10

Professional Education

EBE 335(TE), 336(TE), 400, 546(TE); EIT 518; EOS 503; EOS 555(TE) 41

TOTAL HOURS 193

HOME ECONOMICS EDUCATION

This program leads to the Bachelor of Science in Family and Consumer Sciences degree in the College of Family and Consumer Sciences and Georgia certification in Home Economics Education in grades 7-12 if all other requirements are met (see College of Family and Consumer Sciences). Courses in the College of Education which require admission to teacher education are: EHE 335, 336, 345AB, and 546.

MARKETING EDUCATION

This program prepares a student for a professional certificate in Georgia to teach in the field of Marketing in grades 7-12. Students take courses from the College of Education and the Terry College of Business, allowing additional career options within the Marketing Education profession.

Freshman and Sophomore Years

HOURS

AREAS I, II, and III - Refer to General Core Curriculum for the College of Education, or to individual program checksheet for requirements in these areas. Note: SPC 108 is required in Area I, MAT 116 and 253 are required in Area II, and ECN 106 and 107 are required in Area III. **60**

AREA IV COURSES RELATED TO MAJOR **30**

EFN 203 5
 EPY 201 5
 ACC 110 5
 ACC 111 5
 MAN 209-209L 5
 LS 270 5

Physical Education 2

Junior and Senior Years

Major Professional Courses:
 EME 301, 335(TE), 336(TE), 400, 546(TE); EOS 503, EOS 555(TE) 42

Marketing and Related Courses:
 EME 300, 499, 507, 508; MAN 351; MKT 360; MS 312-312L 35

Approved courses in MKT, MAN, or ECN 10

Approved electives 3

MINIMUM TOTAL HOURS 182

TECHNOLOGICAL STUDIES

This program leads to teacher certification in technology education and trade and industrial/health occupations or a professional career as an industrial/institutional trainer.

Freshman and Sophomore Years

AREAS I, II, and III - Refer to General Core Curriculum for the College of Education, or to individual program checksheet for requirements in these areas. HOURS
60

AREA IV COURSES RELATED TO MAJOR 30

EFN 203 5
 EPY 201 5
 PSY 101 5
 Electives - See General Core Curriculum 15
 Physical Education 2

Junior and Senior Years

Teaching Field: See specific program descriptions listed below under appropriate teaching field heading. 45-60
 Electives 15-0

Professional Courses:
 ETS 335(TE), 336(TE), 546(TE);
 EOS 555(TE) 30

TOTAL HOURS 182

Technology Education

60 hours in the teaching field in the areas of energy and power, communications, and manufacturing and construction.

Trade and Industrial/Health Occupations

45 hours in the teaching field. Technical school graduates and others with competency in an occupation may be granted advanced standing (up to 40 quarter hours) by successful completion of a competency examination. Persons who hold credentials as health practitioners and/or equivalent experience in a clinical health specialty area who wish to qualify for credentialing as educators must hold current registration (licensure or certification) in a health profession for admission to the health occupations program.

Industrial/Institutional Trainer

45 hours in the teaching field.

P-12 Teaching Fields

ART EDUCATION

The B.S.Ed. in Art Education program prepares art teachers at the elementary, middle, and high school levels in order to promote

the central role of the arts, crafts, and aesthetic or appreciative attitudes and sensibilities in the lives of students. In addition to preparation for work in the schools, individuals may elect to work toward art careers with other community agencies and institutions such as community centers or religious organizations.

Admission to the B.S.Ed. in Art Education requires an *overall* GPA of 2.5, completion of the basic art courses and EFN 203 with a 2.7 GPA, and a 300-word statement outlining reasons for becoming an art teacher. The student must be admitted to Teacher Education and must maintain a 2.5 GPA to remain in the Teacher Education program. Admission to and retention in the Art Education program will be determined by review of the student's total performance and the availability of placements for student teaching.

Freshman and Sophomore Years

AREAS I, II, and III - Refer to General Core Curriculum for the College of Education, or to individual program checksheet for requirements in these areas. HOURS
60

AREA IV COURSES RELATED TO MAJOR 30

EFN 203 5
 EPY 201 5
 ART 120, 130, 230, 240 20
 Physical Education 2

Junior and Senior Years

Major Courses:
 ART 287, 288, 289 (select 2) 10
 Art History (Sr. level, including ART 401) 10
 Art Studio (2-dimensional) 10
 Art Studio (3-dimensional) 10
 Art Studio Sequence 10
 Art Studio electives 10
 ART/EAR electives (ART 140 recommended) 10

Professional Education:
 EAR 335(TE), 336(TE), 546(TE);
 EAR 434 or SPE 300 30

MINIMUM TOTAL HOURS 192

DANCE EDUCATION

Dance majors select one of three areas of emphasis: school certification, performance and choreography, or pre-dance therapy.

These programs of study have been designed to enable the dance student to develop technical proficiency and choreographic ability, to gain experience in production, performance, and teaching; to explore the scientific, philosophical, and historical foundations of dance; to consider the relationship of dance to other art forms and to related areas of study; to understand the function of dance as an educational tool and to become familiar with current research, problems and issues in dance education; and to experience dance as a total theater experience. Opportunities are provided for guided teaching experiences and individual study.

Freshman and Sophomore Years

HOURS

AREAS I, II, III, and IV - Refer to General Core Curriculum for the College of Education, or to individual program checksheet for requirements in these areas. **90**

Physical Education 2

Junior and Senior Years

From 90 to 95 hours of coursework in dance from the following list is required:

- PEB(DAN) 153, DAN 163*, 250, 252, 257, 265ABC, 266ABC, PES (DAN) 303, DAN 345AB, 351, 352, 353, 354AB, 365ABC, 366ABC, 400, 406, 450, 451, 465ABC, 466 ABC, 500, 546(TE), 565, 566, PES 321

Areas of Emphasis in School Certification, Performance and Choreography, and Pre-Dance Therapy: Contact the department for requirements.

Minor in Dance: Contact the department for requirements.

HEALTH PROMOTION AND EDUCATION

Students majoring in health promotion and education may choose from two areas of emphasis. The school health education area leads to P-12 teacher certification; the health promotion and wellness area prepares students for health promotion and wellness positions in community, corporate, and health care settings.

*Satisfactory participation in one of three department dance companies is required of all performance/choreography majors.

Freshman and Sophomore Years

HOURS

AREAS I, II, and III - Refer to General Core Curriculum for the College of Education, or to individual program checksheet for requirements in these areas. Note: BIO 103-103L and 104-104L and one CHM course are required in Area II. PSY 101 and either SOC 105 or ANT 102 are required in Area III. **60**

AREA IV COURSES RELATED TO MAJOR **30**

- (Teacher Certification)
- EFN 203 5
- EPY 201 5
- PSY 258 5
- SPC 108 5
- CB 220-220L, 221-221L 10
- (Non-Teacher Certification)
- PSY 258 5
- SPC 108 or 256 5
- CS 101-101L 5
- STA 200 5
- CB 220-220L, 221-221L 10
- Physical Education 2

Junior and Senior Years

Area of Emphasis in School Health Education: **92**

Contact the department for requirements.

TOTAL HOURS **185**

Area of Emphasis in Health Promotion and Wellness: **92**

Contact the department for requirements.

TOTAL HOURS **182**

MUSIC EDUCATION

This program leads to the Bachelor of Music degree (see Music, College of Arts and Sciences, for degree requirements).

Freshman and Sophomore Years

HOURS

AREAS I, II, and III - Refer to General Core Curriculum for the College of Education, or to individual program checksheet for requirements in these areas. **60**

AREA IV COURSES RELATED TO MAJOR		30
EFN 203	5	
EPY 201	5	
MUS 110, 111, 122	9	
MUS 182ABC	6	
Secondary Applied Music	5	
MUS 240-244 or 245A-E or 246A-E		
Physical Education	2	
<i>Junior and Senior Years</i>		
Major Courses:		
MUS 282A-482B	16	
Secondary Applied Music	10	
MUS 245F-K		
MUS 246F-K		
MUS 240-244		
MUS 312, 313	10	
MUS 321, 322, 323, 534 or 535	12	
MUS 212, 213, 214, 309, 310, 324, 325, 326, 327	19	
MUS 361 and 362, 363, or 364	6	
Performance Organization	6	
Small Ensembles, MUS 491A-F	3	
Electives from:	2	
MUS 240-244, 345P, 491A-F; ITA 352		
Professional Education:		
EMU 345ABC (TE)	3	
MUS 547 or SPE 300	5	
EMU 546 (TE)	15	
TOTAL HOURS	200	

PHYSICAL EDUCATION AND SPORT STUDIES

This program prepares a student for the undergraduate degree of Bachelor of Science in Education (B.S.Ed.), and for certification to teach health and physical education, grades K-12, in Georgia. Students may select a focus at either the elementary, middle, or high school level or in coaching, health, dance, or other academic subject.

Freshman and Sophomore Years

HOURS

AREAS I, II, and III - Refer to General Core Curriculum for the College of Education, or to individual program checksheet for requirements in these areas. Note: A BIO sequence and one CHM course or a CHM sequence and one BIO course are required in Area II. PSY 101 is required in Area III.

60

AREA IV COURSES RELATED TO MAJOR

AREA IV COURSES RELATED TO MAJOR		30
EFN 203	5	
EPY 201	5	
CB 220-220L, 221-221L	10	
SPC 108 or 256	5	
Elective - See General Core Curriculum	5	
Physical Education	2	
<i>Junior and Senior Years</i>		
PES 305, 307, 336(TE), 345ABC (TE), 372, 461, 475, 482, 546(TE); EXS 360-360L, 383, 463-463L	66	
PES 310-321	12-15	
HPB 171, 335, 336(TE), 506, 521	23	
Option Area required	9-12	
TOTAL HOURS	202-208	

COMMUNICATION SCIENCES AND DISORDERS

The Communication Sciences and Disorders Department offers a preprofessional undergraduate program leading to a Bachelor of Science in Education degree (B.S.Ed.). Students desiring to practice in the areas of speech-language pathology, audiology, or education of the hearing impaired must continue through the master's degree in order to obtain full professional credentials and/or certification from the Georgia Department of Education. Students must apply to the Graduate School for acceptance into a master's program.

Bachelor's Degree in Communication Sciences and Disorders (pre-professional)

Freshman and Sophomore Years

HOURS

AREAS I, II, and III - Refer to General Core Curriculum for the College of Education, or to individual program checksheet for requirements in these areas. Note: A BIO or PCS sequence is required in Area II. PSY 101 is required in Area III.

60

AREA IV COURSES RELATED TO MAJOR

AREA IV COURSES RELATED TO MAJOR		30
EFN 203	5	
EPY 201	5	
SPC 108 or 256	5	
STA 200	5	
LIN 210	5	
PSY 258	5	

Physical Education	2
<i>Junior and Senior Years</i>	
Other Courses:	
CFD(PSY) 395; SPE 300	10
Major Courses:	
CSD 309, 310, 412, 414S, CSD(PSY/ LIN) 450, CSD 452, 453, 471, 500, 511, 579	53
Electives (upper division courses)	35
TOTAL HOURS	190

Communication Sciences and Disorders (Professional Degrees)

Professional degrees are offered at the master's level and above in Communication Sciences and Disorders. For further information, see the *Graduate School Bulletin*.

SPECIAL EDUCATION

The undergraduate program in special education offers a Bachelor of Science in Education degree leading to entry-level state certification in mental retardation. Students also take courses in learning disabilities and behavior disorders that provide awareness and basic skills for serving individuals with these disabilities. This program provides extensive field experiences and, therefore, accepts a limited number of students. To major in special education, a student must have an *overall* (not UGA cumulative) GPA of 2.7. Beginning Winter quarter 1993 and beyond, entering freshmen must have a predicted GPA of 2.7.

Being accepted as a major in special education does not guarantee permission to enroll in "majors only" courses. During the fall quarter each academic year, the special education faculty selects 30 students (sophomores and above) to progress into the last two years of the program. The 30 students are selected based on a rank ordering of all students with over 45 hours. The rank order is based equally on overall GPA and date of matriculation at the University. Students not selected to continue in the program will be advised to change majors. However, these students may be reconsidered in following years, if they wish. Students who are selected will begin a prescribed sequence of courses the following fall. The sequence includes a "majors only" section of SPE 300, all required courses, field experiences, and any electives related to the major. In order to

remain in the program, students must maintain an overall GPA of 2.7.

Freshman and Sophomore Years

	HOURS
AREAS I, II, and III - Refer to General Core Curriculum for the College of Education, or to individual program checksheet for requirements in these areas. Note: PSY 101 is required in Area III.	60
AREA IV COURSES RELATED TO MAJOR	30
EFN 203	5
EPY 201	5
MAT 205	5
Appreciation of ART, MUS, DAN, DRA at the 100-200 level or SPC 108	5
Approved electives	10
Physical Education	2
<i>Junior and Senior Years</i>	
CSD 450 or EEN 500; ERD 401 or other reading education course, SPE 300, 503, 504, 505, 508, 532, 506 and 509B(TE), 595 and 509S(TE), 546BS(TE)	85
Approved electives	20
TOTAL HOURS	197

Other Certification Programs

READING EDUCATION

This program is not a certification program at the undergraduate level. However, undergraduate courses are offered which require admission to a baccalaureate-level teacher certification program. These include: ERD 342, 343, 352, 353, 400, 401, and 403. For further information, see the *Graduate School Bulletin*.

Other B.S.Ed. Programs

DANCE EDUCATION

(See program under the P-12 Teaching Fields section.)

EXERCISE AND SPORT SCIENCE

This program of study is designed to give the student a comprehensive understanding of the scientific basis of physical activity, physical fitness, and sport performance. Graduates are prepared to pursue professional opportunities or graduate study in the areas of sports medicine, exercise science, or health related fitness. Students whose professional interests are in the areas of adult or corporate fitness, cardiac rehabilitation, physical therapy, or athletic training obtain 6 to 17 hours of practical experience during their junior and senior years. Students interested in athletic training are strongly encouraged to begin obtaining practical experience during the freshman year.

Freshman and Sophomore Years

	HOURS
AREAS I, II, and III - Refer to General Core Curriculum for the College of Education, or to individual program checksheet for requirements in these areas. NOTE: MAT 116 or 253, CHM 121, 121L, 122, 122L, and PCS 127-127L or 137-137L are required in Area II for this major; PSY 101 is required in Area III for this major.	60
AREA IV COURSES RELATED TO MAJOR	30
BIO 107-107L, 108-108L	10
CHM 261, 261L or 240, 240L	5
CB 220-220L, 221-221L	10
CS 101-101L	5
Physical Education	2
<i>Junior and Senior Years</i>	
EXS 201, 380-380L, 383, 430, 440, 463-463L, 464, 465, 469, 480-480L	45
Courses Related to Professional Objectives	35
Unrestricted Electives	10
MINIMUM TOTAL HOURS	182

HEALTH PROMOTION AND EDUCATION

(See program under the P-12 Teaching Fields section.)

RECREATION AND LEISURE STUDIES

Students may take courses in Therapeutic Recreation, Recreation Resource Management, or Administration of Leisure Services. Students are encouraged to identify their strengths and build upon them with related coursework in business management, forestry, marketing, computer science, sociology, psychology, and wildlife management to name just a few.

Freshman and Sophomore Years

	HOURS
AREAS I, II, III, and IV - Refer to General Core Curriculum for the College of Education, or to individual program checksheet for requirements in these areas. Note: SPC 108 is required in Area I, PSY 101 and SOC 105 or 160 are required in Area III.	90
Physical Education	2
<i>Junior and Senior Years</i>	
Major Core Courses	
REC 345ABC	3
REC 203, 280, 331, 385, 389, 487, 490, 570	46
Professional Objective Courses (refer to program checksheets for course options)	41
TOTAL HOURS	182

Other Programs (non-B.S.Ed. and non-Teaching)

ASSOCIATE DEGREE PROGRAM IN OFFICE INFORMATION SYSTEMS

This program provides courses in one of three fields in Office Information Systems: Secretarial, Legal Secretarial, or Data Processing/Programming. Basic academic courses are taken at the University of Georgia; occupational preparation courses are taken at the Athens Area Technical Institute. The A.A.S. Degree requires 95 quarter hours of work specified by the Department of Occupational Studies.

Associate of Applied Science (A.A.S.)

Core Requirements: the University of Georgia

	HOURS
ENG 101, 102	10
MAT 102, 105, 109, 116	5
Laboratory Science:	
BIO 103-103L, 104-104L; CHM 111, 111L, 112, 112L; GLY 115-115L, 116-116L; PCS 127-127L, 128-128L	10
Physical Science:	
GGY 104, 120-120L, 121-121L; PCS 101	5
POL 101	5
HIS 251 or 252	5
Choose from the following: ECN 106, 107; PSY 101; SOC 105	10
Physical Education	2
Legal Secretarial Studies	45*
Administrative Secretarial Studies	45*
Data Processing/Programming Studies	45*

COURSES OF INSTRUCTION**Education (EDU)**

Contact Person: Ms. Mary Ann Barrett,
542-1717

200. Introduction to Computing for Teachers. 5 hours.

Introduces teachers to productivity tools, instructional activities, strategies, and software for computer use in teaching and learning. Operating computers to instruct, communicate, and manage in classrooms will be included. Ethical and equity issues related to computing are examined.

Honors Courses**496H, 497H. Directed Reading and/or Projects.** 5 hours each.

These courses offer Honors students of senior division standing the opportunity to engage in individual study, readings or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

*University credit hours equivalent for courses taken at Athens Area Technical Institute.

Art Education (EAR)

Contact Person: Dr. W. Robert Nix
542-1647

(For other courses, see "Art Education," Art Department, College of Arts and Sciences)

335. Basic Curriculum in Art Education. 5 hours. Five 2-hour lab periods.

Prerequisite: Admission to Art Education sequence, Teacher Education Program, and a 2.5 average.

Planning and developing procedures for implementing curriculum at the elementary level. An investigation into the literature, materials and procedures appropriate to children at different developmental levels.

336. Teaching Procedures in Art Education. 5 hours. Five 2-hour lab periods.

Prerequisite: Admission to Art Education sequence, Teacher Education Program, and a 2.5 average.

Planning and implementing art instruction for the secondary level students. Specific teaching procedures, materials and techniques developed from Art Education philosophy and research.

345AB. School Practicum in Art Education. 1 hour each.**400. Special Problems in Art Education.** 1-10 hours. Repeatable for maximum 10 hours credit.

Prerequisite: Senior division standing and permission of department and advisor.

Specialized training appropriate to the individual, involving intensive investigation and analysis into specific problems of Art Education.

434. Art for the Exceptional Child. 5 hours. Three hour lectures and two lab periods of 2-3 hours each per week.

Nature, identification and treatment of children's disabilities through art. Emphasizes the role of art for emotional, social, educational and vocational adjustment of other gifted or disabled students.

499. Research Seminar in Art Education. 1-10 hours. Repeatable for maximum 10 hours credit.

Prerequisite: Permission of department.

A seminar with supervised practice designed to introduce art education majors to various community institutions.

546. Student Teaching in Art Education. 1-15 hours. Repeatable for maximum 15 hours credit.

Prerequisite: Admission to Teacher Education Program, EAR 335 and 336, and a 2.5 average. The student teacher is placed for a quarter in an approved school and supervised in the actual teaching of art.

Counseling and Human Development Services (ECP)

Contact Person: Dr. Ted Miller, 542-1812

399. Career Development for Life Planning. 2-3 hours.

Offers an opportunity for receiving information and developing skills necessary for effective career decision making. Processes of self-assessment, occupational exploration, and preparation for employment are explored. In addition to traditional classroom activity, content is presented in an experiential manner through field trips, observations, role playing, simulation, individualized projects, and contact with resource experts.

400. Special Problems in Counseling and Human Development Services. 1-10 hours. Repeatable for maximum 10 hours credit.

Prerequisite: Permission of department. The topic(s) of this course is arranged for individuals or groups to accommodate the study of current philosophical, psychological, sociological, and developmental trends, unique interests, special training needs and research efforts of students. The course may be taught as an independent study for an individual or group, or as a formal class for all students.

402. Interpersonal Relationships. 5 hours.

Prerequisite: Two undergraduate courses in PSY or EPY.

Interpersonal skills are taught and demonstrated by the instructor. Students practice the skills in role playing situations. Skills included are: physical attending, psychological attending, listening, perceiving surface and underlying feelings, basic responding skills, personalizing skills and initiating skills.

420. Disability and Society: Services and Systems. 5 hours.

Introduction to disability issues from a societal perspective, including private and public service systems that limit or enhance opportunities for rehabilitation of adults with disabilities.

Early Childhood Education (ECE)

Contact Person: Ms. Freida Thornton, 542-4244

400. Special Problems in Early Childhood Education. 1-10 hours. Repeatable for maximum 10 hours credit.

Selected students are permitted to secure specialized training appropriate to the needs of the individual. The

student's project may involve intensive library investigation in a special field or the collection and analysis of original data pertinent to a given problem.

401. (CFD) Teaching and Learning Processes in Early Childhood Education. 3 hours.

Not open to students with credit in ECE(CFD) 343. Prerequisite: Admission to Teacher Education. Translate theories about how children learn into ideas for application in the classroom. Bases for developmentally appropriate practices are examined in light of the students' own experiences as learners.

402. Decision Making for Planning, Teaching, and Organizing Early Childhood Classes. 5 hours.

Not open to students with credit in ECE 302. Prerequisite: Admission to Teacher Education. Reflective decision-making that incorporates the major themes, concepts, and skills involved in organizing, planning and developing instruction in early childhood classrooms.

403. (CFD) Integrated Curricular Practices in Early Childhood Education. 5 hours.

Not open to students with credit in ECE(CFD) 333. Prerequisite: Admission to Teacher Education. Develop philosophical perspectives of teaching and classroom management, consider effective parent-teacher relations, and connect with the wider community as a resource context for teaching and learning. Plan and teach an integrated, thematic curriculum unit for prekindergarten through grade five as part of the field component.

442. (CFD) Organization of Early Childhood Classrooms. 5 hours.

Prerequisite: EPY 403, SPE 300; course in Child Development.

Investigation of early childhood education principles and practices which are germane to organizing and operating the classroom for learners in grades Kindergarten through Grade 4. Students will acquire knowledge of important theoretical approaches in this area as well as practical skills applicable to their work with young children.

500. Early Childhood Education. 5 hours.

Study of facilities, equipment, organization and administration of curricula in early childhood education.

501. Current Trends in Early Childhood Education. 5 hours.

Interdisciplinary factors and research in the education of children ages three to eight.

510. (SPE) Survey of Early Childhood Special Education. 5 hours.

See SPE 510.

515. (CFD) Families, Schools, and Communities. 5 hours.

See CFD 515.

546. (CFD) Student Teaching in Early Childhood Education. 1-15 hours.

Educational Psychology and Measurement (EPY) and Educational Research (ERS)

(EPY)

Contact Person: Dr. Carl J. Huberty,
542-4110

201. Human Development and the Educative Process. 5 hours.

Mental, physical, emotional, moral, and social growth over the course of the life span in relation to the educative process.

204. Learning and Motivation. 5 hours.

Not open to students with credit in EPY 304.

Learning theory and processes of both students and teachers, dimensions of motivation related to learning and performance.

302. (PSY/AI) Introduction to Cognitive Science. 5 hours.

Prerequisite: PSY 101 or PHY 101 or EPY 204. Interdisciplinary study of mind and intelligent activity that forms cognitive sciences. Contributions of psychology, philosophy, linguistics, biology, anthropology, computer science, and education toward uncovering important aspects of the mind and intelligent activity are discussed.

305. Adolescent Psychology. 5 hours.

Prerequisite: EPY 204 or equivalent. Interests, needs, and abilities of adolescents; evaluation of their total development.

314H. Learning and Motivation. 5 hours.

Not open to students with credit in EPY 204.

Prerequisite: Approval of Honors Program.

The study of learning and motivational application theories and their application to educational settings. Special emphasis is placed on cognitive theory as it relates to school learning.

400. Special Problems in Educational Psychology. 1-10 hours. Repeatable for maximum 10 hours credit.

May be independent study with variable credit with consent of instructor or assembled class especially developed to study some problem or set of problems in educational psychology with specified credit and prerequisites.

401. Psychology of Early Childhood. 5 hours.

Prerequisite: EPY 204 or equivalent. Interests, needs, and abilities of children; evaluation of their total development.

403. Behavior Management and Evaluation. 5 hours.

Prerequisite: EPY 204.

Strategies for establishing classroom climates conducive to educational progress; design of instruments to assess strategy effectiveness. Problems related to pupil inattention and persistent misbehavior considered.

431. (PSY) Cognitive Development. 5 hours.

See PSY 431.

500. Educational Tests and Measurements. 5 hours.

Prerequisite: Four courses in education.

Nature and function of measurement in education. Teacher-made and standardized tests and scales. Introductory statistical concepts of measurement.

511. Characteristics of Gifted Children and Youth. 5 hours.

Prerequisite: EPY 204 or equivalent.

Psychological characteristics of gifted children and youth; including studies of the lives of eminent persons, empirical studies of gifted children and youth today, and models for identifying gifted children.

546. Student Teaching in Educational Psychology. 1-15 hours. Repeatable for maximum 15 hours credit.

Prerequisite: Major in educational psychology.

(ERS)

Contact Person: Dr. Carl J. Huberty,
542-4110

400. Special Problems in Educational Research. 1-10 hours. Repeatable for maximum 10 hours credit.

Independent study with permission of department.

401. Methods of Research in Education. 5 hours.

Four hours lecture; two hour lab periods. Exploration of diverse research approaches used in behavioral science settings, including critical review and interpretation of published research.

411. Applied Statistical Methods in Education. 5 hours.

Four hours lecture; two hour lab periods. Prerequisite: ERS 401 or equivalent.

Techniques for describing and summarizing data for educational research studies. Applications of the standard normal distribution and the use and interpretations of standard scores. Inferential statistics for one and two population studies including means, proportions, and correlations.

English Education (EEN)

Contact Person: Dr. Mark Faust, 542-4524

300. Children's Literature. 3-5 hours.

Literature suitable for elementary school children, stimulation of children's reading.

400. Special Problems in English Education. 1-10 hours. Repeatable for maximum 10 hours credit.

Prerequisite: Permission of department.
Individualized study of selected topics related to the teaching of English.

404. The Oral Language Arts—Early Childhood Education. 3 hours.

Prerequisite: ENG 101 and 102.

This course consists of two components, beginning with the study of children's language acquisition and development. This study provides the basis for the other component, techniques for teaching vocabulary development, oral discussions and listening skills, and dramatic activities.

435. English Curriculum in Secondary Schools. 5 hours.

Planning for teaching English in secondary schools.

436. Methods of Teaching English in Secondary Schools. 5 hours.

Methods for teaching English in secondary schools.

442. Whole Language Teaching in Early Childhood Education. 1-15 hours.

Recent research and theory on oral and written language acquisition, development, and variation and the implications for classroom practices. Whole language instructional techniques for the development of written and oral language are explored.

500. Language Acquisition and Development. 5 hours.

A study of native and second language acquisition processes, phonological, morphological, syntactic, and semantic, with attention to regional, social, and functional variation in language and contrasts between English and other selected languages.

506. Literature Study in the Secondary Schools. 5 hours.

A study of literature and teaching methods appropriate for an effective secondary school literature program.

507. English Language Studies for Teachers. 5 hours.

Instructional applications of language concepts drawn from theories of grammar, semantics, dialectology, lexicography, and the history of English.

509. Composition in the Elementary and Secondary School. 5 hours.

Instruction in the modes of written expression and study of composition teaching methods.

510. Informational Literature in Early Childhood and Middle Schools. 5 hours.

Survey of informational literature for grades K-8. Providing opportunities for first-hand reading of informational literature and examining selection criteria and ways to integrate informational books into language arts and content area curricula.

516. Children's Literature for the Middle School. 5 hours.

Prerequisite: ENG 102.

Study of the existing body of children's literature appropriate for children in the middle school; development of criteria for book selection and of techniques for stimulation of children's interest in reading.

517. Teaching Language in the Middle School. 5 hours.

Develops basic understandings about language: language change, dialect and usage variation, and approaches to grammar. Students also develop skill in diagnosing student needs, planning instruction in language development, and evaluating growth.

519. Teaching Composition in the Middle School. 5 hours.

Focuses on teaching composition in the middle grades. Students try various writing assignments—fictional and informational writing and poetry—to develop their own writing skills, to plan assignments, and to work on developing skill in responding to children's writing.

526. Poetry in Early Childhood and Middle School Classrooms. 5 hours.

A broad variety of poems and enrichment activities for use in elementary and middle school classes; ways of encouraging children to respond to published poetry and to write poetry.

529. Writing Across the Curriculum. 5 hours.

Not open to students with credit in EEN 509 or 519.

Using writing as a teaching strategy in content area classrooms. Students experience writing as a tool for learning and writing as a process in order to develop their writing skills, plan content area assignments, evaluate children's writing, and understand how children can think about and learn content material through writing.

546. Student Teaching in English. 1-15 hours.

Foreign Language Education (EFL)

Contact Person: Dr. Mark Faust, 542-4524

400. Special Problems in Foreign Language Education. 1-10 hours. Repeatable for maximum 10 hours credit.

Prerequisite: Permission of department.

Individualized study of selected topics related to the teaching of foreign languages.

435. Foreign Language Curriculum and Methodology in the Elementary School. 5 hours.

Foundation of curricular design, second language acquisition, and methods of teaching foreign languages in the elementary school.

436. Foreign Language Curriculum and Methodology in the Secondary School. 5 hours.

Curricular design of foreign languages in the secondary school and the techniques and strategies for teaching and evaluating language acquisition in the secondary schools.

486. (LIN/ANT) Language in Culture and Society. 5 hours.

See LIN 486.

501. Methods and Materials for Teaching English as a Second Language. 5 hours.

Prerequisite: Permission of department.

Objectives and approaches to teaching English as a Second Language; instructional materials and professional resources; principles of testing and interpreting student proficiency and progress; principles of evaluating materials, student methods, and curricula.

502. Theory and Practice for Teaching English as a Second Language. 5 hours.

Prerequisite: EFL 501.

Strategies for teaching advanced reading and writing skills; approaches to the teaching of patterns of American culture; curricular implications for English as a Second Language; observation and teaching practicum.

505. Teaching for Cross-Cultural Understanding. 5 hours.

Lecture and discussion in areas of cross-cultural analysis, attitudes toward other cultures, strategies for teaching culture in the language classroom and the testing of cultural insights.

510. American Language and Cultural Studies for Foreign Students. 1-5 hours.

Designed to help foreign students develop advanced English skills in understanding academic lectures, comprehending reading materials, speaking with grammatical accuracy and acceptable pronunciation, and writing for academic purposes.

546. Student Teaching in Foreign Language Education. 1-15 hours.

Foundations of Education (EFN)

Contact Person: Dr. Ronald VanSickle, 542-7265

203. Foundations of Education. 5 hours.

Prerequisite: Sophomore or higher class standing.

Analysis of issues related to the origins, nature, functions, and consequences of education in the United States.

School of Health and Human Performance

Health Promotion and Behavior (HPB)

Contact Person: Dr. Barbara Wilks, 542-3313

119. Fundamentals of First Aid and Emergency Response. 3 hours.

Instruction in fundamentals of first aid, cardiopulmonary resuscitation (CPR), and general emergency response.

171. Health and Wellness. 3-5 hours.

Factors affecting the level of wellness of the individual are considered. Topics include mental health, nutrition, diet and weight control, physical fitness, smoking, human sexuality, consumer health, alcohol and other drugs, disease, environmental health, and injury prevention.

302. Introduction to Health Promotion and Education. 5 hours.

Analysis of the philosophy and principles underlying the field of health promotion and education. Includes literature, research, organizations, scientific foundations, and employment potential.

315. Issues in Women's Health. 5 hours.

Contemporary issues that affect the health of women, including health status perspectives, preventive measures, health care alternatives, and special health concerns.

319. Advanced First Aid. 5 hours.

Problems and training in the aspects of emergency medical care required at the scene of an accident or in a sudden illness. Students who qualify may receive American Red Cross certification. CPR training and certification included.

321. Issues in Health Consumerism and Self-Care. 5 hours.

Analysis of health products and services and the factors that influence personal choices in the health marketplace. Includes a discussion of the philosophy, theory and practice of self-care and health activism.

335. Basic Curriculum in School Health Education. 5 hours.

Curriculum development, review of scope and sequence, content, resources, and materials.

336. Teaching Procedures in School Health Education. 3 hours.

Prerequisite: HPB 335.

Development of lesson plans including concepts and objectives; examination and application of various teaching methods; utilization of media, community resources, and assessment techniques.

345. Practicum in Health Education. 1-3 hours.

Individual practical experience within the school setting.

370. Community Health. 5 hours.

An overview of community health programs. Includes organizational structure of federal, state and local health-related agencies. Also analysis of the interrelationship of political, social and economic dimensions of community health.

375. Foundations of Injury Prevention. 5 hours.

An introduction to the significance of injury as a health problem and to the nature of injury prevention programs.

400. Special Problems in Health Promotion and Behavior. 1-10 hours.

Prerequisite: Permission of department.

Independent study of selected topics.

433. (SPC) Health Communication. 5 hours.

See SPC 433.

435. Health Promotion Program Development I. 5 hours.

Prerequisite: HPB 171 and 302 and permission of department.

Fundamentals of health promotion program development in community, worksite, and hospital settings. Emphasis given to program content, strategies, and the overall planning process.

436. Health Promotion Program Development II. 5 hours.

Prerequisite: HPB 435.

Continuation of health promotion program development, emphasizing program implementation. Topics include: leadership, conflict resolution, communication, funding, marketing, and related professional issues pertaining to health promotion and education.

442. Health Education in Early Childhood Education. 3-5 hours.

Health education content, methods and resources for Early Childhood teachers. Emphasis is on comprehensive school health education programs.

445. Industrial Safety. 5 hours.

Introduction to the specific areas and the broad scope in methods, materials, and problems in industrial safety programming with special emphasis on organization and implementation of accident prevention and control techniques.

506. Educational Strategies in Human Sexuality. 5 hours.

Theory and practice of sexuality education; basic issues, philosophy and guiding principles; legal implications; needs, justification and objectives; curriculum critique for school and community programs; content knowledge; resource materials; acceptable methods to approach controversial topics.

516. Special Topics in Health Promotion and Behavior. 5 hours.

Emphasis on the etiology of contemporary health problems and the role of parents, teachers, administrators and the community in meeting and preventing health problems. Examples include: sexually transmitted diseases, smoking, violence, health of the elderly, women's health, school health issues.

521. The Effects of Drug Use and Abuse. 5 hours.

Social, moral, psychological, and physiological causes and effects of drug use and abuse. Individual, family, and community factors related to prevention and treatment.

546. Student Teaching in Health Education. 1-15 hours.

556. Field Experience in Health Promotion. 5-10 hours, repeatable for maximum 10 hours credit.

Prerequisite: Senior standing and permission of department.

Practical experience in health education/promotion through placement in an appropriate community or corporate setting.

Basic Physical Education (PEB)

Contact Person: Kenney Bullock, 542-2934

Basic Physical Education courses have designated prefix and number PEB 100 to PEB 199. A list of scheduled courses is available in the *Schedule of Classes* printed each quarter. Courses in the Basic Physical Education Program are structured as either one or two credit courses.

Skill performance and dance courses meeting two hours/week are for one credit. Those classes meeting four hours/week are for two credits. Some of these courses are designated as Beginning, Intermediate, or Advanced. The letter following the course number specifies the level: A—Beginning Level, B—Intermediate Level, C—Advanced Level. Prerequisite courses or specific skill requirements are necessary for intermediate and advanced level courses.

PEB 190 through 195 are two credit hour Basic Physical Education courses. All courses are fitness oriented. They are scheduled four days per week. One day per week will be designated for a lecture series; the remaining three days will focus on the selected fitness activity.

Some courses require payment of an additional fee. This fee may be in the form of a requirement that students purchase specific equipment or supplies, or that students pay a fee to the vendor supplying the facility and/or equipment. Basic Physical Education courses are held in the Ramsey Student Center, the Physical Education Building, and various off-campus locations. Students must provide their own transportation to off-campus facilities. Students should consult their advisors or the director of Basic Physical Education regarding prerequisites, fees, and class locations.

Grading in the Basic Physical Education program is pass-fail. A grade of S is Satisfactory, U is Unsatisfactory. Specific criteria for a satisfactory grade is established by each instructor. Under some circumstances an Incomplete, I, can be recorded. Students must initiate a withdrawal during the withdrawal period in order to receive a W. A WF grade will be recorded for students who do not initiate a withdrawal and never attend, or cease attending, class.

Physical Education and Sport Studies (PES)

Contact Person: Dr. Rosemary McMahan, 542-5947

The prefix PES supersedes the prefix PED. Students may not receive credit for a given numbered course taken under both the PED and PES designations.

292. Officiating of Football. 2 hours.

Development of the competencies necessary for officiating football including knowledge of rules, practice of proper officiating techniques and practicum in officiating during game settings.

293. Officiating of Basketball. 2 hours.

Development of competencies necessary for officiating basketball including knowledge of rules, practice of proper officiating techniques and practicum in officiating during game settings.

295. Officiating of Softball. 2 hours.

Development of the competencies necessary for officiating softball including knowledge of rules, practice of proper officiating techniques and practicum in officiating during game settings.

303. (DAN) Rhythmic Movement Activities for Children. 3 hours.

A course designed to introduce the teacher to the skills and activities of creative movement and rhythm for children from nursery school through 6th grade.

305. Foundations of Movement and Fitness. 3 hours. Two hours lecture, two one-hour labs per week.

A course emphasizing concepts related to development of motor abilities and health-related fitness. Knowledge and directed laboratory experiences will enable the student to assess and further develop abilities in basic movement skills, motor ability and physical fitness components as related to body management and sport.

307. Physical Education in the Elementary School. 1-5 hours.

Designed to help the teacher understand the place of physical education in the elementary school program and its contribution to the child. Experience is given in planning, teaching, and evaluating physical educational activities.

308. Analysis and Teaching of Movement Games. 5 hours.

A course designed to familiarize students with content and structure of movement games for children. The student will also study and practice effective approaches by which games can be taught to children.

310-321. Teaching of Motor Skills. 3 hours each.

Prerequisite: Basic knowledge and technique of the activity.

Focus on knowledges and techniques of skill analysis and teaching in physical education classes in the content area. Lab periods will be arranged. Students are required (depending on program emphasis) to select four to five of the courses offered.

310 Tumbling

312 Golf

313 Tennis

314 Badminton

315 Wrestling

316 Soccer

318 Gymnastics

319 Modern Dance

320 Weight Training

321 Folk and Square Dance

336. Teaching Procedures in Physical Education. 5 hours.

Organization and administration of physical education and recreation programs in the school. Planning the curriculum in physical education as a part of the total school program.

345ABC. School Practicum in Physical Education. 1 hour each.

Individual practical experience within the school setting.

350. Psychological and Administrative Foundations for Coaching. 3 hours.

Role of the coach in dealing with psychological, ethical, and administrative aspects relative to the coaching profession. Designed for the non-physical education major.

372. History and Principles of Physical Education. 5 hours.

A survey of the history and study of principles and trends in health, physical education and recreation, professional organizations, literature, and outstanding programs.

390-395. Theory and Coaching Methods. 3 hours each.

Prerequisite: Basic knowledge and technique of the activity.

Organized to focus on advanced strategies and coaching methods of team and individual sports. Lab periods will be arranged. Students are required (depending on program emphasis) to select two to three of the courses offered.

390 Track and Field

391 Volleyball

392 Football

393 Basketball

394 Baseball

395 Softball

400. Special Problems in Physical Education. 1-10 hours.

Prerequisite: Permission of department.

Directed study in physical education.

442. Movement Education for the Young Child. 1-5 hours.

Developmentally appropriate movement skills and activities for use with children in early childhood. Students will engage in field experiences in local elementary schools.

461. Adapted Physical Education. 5 hours.

Not open to students with credit in PED 361.

Theory of adapted physical education and implementation of physical activity for individuals with disabilities in a school, homebound, community or clinical setting. Course emphasis will be characteristics, functional ability, and program implementation for individuals with disabilities.

475. Motor Skill Behavior. 5 hours.

Prerequisite: PES 305 and CB 220-220L.

A study of the acquisition and development of motor skill behavior from birth to advanced age. Includes consideration of basic concepts, developmental sequences, neuropsychological and environmental factors affecting development and maintenance of skills.

482. Social Aspects of Sport and Physical Activity. 5 hours.

Prerequisite: PES 372 and PSY 101 or permission of department.

A view of the influence of social forces and psychological factors affecting the individual's performance in sports.

505. Problems of Teaching in Physical Education. 1-5 hours.

Evaluation of instructional procedures utilized in the teaching of physical education in the public schools.

514. Current Problems in Physical Education and Sport Studies. 1-5 hours.

Problems met in a comprehensive program of physical education and sport studies. Special emphasis given to problems in areas of students' interests.

525. Women and Sport. 5 hours.

Political, social, and cultural factors which have influenced the participation of women in sport and physical activity.

546. Student Teaching in Physical Education. 1-15 hours.

Exercise Science (EXS)

Contact Person: Dr. Kirk J. Cureton,
542-4378

The prefix EXS supersedes the prefix PED. Students may not receive credit for a given numbered course taken under both the PED and EXS designations.

201. Introduction to Exercise Science. 5 hours.
Exercise and sport sciences, including history, elementary concepts, methodologies, applications and career opportunities.

301. Care and Prevention of Athletic Injuries. 5 hours.

Not open to students with credit in HED 309.

Prerequisite: CB 220-220L.

Basic evaluation, treatment, and prevention of athletic injuries. Introduction to the field of athletic training, evaluation of injuries and emergency medical procedures, prevention and treatment methods for joint and muscle injuries, heat illness and nutritional problems.

302. Advanced Care and Prevention of Athletic Injuries. 5 hours.

Prerequisite: EXS 301.

Advanced techniques for evaluation, treatment, and prevention of athletic injuries. Assessment equipment, protective devices, sport-specific gear and special considerations, athletes with medical conditions, conditioning to prevent injury, rehabilitation methods, therapeutic modalities.

345ABC. Practicum in Exercise and Sport Science. 1 hour each.

Individual practical experience in the areas of fitness, conditioning, athletic training, or physical therapy. Practicums will be conducted at exercise science laboratories, sport and fitness facilities, or clinical settings such as hospitals, medical, and sport medicine facilities.

351. Biomechanical Foundations of Coaching. 3 hours.

Not open to students with credit in EXS 360-360L. The analysis and application of biomechanical principles as they relate to sport performance and training. Designed for the non-physical education major interested in coaching.

360-360L. Biomechanics and Applied Anatomy. 5 hours.

Prerequisite: CB 220-220L.

Analysis and application of Newton's Laws as they influence human motion. Application of anatomical principles to human motion topics, such as physical training, injury prevention and rehabilitation.

380-380L. Biomechanics. 5 hours.

Not open to students with credit in EXS 360-360L. Prerequisite: PCS 127-127L or 137-137L; and CB 220-220L.

Application of mechanical principles to human movement, equipment design, and injuries.

383. Measurement and Evaluation. 5 hours.

Prerequisite: (EXS 201 or PES 305) and MAT 116.

Methods in measuring and evaluating physical performance; methods in measuring knowledge and attitudes; procedures for evaluating tests and their results; data analysis techniques.

400. Special Problems in Exercise and Sport Science. 1-10 hours. Repeatable for maximum 10 hours credit.

Prerequisite: Permission of department.

Independent study of selected topics in the area of Exercise and Sport Science.

430. Exercise Epidemiology. 5 hours.

Prerequisite: CB 220-220L and 221-221L; or PHR 349 and 350; or permission of department.

Health-related aspects of exercise, physical activity, and physical fitness from the perspective of epidemiology. Biological mechanisms for healthy adaptations to physical activity and the behavioral determinants of exercise participation are addressed.

431. Physical Fitness Programs. 5 hours.

Prerequisite: EXS 463-463L or permission of department.

A study of physical fitness programs for youth, adults, and special populations. Topics include program goals and objectives, principles and methods of physical fitness development and testing, evaluation of existing programs, and administrative and programming considerations.

440. Exercise and Sport Psychology. 5 hours.

Prerequisite: PSY 101 and [CB 220-220L and 221-221L] or [PHR 349 and 350] or permission of department.

Effects of participating in exercise and sport on psychological traits and states. Cognitive and neurobiological mechanisms and psychological limitations to athletic performance are examined.

463-463L. Exercise Physiology I. 5 hours.

Prerequisite: CB 220-220L, 221-221L or equivalent.

An introduction to the physiological effects of human physical activity. Neuromuscular, cardiovascular-respiratory and metabolic responses and adaptations to exercise are studied.

464. Scientific Principles of Conditioning and Fitness. 3 hours.

Prerequisite: EXS 463-463L.

Designing and implementing individualized, scientifically-based exercise prescriptions for athletic conditioning or physical fitness development including development of muscular strength and endurance, aerobic and anaerobic power, flexibility, and weight control or reduction.

465. Principles and Techniques of Fitness Testing. 2 hours.

Prerequisite: EXS 464.

Knowledge and skills required in conducting physical fitness tests for muscular strength and endurance, aerobic and anaerobic power, and flexibility for body composition.

469. Exercise Physiology II. 5 hours.

Prerequisite: EXS 463-463L.

Mechanics, energetics and motor unit recruitment during skeletal muscle contraction; regulation of energy metabolism during exercise; mechanisms

underlying oxygen delivery to muscles during exercise.

480-480L. Biomechanics II. 5 hours.

Prerequisite: EXS 380-380L.

Effects of mechanical forces on bones, muscles, and connective tissue. Analyzes the biomechanics of specific regions of the body and mechanically-induced injuries.

545. Internship in Exercise and Sport Science.

5-15 hours, repeatable for maximum 15 hours credit.

Prerequisite: EXS 463-463L or permission of department.

Practical experience in a program related to sport or health/fitness.

Recreation and Leisure Studies (REC)

Contact Person: Dr. Barbara Wilhite, 542-5064

115. Leisure: The Individual and Society. 3 hours.

A comprehensive survey of leisure and its relationship to the individual and society. Understanding of the psychological, sociological, economic and historic contexts of leisure. Students formulate their own philosophy of leisure and develop an understanding of their own leisure behavior.

203. Introduction to Park and Recreation Administration. 5 hours.

A study of the history and development of the organized park and recreation movement; theories of play, professional organizations and scope of the field; analysis of individual's potential contribution to the field.

280. Programming in Leisure Service. 5 hours.

Not open to students with credit in REC 201 or 380.

Prerequisite: REC 203 or permission of department.

A comprehensive approach to leisure programming. Emphasis on elements of program planning and organization, leadership, and supervision.

331. Outdoor Recreation and Environmental Awareness. 5 hours.

Not open to students with credit in REC 531.

Prerequisite: REC 280 or permission of department.

Environmental policies and land ethics of natural resource management agencies. Emphasis will be placed on understanding outdoor recreation behavior and issues arising from human-environment interactions, including carrying capacities and human-wildlife conflicts.

345ABC. School Practicum in Recreation. 1 hour each.

385. Recreation for Special Populations. 5 hours.

Prerequisite: REC 203.

Study of recreation service delivery to special populations. Solutions to barriers to full leisure participation placed before the developmentally disabled and physically impaired are examined.

386. Camp Counseling. 3 hours.

Designed to give prospective camp counselors an understanding of the total camp program, duties and responsibilities of camp counselors. Techniques of camp leadership will be considered.

389. Seminar in Recreation. 1 hour.

Prerequisite: Senior class standing.

Discussion of the current aspects of the field of recreation as a profession. Trends and problems which are of concern to graduating recreation majors.

400. Special Problems in Recreation and Leisure Studies. 1-10 hours.

Selected students are permitted to secure specialized training appropriate to their needs. Project may involve intensive library investigation or the collection and analysis of original data pertinent to a given problem.

402. Therapeutic Recreation Services. 5 hours.

Prerequisite: REC 385.

A study of the basic historical, philosophical and professional foundations of therapeutic recreation. Topics include the continuum of service and settings, terminology used, interrelationships in allied health, and review of basic program planning concepts in therapeutic recreation.

403-403L. Clinical Therapeutic Recreation Processes. 5 hours.

Prerequisite: REC 402.

Therapeutic recreation will be studied as a systems approach to planning, activity analysis and prescription, adaptive devices and techniques, assessment techniques and instruments, as well as facilitation strategies employed in clinical settings.

404. Community Therapeutic Recreation. 5 hours.

Prerequisite: REC 385.

Focuses upon mainstreaming and leisure services for individuals with disabilities. Topics include consumer advocacy and involvement, community organization, normalization, accessibility, innovative programs, educating the community, and ways to improve recreation for the disabled.

427. Outdoor Recreation Field Laboratory. 5 hours.

Prerequisite: REC 203, permission of department. Field trip to Land Between the Lakes, Brandon Springs, Tennessee, to study experimental campground design and construction, energy alternatives, environmental education programs, and interpretation programs. Various state and federal recreation professionals meet with the group to discuss intensive recreation resource management techniques. (8-day period, early September, prior to beginning of Fall quarter.)

484. Environmental Interpretation for Recreation. 5 hours.

Not open to students with credit in REC 384.

Prerequisite: REC 280 or permission of department.

Methods, principles, and philosophies of environmental interpretation in natural systems, with specific reference to natural resource recreation contexts. The roles of environmental education and persuasive communication in promoting environmental attitudes and behaviors will be emphasized.

487. Organization and Administration of Recreation. 5 hours.

Not open to students with credit in REC 387.

Prerequisite: REC 280 or permission of department.

Management principles, concepts, and practices applied to the process of organizing, managing, and directing recreation and park organizations.

490. Research and Evaluation in Leisure Services. 5 hours.

Prerequisite: REC 280.

The nature and value of research in leisure services. Emphasis is on understanding and using research, including needs assessment and program evaluation, in management, planning, and administration of leisure facilities and programs.

512. Problems in School and Community Recreation. 5 hours.

Problems of school and community recreation pertaining to philosophy, program, facilities and leadership. This course will consider the school camp program.

513. Leisure Education. 5 hours.

Prerequisite: REC 280 or permission of department.

Leisure education models, underlying principles, and systematic procedures to facilitate leisure experience.

532. Women and Leisure. 5 hours.

Prerequisite: Permission of department.

Feminist critique of leisure theories and women's representation in leisure history, management, and activities.

535. Park Management. 5 hours.

Prerequisite: REC 487.

An introduction to the management, operation, and development of public parks and open spaces.

543. Camping Administration. 5 hours.

Prerequisite: REC 386 or equivalent experience.

Examination of the organization and administration of camps with particular emphasis on program planning, selection and training of staff, campsite selection and development, health and safety, and evaluation and special problems. Individualized study of camp programs for persons with disabling conditions is available.

570. Internship in Recreation and Leisure Studies. 15 hours.

Not open to students with credit in REC 546.

Students are placed in selected recreation departments for an entire quarter, during which time they are supervised in directing, supervising, and managing recreation activities.

Dance Education (DAN)

The prefix DAN supersedes the prefix DED. Students may not receive credit for a given numbered course taken under both the DAN and DED designations.

Contact Person: Dr. Mark Wheeler, 542-4415

153. (PEB) Concert Dance. 1 hour. Repeatable for maximum 6 hours credit.

Not open to students with credit in PEB(DED) 153ABCDEF or PEB(DED) 153.

Prerequisite: Permission of department.

Designed to provide performance preparation and experience in modern dance, ballet, jazz and ethnic styles. Choreography, although not required, is encouraged. An annual concert performance plus other public performances are required.

163. Non-Stop Dance Company. 2 hours. Repeatable for maximum 12 hours credit. One 3-hour lab period per week.

Prerequisite: Permission of department.

This is a laboratory course designed to provide teaching, performance and production experience through the formulation and presentation of master classes and programs in dance. Through residencies in the realistic setting of schools and communities, the student becomes familiar with the operation and management of the small dance company and gains an understanding of how to best serve the needs of the public.

201. Dance Appreciation. 5 hours.

Introduction to all aspects of the dance experience, exploring related roles of the dancer, choreographer and spectator. Historical and critical

Dance Education

readings and illustrated lectures will acquaint the student with masterpieces of dance theatre art and develop the student's responsiveness to dance.

250. Rhythmic Analysis for Dance. 3 hours.
A study of the fundamentals of rhythm relevant to the needs of the dance educator, performer and/or choreographer with emphasis placed upon rhythmic analysis.

252. Improvisation. 2 hours.
Provides the individual an opportunity to discover and explore self-initiated movement and idea relationships and experiences. The purpose is to aid in the development of the student's creative approach to composing and performing. Emphasis will be on individual and group interaction within structured and free improvisational situations.

257. Introduction to Modern Dance Composition. 3 hours.
A study of the principles of dance composition with experience in the development of individual and group studies.

258. Dance Perspectives. 3 hours.
A study of the nature of dance as an art form and as an educational and therapeutic vehicle. The course is designed to increase the student's knowledge of the many facets of dance and to encourage examination of his/her purpose in dance. The class involves lectures, seminars and studio experiences.

265ABC. Modern Dance Tech. I. 2 hours each.
This low intermediate-level course is designed for the purpose of aiding the student in the acquisition and development of technical skills in modern dance. Techniques basic to this dance form plus motional properties as they relate to dance will be emphasized.

266ABC. Ballet Tech. I. 2 hours each.
Designed to build the strength, flexibility, endurance, and control necessary for performance of low intermediate-level ballet barre exercises, adagio sequences, and allegro enchainments. An understanding of proper body mechanics and the French vocabulary for ballet will also be emphasized.

268. Jazz Technique I. 2 hours. Repeatable for maximum 4 hours credit. Two 2-hour lab periods.
Prerequisite: Permission of department.
Movement applications for improving the execution, stylistic definition, and rhythmic acuity of jazz dance.

303. (PES) Rhythmic Movement Activities for Children. 3 hours.
See PES 303.

345ABC. School Practicum in Dance Education. 1 hour each.

351. Composition II. 3 hours.
Prerequisite: DAN 257.
A study of principles of dance composition with emphasis on the utilization of those principles in solo and group choreography.

352. Theory and Practice in Modern Dance Technique. 3 hours.
Prerequisite: Permission of department.
Analysis and exploration of the technical aspects of modern dance with emphasis on anatomical structure, muscular activity and movement principles. Participation and teaching experience in a technique class will be part of the laboratory work.

353. Theories of Movement. 3 hours.
Prerequisite: Permission of department.
A study of movement theories of noted dancers and movement analysts.

354AB. Dance Workshop. 3 hours each.
Prerequisite: DAN 257.
Projects in choreography, directing, producing and performance culminating in public concert presentations.

365ABC. Modern Dance Tech. II. 2 hours each.
Designed for the intermediate upper-level student in modern dance. Its purpose is to provide for the continued development of the student's technical skills and performance ability.

366ABC. Ballet Tech. II. 2 hours each.
Designed to build the strength, flexibility, endurance and control necessary for performance of intermediate upper-level ballet barre exercises, adagio sequences and allegro enchainments. Pointe work will be included.

368. Jazz Technique II. 2 hours. Repeatable for maximum 4 hours credit. Two 2-hour lab periods.
Prerequisite: Permission of department.
Movement applications for improving technical proficiency, performance dynamics, and stylistic clarity. Dance combinations will explore pop, funk, adagio, blues, and Broadway jazz styles.

400. Special Problems in Dance Education. 1-10 hours.

406. Dance Pedagogy. 5 hours.
Content, methods and materials for dance instruction for the secondary school student. Specific teaching procedures, materials and approaches to assessment are emphasized. Includes studio teaching by the student.

450. History of Dance from Primitive Man Through the Renaissance. 5 hours.
A study of the forms of dance both as a reflection of cultural history and as an art form from primitive times through the Renaissance.

451. History of Dance from the Baroque Period Through the 20th Century. 5 hours.

A study of the forms of dance both as a reflection of cultural history and as an art form from the Baroque period through the 20th Century. The contributions of outstanding leaders will be analyzed.

455. Readings in Dance. 3 hours.

A critical review of literature in the field of dance and related arts with emphasis on current personalities, research, issues, and educational trends.

465ABC. Modern Dance Tech. III. 2 hours each.

This course is designed for the advanced student of modern dance. Its purpose is to allow for the continued development of technical skill with emphasis on individual style and performance sensitivity.

466ABC. Ballet Tech. III. 2 hours each.

This course is designed to build the strength, flexibility, endurance and control necessary for performance of advanced-level ballet barre exercises, adagio sequences, allegro enchainments, and pointe work. Style, perfection, and performance quality will be emphasized.

500. Senior Recital. 5 hours.

Prerequisite: DAN 354AB.

A directed study culminating in performance and choreography by the student in public recital.

546. Student Teaching in Dance Education. 1-15 hours. Repeatable twice for maximum credit of 15 hours.

Prerequisite: PES(DAN) 303 and DAN 406 and Admission to Teacher Education Program.

565. Modern Dance Technique IV. 2 hours. Repeatable for maximum 6 hours credit.

Prerequisite: DAN 465ABC.

Continued development of modern dance technical skills with emphasis on individual style and performance sensitivity.

566. Ballet Technique IV. 2 hours. Repeatable for maximum 6 hours credit.

Prerequisite: DAN 466ABC.

Builds strength, flexibility, endurance, and control necessary for performance of highly advanced-level ballet barre exercises, adagio sequences, allegro enchainments, and pointe work. Style, perfection, and performance quality will be emphasized.

Instructional Technology Education (EIT)

Contact Person: Dr. Melvin M. Bowie,
542-4030

401. Basic Instructional Media Competencies.

3 hours. Two 2-hour lab periods.

Not open to students with credit in EAV(ESS) 401. Prerequisite: Junior/Senior standing.

Introductory laboratory course: including operation of audio-visual equipment, sources, selection, and preparation of instructional materials.

402. Reference Materials and Services. 5 hours. Not open to students with credit in ELE 402.

Nature of reference process, information sources, and evaluation of reference services. Emphasis on types of materials, databases, and reference services that support K-12 curricula.

403. Technical Services. 5 hours.

Not open to students with credit in ELE 403.

Study of procedures necessary for internal organization of a media center. Includes practice in analyzing, classifying, cataloging, and organizing all types of media materials.

404. Administration of School Media Center. 5 hours.

Not open to students with credit in ELE 404.

Study of the organization, services, functions, and administration of the school media center.

407. Instructional Design. 5 hours.

Application of systematic instructional design theory and procedures for analyzing instructional and training needs and designing, developing, evaluating, and implementing effective and efficient instruction to meet identified goals and objectives.

500. Utilization of Educational Media. 5 hours.

Not open to students with credit in EAV 500.

Survey of the role of media in the instructional process. Focus is on the characteristics of mediated delivery systems, the selection of media to fit instructional needs, design and evaluation of instructional materials, and the classroom integration of media.

501. Building Library Media Collections. 5 hours.

Not open to students with credit in ELE 501.

Building balanced media center collections to support elementary, middle, and secondary school curricula. Analysis of media selection aids, print and non-print reviewing sources, publishers and publishing.

518. Design and Production of Educational Media. 5 hours.

Not open to students with credit in EAV 501: Laboratory course dealing with graphic, duplication, photographic, and audio techniques necessary for the production of basic instructional media materials: displays, slides, transparencies, audio tapes, and other media formats.

519. Educational Television Production. 5 hours. Not open to students with credit in EAV 502. Prerequisite: EIT 518.

Design and production of instructional videotapes. Emphasis is on portable television equipment suitable for school or small business applications. Includes laboratory practice with multi-camera production techniques and electronic editing.

520. Photography in Instruction. 5 hours. Three lectures, two 2-hour lab periods.

Not open to students with credit in EAV(EIA) 520. Prerequisite: EIT 518 or permission of department.

Basic principles, skills, and techniques of photography and their application to problems in instruction. Areas covered include introductory skills in camera and film use, darkroom procedures, processing and printing in black and white and color.

Mathematics Education (EMT)

Contact Person: Dr. Larry Hatfield, 542-4194

335. Secondary School Mathematics Curriculum. 5 hours.

Prerequisite: Admission to teacher education, EPY 204 and MAT 254.

Determining content for the mathematics curriculum of the secondary school and demonstrating competency in this content.

336. Teaching Procedures in Secondary School Mathematics. 5 hours. Five lectures and five lab periods.

Prerequisite: EMT 335.

Planning, developing, and implementing instruction in secondary school mathematics.

345A. School Practicum in Secondary Mathematics. 1 hour. Two weeks in a public secondary school and 1 hour seminar per week in the following quarter.

A school-based, planned practicum experience coordinated with beginning a school year.

400. Special Problems in Mathematics Education. 1-10 hours. Repeatable for maximum 15 hours credit.

In-depth exploration of special topics in mathematics education of interest to individual students or groups.

435. History of Mathematics. 3 hours.

Prerequisite: MAT 254.

An historical development of selected topics in mathematics. The organization of the course is along lines of mathematical content, but the motivational and pedagogical relevance of such historical insights are emphasized.

441. Mathematics Learning: K-4. 3-5 hours.

A study of individual progress and problems in the learning of mathematics. Individual assessment, diagnostic and remedial teaching, internship.

442. Mathematics Methods in Early Childhood Education. 1-5 hours.

Prerequisite: MAT 205 and 206.

Methods and materials for teaching mathematics in nursery school, kindergarten, and grades one, two, and three. The use of concrete and semiconcrete materials and informal laboratory activities appropriate for children in that age range.

468. Computers and Algorithms in Mathematics Education. 5 hours.

Prerequisite: MAT 254 or permission of department.

Methods and materials for teaching school mathematics with emphasis upon algorithmic constructions and computer programming.

469. Computer-Based Mathematics Instruction. 5 hours.

Prerequisite: EMT 468 or EMT 335 or equivalent.

Analysis and design of computer-based instruction in school mathematics. Pedagogical bases for designing computer-based instruction will be developed.

470. Advanced Design of Computer-Based Mathematics Instruction. 5 hours.

Prerequisite: EMT 469 and EMT 336 or EMT 505 or equivalent.

Advanced concepts and applications of instructional design for analyzing and creating computer courseware in mathematics education.

499. Research Seminar in Mathematics Education. 1-10 hours. Repeatable for maximum 15 hours credit.

In-depth exploration of special topics in mathematics education of interest to individual students or groups.

501. Teaching Mathematics in the Elementary School. 5 hours.

Prerequisite: Four courses in education, two courses in mathematics and either teaching experience or permission of department.

An examination of the interrelationships between contemporary mathematics for elementary schools, effective means of communicating mathematical ideas for children and elementary learning theory.

505. Problems of Teaching Secondary School Mathematics Education. 5 hours.

Prerequisite: Four courses in education. Instructional procedures and evaluation of mathematics teaching. Current issues in the teaching of mathematics are stressed.

515. Contemporary General Mathematics. 5 hours.

An approach to mathematics curriculum, teachers' procedures, and evaluation through the examination of mathematics content with emphasis on the function concept, applications, and problem solving.

525. Problem Solving in Mathematics. 5 hours. Prerequisite: MAT 254.

Students will engage in extensive experience and practice in solving mathematical problems. This experience will serve as background for examining theories of mathematics problem solving abilities. Pedagogical techniques for secondary school mathematics problem solving will be examined and curriculum organization to incorporate problem solving in secondary school mathematics programs will be explored.

528. Teaching Number Systems in the Middle School. 5 hours.

Corequisite: MAT 502. Didactics of number systems for middle school mathematics. Teaching methods, curriculum materials, psychological factors for developing natural, integer, rational and real number structures.

529. Teaching Geometry in the Middle School. 5 hours.

Corequisite: MAT 503. Didactics for geometry for middle school mathematics. Teaching methods, curriculum materials, psychological factors for developing geometric and measurement concepts.

530. Teaching Algebra in the Middle School. 5 hours.

Prerequisite: Two courses in mathematics and two courses in education, or permission of department. Didactics of algebra and number theory for middle school mathematics. Teaching methods, curriculum materials, psychological factors for developing algebraic concepts.

531. Teaching Mathematics in the Middle School. 5 hours.

Prerequisite: EMT 530. Methods and materials for teaching mathematics in the middle school.

546M. Student Teaching in Middle School Mathematics. 1-10 hours.

Prerequisite: EMT 531. Full-time teaching in a middle school with supervision by University personnel in mathematics.

546S. Student Teaching in Secondary School Mathematics. 1-15 hours. Repeatable for maximum 15 hours credit.

Full-time teaching in a secondary school.

Middle School Education (EMS)

Contact Person: Dr. Elizabeth Pate, 542-4244

303. Introduction to Middle School Education. 5 hours.

Open only to Middle School teacher education majors. An introduction to the middle school as a segment of American education with emphasis on its rationale, antecedents, and status in modern education.

400. Special Problems in Middle School Education. 1-5 hours. Repeatable for maximum 10 hours credit.

Prerequisite: Admission to Middle School Program. Independent study of educational problem. Student confers with instructor who is in field.

502. Teaching in the Middle School. 5 hours. Prerequisite: EMS 303 and admission to Teacher Education.

Open only to Middle School teacher education majors. Various roles of middle school teachers with particular emphasis on planning, implementing, and evaluating the instructional process. Supervised field experience is included.

503. The Middle School. 5 hours. Prerequisite: One basic course in curriculum.

Will study in depth research supporting the concept of a separate organization and program for youngsters 10 to 14 years of age, types of curricular plans for the middle school, aspects of teaching in the middle school, and the organization and staff of the middle school.

504. The Middle School Curriculum. 5 hours. Prerequisite: EMS 303, 502, and admission to Teacher Education.

Open only to Middle School teacher education majors. Curriculum planning with special emphasis on appropriate educational outcomes for the middle school student. Implications will be drawn from their unique physical, intellectual, and emotional characteristics. The process of curriculum evaluation will also be studied. A supervised field experience is included.

546. Student Teaching in Middle School. 1-15 hours.

Prerequisite: EMS 303, 502, 504, and admission to Teacher Education. Full-time laboratory experience in a middle grade during which student assumes major responsibilities for instruction.

Music Education (EMU)

Contact Person: Dr. Mary Leglar, 542-2763

(For other courses, see "Music Education," School of Music, College of Arts and Sciences.)

345A. School Practicum in Music Education. 1 hour.

400. Special Problems in Music Education. 1-10 hours. Repeatable for maximum 10 hours credit.

Prerequisite: Permission of department.

Specialized training in music education appropriate to the needs of the individual. The student's project may involve intensive library investigation in music education or the collection and analysis of original data pertinent to a problem in music education.

546. Student Teaching in Music Education. 1-15 hours. Repeatable for maximum 15 hours credit.

Communication Sciences and Disorders (CSD)

Contact Person: Dr. Marilyn Newhoff, 542-4561

The departmental designation CSD supersedes the designation SPA. Students may not receive credit for a given numbered course taken under both the SPA and CSD designations.

309. Phonetics. 5 hours. Four hours lecture and two 1-hour labs per week.

Not open to students with credit in CSD 209.

Detailed study of the American English sound system emphasizing (1) discrimination of standard sound and sound variants and (2) transcription via the International Phonetic Alphabet.

310. Introduction to Communication Sciences and Disorders. 5 hours.

Introductory course in communication sciences and disorders. Study of the major etiology and characteristics of all types of speech-language and hearing disorders and discussion of diagnostic and therapeutic methods. Observation of diagnostic and therapy sessions in the University Speech and Hearing Clinic.

400. Special Problems in Communication Sciences and Disorders. 1-10 hours. Repeatable for maximum 10 hours credit.

Prerequisite: Permission of department.

Adaptation of the communication sciences and disorders curriculum to the individual needs of students.

412. Anatomy and Physiology of the Speech and Hearing Mechanism. 5 hours.

Not open to students with credit in CSD 412 (earned prior to Fall 1993) or 413.

Prerequisite: Permission of department.

Anatomic and physiological structures and functions which underlie respiration, phonation, resonance, articulation, and hearing as they relate to oral communication.

414S. Speech and Hearing Science. 5 hours.

An introduction to the study of oral communication as a scientifically measurable phenomenon. Special orientation to speech as an acoustic event and the tools for its measurement.

450. (LIN/PSY) Language Development. 5 hours.

A study of the various aspects of language development. Provides a foundation in topics such as the following: processes of reception, integration, and expression of symbolic information; the nature and effects on personal development and behavior of linguistic symbolism. Students learn basic norms for language development as a basis for diagnosis.

452. Language Disorders of Children. 5 hours.

Prerequisite: CSD (PSY/LIN) 450 or permission of department.

Pragmatic, semantic, syntactic, and morphologic characteristics of children's language disorders. Etiology and characteristics of children's language disorders with emphasis in various exceptional populations.

471. Introduction to Audiology. 5 hours.

Prerequisite: Permission of department.

Review of the basic physics of sound and measurement of hearing. Introduction to the pathologies of hearing, hearing loss associated with pathologies and medical and/or rehabilitative strategies.

473. Psycho-Social Aspects of Deafness. 5 hours.

Prerequisite: CSD 471 or permission of department.

A study of the development, adjustment, and educational needs of the deaf, including mental development, personality development, emotional adjustment, and social maturity; the aptitudes, special abilities and associated handicaps of the deaf.

474. Articulatory Disorders of Speech. 5 hours.

Prerequisite: CSD 310 or permission of department, and CSD 309 and CSD 412.

Etiology, rationale and methods of assessment and therapy for functional and organic disorders

of articulation. Development of a therapeutic program and lesson plans.

475. Voice Disorders. 5 hours.

Prerequisite: CSD 412 and 414S.

Pitch, loudness, and quality disorders of voice due to functional and organic causes. Etiology and therapies with direct observation experiences.

476. Stuttering: Etiology and Therapy. 5 hours.

Major theories of causation of stuttering whether based in neurophysiological, emotional or learning factors. The development of an integrated therapy based on modern research.

480. Neural Bases of Speech and Language. 5 hours.

Prerequisite: CSD 310 or permission of department.

Neuroanatomy and neurophysiology of speech, hearing, and language from a communication science perspective.

481. Basic Manual Communication. 5 hours.

History and description of manual communication systems. Practice in the expressive and receptive use of fingerspelling and sign language.

500. Basic Clinical Procedures in Communication Sciences and Disorders. 5 hours.

Prerequisite: CSD 474.

Principles underlying clinical practice in communication sciences and disorders related to following administrative case procedures including writing clinical reports, developing therapy plans, managing the behavior of young children.

502. Field Observation in Speech-Language Pathology. 2 hours.

Prerequisite: CSD 500.

Extensive observations of speech-language pathologists in various work settings. Students are given assignments relevant to the required observations. Periodic on-campus seminars are held to discuss observation experiences.

504. Clinical Practice in Speech-Language Pathology. 1-10 hours. Repeatable for maximum 10 hours credit.

Prerequisite: CSD 500.

Supervised clinical practice in speech-language pathology including functional and organic disorders. Communication problems provided for observation and clinical practice include articulation, voice, child language, stuttering and aphasia. In addition, speech and language problems associated with cleft palate, cerebral palsy, and hearing loss are included in the therapy program.

511. Basic Clinical Procedures in Audiology. 3 hours.

Prerequisite: CSD 471.

Preparation for direct clinical practice in audiology. Topics include audiometric calibration, pure

tone and impedance audiometry, clinical masking and report writing.

512. Field Observation in Audiology. 2 hours.

Prerequisite: CSD 471.

Extensive observation of audiologists and of teachers of the hearing impaired in various work settings. Students are given assignments relevant to the required observations. Periodic on-campus seminars are held to discuss observation experiences.

514. Clinical Practice in Audiology. 1-10 hours. Repeatable for maximum 10 hours credit.

Prerequisite: CSD 511.

Clinical and field experience in audiology including neonatal testing, pediatric audiology, public school screening, work with the pre-school deaf, auditory training and speech reading, noise measurements and hearing conversations, and geriatric audiology.

534. Language Assessment and Intervention with Preschool Children. 5 hours.

Prerequisite: CSD 310 and 452.

Assessment and intervention strategies required for treatment of language disorders in the preschool population. Formal and informal language assessment procedures; selection and implementation of appropriate intervention models.

579. Rehabilitative Audiology I. 5 hours.

Prerequisite: CSD 471.

A study of the theories and procedures used in the rehabilitation of both the deaf and hard of hearing. Both the historical development and current trends in education of the hearing impaired will be reviewed.

Special Education (SPE)

The prefix SPE supersedes the prefix EXC. Students may not receive credit for a given numbered course under both the EXC and SPE designations.

Contact Person: Dr. Cheri Hoy, 542-4566

300. Survey of Special Education. 5 hours.

Not open to students with credit in EXC 300, 500, 700.

Prerequisite: Permission of department.

Topics related to individuals with exceptionalities including possible impact, causes and characteristics of specific disabling conditions. Service delivery models, administrative arrangements, educational considerations, and current issues relating to individuals with exceptionalities are discussed.

400. Directed Study in Special Education. 1-10 hours. Repeatable for maximum 10 hours credit. Prerequisite: Permission of department. Students are engaged in specialized training appropriate to the needs of selected individual.

503. Assessment of Individuals with Disabilities. 5 hours.

Prerequisite: SPE 300 or permission of department.

Educational and adaptive behavior assessment of individuals with disabilities. Included are basic measurement concepts and procedures for administering standardized, informal, and curriculum-based texts.

504. Characteristics of Individuals with Mental Retardation. 5 hours.

Prerequisite: SPE 300 and permission of department.

Types, nature, and causes of mental retardation and implications for adjustment and education. Issues in eligibility and placement of individuals in special programs.

505. Classroom and Behavior Management for Individuals with Disabilities. 5 hours.

Prerequisite: SPE 300 and permission of department.

Classroom and behavior management in special education environments. Emphasis is on the objective evaluation of behavior and positive behavior management models and procedures.

506. Teaching Individuals with Mild Mental Retardation. 5 hours.

Prerequisite: SPE 504 and permission of department.

Corequisite: SPE 509B.

Study and selection of methods and materials used in teaching students with mild mental retardation. Emphasis is on direct instruction of functional skills.

507. Secondary School Programming for the Mentally Retarded. 5 hours.

Prerequisite: Permission of department.

Study will emphasize the needs of the adolescent and young adult mentally retarded: pre-occupational, occupational and related experiences, home and family living, civic responsibility, and community living. The relationship of the teacher as a counselor and the utilization of community resources will also be stressed.

508. Curriculum for Individuals with Mental Retardation. 5 hours.

Prerequisite: SPE 504 and permission of department.

Development, modification, and adaptation of curricular approaches to the education of individuals with mental retardation. Development of

individualized programs, including goals and objectives.

509B. Practicum in Special Education—Mild Mental Retardation. 1-15 hours. Repeatable for maximum 15 hours credit.

Prerequisite: SPE 503, 504, and permission of department.

Corequisite: SPE 506.

Supervised field experience related to teaching individuals with mild mental retardation. Application of methods and procedures learned in SPE 506 and previous courses are practiced on site.

509S. Practicum in Special Education—Moderate to Severe Mental Retardation. 1-15 hours. Repeatable for maximum 15 hours credit.

Prerequisite: SPE 504, 505, and permission of department.

Corequisite: SPE 595.

Supervised field experience related to teaching individuals with moderate to severe mental retardation. Application of methods and procedures learned in SPE 595 and previous courses are practiced on site.

510. (ECE) Survey of Early Childhood Special Education. 5 hours.

Impact of disabilities and at-risk conditions on early child development and education (birth-8 years). Emphasizes the individual needs of children with disabilities in inclusive early childhood environments.

520. Characteristics of Individuals with Behavioral Disorders. 5 hours.

Prerequisite: SPE 300 and permission of department.

Characteristics of behavioral disorders including definition, eligibility, assessment, causal factors, characteristics of various disorders, and current issues.

532. Characteristics of Individuals with Learning Disabilities. 5 hours.

Prerequisite: SPE 300 and permission of department.

Characteristics, intervention procedures, and issues surrounding the life-long conditions of learning disabilities.

546B. Student Teaching in Special Education—Mild Mental Retardation. 1-15 hours.

Prerequisite: SPE 506, 509B, and permission of department.

Supervised field experience in which students develop, refine, and demonstrate basic competencies essential for effective teaching of individuals with mild mental retardation.

546S. Student Teaching in Special Education—Moderate to Severe Mental Retardation. 1-15 hours.

Prerequisite: SPE 509S, 595, and permission of department.

Supervised field experience in which students develop, refine, and demonstrate basic competencies essential for effective teaching of individuals with moderate to severe mental retardation.

595. Teaching Individuals with Moderate to Severe Disabilities. 5 hours.

Prerequisite: SPE 503, 504, and permission of department.

Corequisite: SPE 509S.

Preferred teaching practices for individuals who have moderate to severe disabilities. Design of appropriate curriculum, assessment of present level of performance, and behavioral methods of instruction.

Reading Education (ERD)

Contact Person: Dr. David Reinking,
542-2718

099R. Reading Improvement. 3 institutional hours.

A reading improvement course which focuses on increasing reading comprehension, developing vocabulary, establishing a flexible reading rate, and improving test-taking and study skills.

342. Teaching of Reading to Early Elementary Children. 5 hours.

Introduction to development of reading readiness and the teaching of reading in early school years, with supervised practice in several basic teaching procedures.

343. Corrective Reading in the Early Elementary Grades. 5 hours.

Instruction/practice in diagnosing/prescribing corrective instruction in reading for young children experiencing moderate difficulty in learning to read. Practice in diagnosing/prescription with one child or small group of children and reporting results.

352. Teaching of Reading in the Middle School. 5 hours.

Methods, materials, and evaluation strategies for teaching reading in the middle grades. Instructional techniques are introduced with attention to underlying principles of thinking and learning. Printed materials and electronic media are appraised for developing literacy. Formal and informal methods are considered for appraising pupil progress in reading.

353. Content Area Reading in the Middle School. 5 hours.

Prerequisite: ERD 352.

An in-depth study of the special skills essential for reading in the content areas commonly taught in the middle school grades. Attention given to testing, study skills, and classroom organization for reading in Language Arts, Social Studies, Mathematics, and Science. Supervised practice in middle school classrooms.

354. Corrective Reading in the Middle School. 5 hours.

Prerequisite: ERD 352.

Identification and correction of reading problems of middle school age pupils. Emphasis on individual and small group strategies. Special attention to testing and teaching materials for corrective work. Pupils with reading problems are evaluated and tutored and case reports are prepared.

400. Special Problems in Reading Education. 1-10 hours.

Prerequisite: Permission of department.

Students are provided specialized training in the teaching of reading appropriate to the needs of the individual. The student's project may involve intensive library investigation in the field of reading or the collection and analysis of data pertinent to a specific problem concerned with reading instruction.

401. The Teaching of Reading. 5 hours.

A systematic coverage of the teaching of reading, including methods, techniques, and materials, from first through twelfth grades.

403. Teaching Reading in the Secondary School. 5 hours.

The development of reading skills needed by students in grades 7-12 for success in school subjects.

Science Education (ESC)

Contact Person: Dr. Joseph P. Riley,
542-1763

345A. School Practicum in Science Education. 1 hour.**400. Special Problems in Science Education.** 1-10 hours. Repeatable for maximum 10 hours credit.

Prerequisite: Permission of department.

Selected students are permitted to secure specialized training appropriate to their individual needs. This study may involve intensive library investigation on a single topic or the development of science instructional materials relevant to a given problem.

441. Foundations for Science Teaching. 5 hours. For science majors who are interested in teaching and required for undergraduates in the secondary science teacher training program. The course provides a basis for students to make career decisions about science teaching, to examine the interrelationships of science and science teaching, and to gain basic process skills and lab technique skills.

442. Science for Early Childhood Education. 1-5 hours. Course especially designed for undergraduate majors in Early Childhood Education.

443. Science Curriculum for the Middle School. 5 hours. Prerequisite: EMS 303, 502, admission to Teacher Education. Science curriculum materials suitable for use in the middle school are analyzed for appropriateness to achieve specific instructional objectives. The development and selection of curriculum materials are related to purposes of science instruction including the range of materials essential to meet the needs of middle school pupils.

444. Methods of Teaching Science in Middle School. 5 hours. Prerequisite: EMS 303, 502, admission to Teacher Education. Using classroom, laboratory and field experiences, science teaching skills including planning, using and monitoring teaching strategies with different instructional materials and evaluation schemes are developed.

445. Science Curriculum for the Secondary School. 5 hours. Prerequisite: ESC 441, admission to Teacher Education. Science curriculum materials suitable for use in grades 7-12 are analyzed for appropriateness to achieve specific instructional objectives. The development and selection of curriculum materials are related to purposes of science instruction. The range of materials needed for pupils in grades 7-12 is included.

446. Methods of Teaching Science in the Secondary School. 5 hours. Prerequisite: ESC 441, admission to Teacher Education. Using classroom, laboratory and field experiences, skills in science teaching methods, instructional materials and evaluation suitable for pupils in grades 7-12 are developed. These include using teaching strategies with different instructional materials and evaluation schemes for effective science instruction.

448. Computers in Science Education. 5 hours. Prerequisite: ESC 445 and 446 or equivalent.

School application of instructional computing is emphasized. Use of computers in science classrooms for drills, tutorials, problem solving, simulations and testing. Attention is given to selection and evaluation of computer-based science teaching materials.

503. Teaching Science to Students with Special Educational Needs. 5 hours. Develops an understanding of the basis and practice of modifying science programs/teaching for students with special educational needs and introduces skills for modifying science programs/teaching strategies.

504. Teaching Strategies for Middle and Secondary School Science Teachers. 5 hours. Prerequisite: EMS 303, admission to Teacher Education. Designed to improve the instructional competencies of students preparing to teach science in the middle school. The course includes preparation in the planning and implementation of instructional strategies.

546. Student Teaching in Science Education. 1-15 hours. Repeatable for maximum 15 hours credit.

Social Science Education (ESS)

Contact Person: Dr. Ronald VanSickle, 542-7265

340. Middle Grades Social Studies Methods. 5 hours. Prerequisite: Admission to Teacher Education. Study and evaluation of teaching materials and techniques in social studies for middle grade students.

342. Early Childhood Social Studies. 5 hours. Prerequisite: Admission to Teacher Education. Introduction to basic social studies curriculum and instruction for young children; content selection, lesson and unit planning, teaching methods, materials, and evaluation strategies.

352. Teaching State and Local Citizenship. 5 hours. Prerequisite: POL 101 and Regents' Social Science Core. Middle School or Social Science Education majors only; permission of department. Examination of rationale, resources in political science and civic/citizenship education, and teaching procedures for instruction on state and local citizenship in middle grades and high schools.

400. Special Problems in Social Science Education. 1-10 hours. Repeatable for maximum 10 hours credit.

Intensive study of a problem in social science education through library research or collection and analysis of primary data.

410. (HIS) Teaching United States History. 5 hours.

Classic historiography and current debates among historians over major themes and events in U.S. history. Examination of ways in which this historical scholarship can be incorporated into social studies teaching. Evaluation of materials and methods used to teach U.S. history in secondary and middle schools.

435. Social Science Curriculum in Secondary Schools. 5 hours.

Prerequisite: Admission to Teacher Education. Current status and trends with illustrations of selected teaching strategies and media for both cognitive and affective learning.

436. Methods of Teaching Social Science in Secondary Schools. 5 hours.

Prerequisite: Admission to Teacher Education. Development of instructional objectives and the examination and application of instructional procedures, utilization of media and methods of evaluation.

438. Using Computers in Social Science Education. 5 hours.

Prerequisite: EFN 203 and EPY 204. Admission to Teacher Education.

Selection, adaptation, and application of micro-computer programs for individualized drill, problem solving, simulations, and testing related to social science objectives in schools are examined. Emphasis is on learning to use social studies computer instructional materials.

445AB. School Practicum in Social Science Education. 1 hour each.

Prerequisite: Admission to Teacher Education. In-school observation and practical experience.

501. Teaching of Geography. 5 hours.

Prerequisite: One course in geography; 40 hours of social science.

Geographic principles and the history of geography in the school curriculum; the literature of the field, including textbooks; the application of special techniques, i.e., field methods and map study; and geographic evaluation.

504. Teaching Social Studies in the Middle Grades. 5 hours.

Prerequisite: Admission to Teacher Education. The examination and application of instructional procedures and materials focusing upon the cognitive and affective processes relevant to middle grades social studies education.

520. Economic Education in the Social Science Curriculum. 5 hours.

Examination and evaluation of instructional strategies and materials for teaching basic economic concepts in an integrated K-12 social science curriculum with emphasis on utilizing a decision-making model for analyzing contemporary economic problems.

546. Student Teaching in Social Science Education. 1-15 hours. Repeatable for maximum 15 hours credit.

Prerequisite: Admission to Teacher Education and ESS 436.

Teaching of social studies in public school under supervision of a teacher and a Social Science Education faculty member.

Speech Education (ESP)

Contact Person: Dr. Carol J. Fisher,
542-5674

436. Teaching Procedures: Speech. 5 hours. Methods for teaching speech in secondary schools.

546. Student Teaching in Speech Education. 1-15 hours. Repeatable for maximum 15 hours credit.

Student Teaching (EST)

Contact Person: Dr. John Reynolds,
542-1497

510. Fundamentals in the Supervision of Student Teaching. 5 hours.

Prerequisite: Limited to supervising student teacher personnel and permission of department. Introduction to the theory, principles, and practices in the supervision of student teaching and other professional laboratory experiences.

Department of Occupational Studies

Contact Person: Dr. Helen Hall, 542-1682

Occupational Studies (EOS)

400. Special Problems in Occupational Studies. 1-10 hours. Repeatable for maximum 10 hours credit.

In-depth exploration of selected topics in occupational studies of interest to individual students or groups.

410. Principles and Practices of Career Education. 5 hours.

Not open to students with credit in EVO 410. Prerequisite: Senior standing, major in Education. Role of career education in elementary, middle, and secondary school; major theories of career development; use of standardized assessment, career information resources, and curriculum materials; special issues and trends influencing work and careers.

503. Organizing and Managing Work and Community-Based Education Programs. 5 hours.

Not open to students with credit in EVO 503. Prerequisite: Permission of department. Planning, implementing, and directing various school-to-work transition models in occupational studies.

505. Problems of Teaching Occupational Studies. 5 hours.

Not open to students with credit in EVO 505. Prerequisite: Permission of department. Selection, utilization, and evaluation of theories that support effective teaching in occupational studies.

526. Technical Field Theory. 5-20 hours. Repeatable for maximum 20 hours credit.

Not open to students with credit in EVO 526. Corequisite: ETS 311.

Achievement in technical theory associated with occupational fields evaluated through National Occupational Competency Testing Institute or official scores submitted from health care credentialing agency. Technological studies students are administered written examination to determine competence. Credit recommended by comparing scores with national norms.

528. Technical Field Skills. 5-20 hours. Repeatable for maximum 20 hours credit.

Not open to students with credit in EVO 528. Corequisite: ETS 310.

Performance achievement in technical field evaluated through National Occupational Testing Institute or official scores submitted from health care

credentialing agency. Technological studies students are administered comprehensive performance examination on tasks common to specific occupational field. Credit recommended by comparing scores with national norms.

546. Student Teaching in Occupational Studies. 1-15 hours. Repeatable for maximum 15 hours credit.

Full-time supervised student teaching experience in an existing occupational studies program.

555. Students with Special Needs in Programs of Occupational Studies. 5 hours.

Not open to students with credit in EVO 555. Learning characteristics of students with special needs including those who are disabled, economically disadvantaged, and at-risk. Implications for occupational studies are considered and modifications of curriculum and instruction are designed.

Agricultural Education (EAG)

334. Program Management in Agricultural Education. 3 hours.

Prerequisite: Junior standing. Managing the components of quality high school Agricultural Education programs, including collection and use of demographic data to design and implement community-based programs.

335. Basic Curriculum Planning in Agricultural Education. 5 hours.

Prerequisite: EPY 204 or 305 and permission of department.

Determining curriculum content and planning instructional programs in vocational agriculture for high school and adult groups based upon their needs and interests. Directed observation in selected schools.

336. Teaching Procedures in Agricultural Education. 5 hours.

Prerequisite: EPY 204 or 305, EAG 335 and permission of department.

Study and evaluation of teaching procedures and techniques which might be used in teaching vocational agriculture to high school and adult groups. Directed observation and planning for student teaching.

345. School Practicum in Agricultural Education. 1-3 hours.

Maximum credit 3 hours. Planned, short-term school experience during which the student observes and assists teachers in a comprehensive secondary school Vocational Agriculture program. Includes follow-up seminars on campus.

349. Seminar in Agricultural Education. 3 hours. Prerequisite: Student teaching.

A seminar dealing with problems emerging from experiences in apprentice teaching. Emphasis will be placed upon the planning of school programs and the place and responsibility of the teacher in the school.

400. Special Problems in Agricultural Education. 1-10 hours. Repeatable for maximum 10 hours credit.

Prerequisite: Departmental enrollment.

Specialized training appropriate to the needs of the individual, involving intensive library investigation or the collection and analysis of data pertinent to a given problem.

505. Problems of Teaching Agricultural Education. 5 hours.

Instructional procedures and evaluation of teaching in terms of pupil growth.

546. Student Teaching in Agricultural Education. 1-15 hours. Repeatable for maximum 15 hours credit.

Prerequisite: EPY 204 or 305, EAG 335 and 336. Prospective teachers of vocational agriculture are placed as student teachers in carefully selected schools of the state for an entire quarter. During this period they are carefully supervised in dealing with the problems of teaching vocational agriculture.

Business Education (EBE)

205. Document Formatting. 5 hours.

Prerequisite: Prior keyboarding/typewriting instruction or permission of department.

Learn basic document arrangements, including letters, memos, tables, legal documents, reports/manuscripts, and business forms.

335. Basic Curriculum in Business Education. 5 hours.

Corequisite: EBE 336.

Determining curriculum content and planning instructional programs in business education.

336. Teaching Procedures in Business Education. 5 hours.

Corequisite: EBE 335.

Study and evaluation of teaching materials, methods and techniques in business education. Includes directed observation, lesson planning, and field experience in individual laboratory.

400. Special Problems in Business Education. 1-10 hours. Repeatable for maximum 10 hours credit.

Prerequisite: Senior standing in business education.

Selected students are permitted to secure specialized training appropriate to the needs of the individual. The student's project may involve library investigation in the field or the collection and

analysis of original data pertinent to a given problem.

401. Business Communication. 5 hours.

Theory and practice in the processes (thinking, reading, writing, speaking and listening) involved in business communication.

402. Computer Concepts and Operating Systems for Occupational Studies. 5 hours.

Not open to students with credit in EBE 508.

Prerequisite: EBE 205 or ability to type 30 wpm. Computer hardware and software; fundamental operating procedures; data organization and representation; current trends in occupational uses of computer technology. Emphasis on instructional approaches for teaching microcomputer operating systems in occupational studies. Includes MS-DOS, Windows, and Macintosh.

503. Word Processing Applications. 5 hours.

EBE 205 or ability to type 35 wpm.

Word processing skill development utilizing microcomputers with popular software package designed for administrative word processing applications. Focus is on advanced features of word processing package including merging, sorting, mathematical functions, and desktop publishing.

506. Desktop Publishing in Occupational Studies. 5 hours.

Prerequisite: Touch keyboarding skill.

Integration of applications for electronic publishing. Elements of page design, development of effective publications, presentations, and instructional activities involving desktop publishing knowledge, skill, and application.

507. Office Management. 5 hours.

Scientific office management: principles, equipment, supervision, information management, methods and procedures, job organization and evaluation, selection and training of office personnel.

509. Spreadsheet and Database Applications for Occupational Studies.

Prerequisite: EBE 205 or ability to type 30 wpm.

Application of spreadsheets, database, and presentation software for use in occupational education teaching situations. Includes basic spreadsheet commands, graphs, data sorting, querying, and macro design. Database design and organization is also provided. Emphasis on teaching is enabled through the application of presentation software.

510. Systems Analysis and Design for Occupational Studies. 5 hours.

Prerequisite: EBE 509, CS 533, or permission of department.

Provides technical background and knowledge for teaching information system development and implementation in occupational studies. Instructional strategies for project management, documentation standards, hardware and software considerations, organizational change and personnel factors, needs analysis, feasibility studies, systems design, and structured programming in an XBASE language.

546. Student Teaching in Business Education. 1-15 hours.

576. Consumer Financial Planning. 5 hours.
Prerequisite: ECN 107 or equivalent.

Focuses on specific consumer problems that students encounter during school years, as well as those they will confront after leaving school; emphasizes how our economy functions, making purchases wisely, managing money to best advantage, evaluating sales and advertising practices, guarding against unwise buying practices and dishonest selling practice.

Marketing Education (EME)

300. Marketing Business Experience. 5-15 hours. Repeatable for maximum 15 hours credit. Not open to students with credit in EDE 200. Directed work experience in a marketing business. Orientation to the vocational implications of work experience. An analytical project is completed. Four-hundred hours of work earn five credit hours.

301. Principles of Marketing Education. 5 hours. Not open to students with credit in EDE 301. Orientation to and explanation of marketing education in school and business settings. Duties of the teacher-coordinator and the program's mission are examined.

335. Basic Curriculum in Marketing Education. 5 hours.
Not open to students with credit in EDE 335.
Prerequisite: EME 300 and 301 and admission to Teacher Education.
Content identification, program organization, preparation of instructional objectives, guidelines for selection and development of instructional materials in marketing education.

336. Methods of Teaching Marketing Education. 5 hours.
Not open to students with credit in EDE 336.
Prerequisite: EME 300 and 301 and admission to Teacher Education.
Determining and organizing course content based on competency lists and objectives; constructing units and lesson plans; locating and selecting resources; demonstrating specific teaching methods pertinent to marketing topics.

400. Special Problems in Marketing Education. 1-10 hours. Repeatable for maximum 10 hours credit.

Not open to students with credit in EDE 400.
Prerequisite: Permission of department.
Individual or group study and research into specific problems affecting marketing education.

499. Research Seminar in Marketing Education. 1-10 hours. Repeatable for maximum 10 hours credit.

Not open to students with credit in EDE 499.
Prerequisite: MKT 360.
Overview of the research process and its implications for teaching and program management in marketing education.

505. Problems of Teaching Marketing Education. 5 hours.

Not open to students with credit in EDE 505.
Prerequisite: Permission of department.
Constructing, applying, and evaluating specific methods pertinent to marketing content categories in the marketing education curriculum. Traditional and innovative concepts are explored.

506. Curriculum Planning in Marketing Education. 5 hours.

Not open to students with credit in EDE 506.
Analysis of the curriculum development process in marketing education. Social and labor trends and forecasts are used to establish relevance.

507. Advertising Functions in Marketing Education. 5 hours.

Not open to students with credit in EDE 507.
Prerequisite: MKT 360.
Advertising topics with an emphasis on teaching advertising in marketing education. Covers relationships of advertising to cooperative work experience and ways to enhance career decision-making skills.

508. Sales Functions in Marketing Education. 5 hours.

Not open to students with credit in EDE 508.
Prerequisite: EME 301 and MKT 360.
Sales topics with major emphasis on ways of teaching selling in marketing education. Relationships to the cooperative work experience and ways to enhance career decision-making skills are included.

546. Student Teaching in Marketing Education. 1-15 hours.

Not open to students with credit in EDE 546.
Prerequisite: EME 335 or 505 and 336 or 506.
Full-time supervised student teaching experience in an existing marketing education program. No other classes may be taken during enrollment in this course.

Home Economics Education (EHE)

335. Basic Curriculum Planning in Home Economics Education. 5 hours.

336. Teaching Procedures in Home Economics Education. 5 hours.

345AB. September School Practicum in Home Economics Education. 1 hour each.

400. Special Problems in Home Economics Education. 1-10 hours. Repeatable for maximum 10 hours credit.

Prerequisite: Permission of department.

Selected students are permitted to secure specialized training appropriate to their needs. This may involve intensive investigation and/or collection of data that results in a report.

546. Student Teaching in Home Economics Education. 1-15 hours. Repeatable for maximum 15 hours credit.

Technological Studies (ETS)

201. Internship in Technological Studies. 1-15 hours. Repeatable for maximum 15 hours credit. Planned school experience during which students observe and assist teachers in a technological studies program.

301. Introduction to Technological Studies. 5 hours.

Not open to students with credit in EIA 100. Development of technology and its effects on people, environment, and society, including historical and philosophic foundations; adaptation to change; and the future of technological growth.

302. Technological Impacts and Futuring. 5 hours.

Impacts of technology on society and culture as well as futures related to technology, including the investigation of positive and negative aspects of various types of technology.

310. Technical Field Theory. 5-20 hours. Repeatable for maximum 20 hours credit.

Not open to students with credit in EVO 526.

Corequisite: ETS 311.

Achievement in technical theory associated with occupational fields evaluated through National Occupational Competency Testing Institute or official scores submitted from health care credentialing agency. Technological studies students are administered written examination to determine competence. Credit recommended by comparing scores with national norms.

311. Technical Field Skills. 5-20 hours. Repeatable for maximum 20 hours credit.

Not open to students with credit in EVO 528.

Corequisite: ETS 310.

Performance achievement in technical field evaluated through National Occupational Testing Institute or official scores submitted from health care credentialing agency. Technological studies students are administered comprehensive performance examination on tasks common to specific occupational field. Credit recommended by comparing scores with national norms.

332. Creative Activities for Teachers. 5 hours. One lecture and four 2-hour lab periods.

Not open to students with credit in EIA 332.

Demonstration and hands-on learning including problem solving, designing, constructing, and testing of prototypes, and activities that increase aesthetic, psychomotor and cognitive development.

335. Curriculum Planning in Technological Studies. 5 hours.

Not open to students with credit in EIA 335 or ETI 335.

Corequisite: ETS 336.

Curriculum patterns in technological studies programs.

336. Methods of Teaching Technological Studies. 5 hours.

Not open to students with credit in EIA 336 or ETI 336.

Corequisite: ETS 335.

Specific teaching methods for technological studies.

400. Special Problems in Technological Studies. 1-10 hours. Repeatable for maximum 10 hours credit.

Special problems related to updating occupational skills, developing curriculum materials and/or developing additional teaching competencies in the technical field or specialty.

402. Principles of Technology. 5 hours.

Relationship of technology to applied physics concepts and laws.

435. Introduction to Teaching Technological Studies. 5 hours.

Not open to students with credit in ETI 401 or EHO 503.

Prerequisite: Appropriate Occupational Experience.

Standards, concepts, practices, and procedures in the development of curricula for areas within technological studies.

436. Instructional Strategies and Management Techniques in Technological Studies. 5 hours.

Not open to students with credit in ETI 402 or EHO 501.

Technological Studies

Prerequisite: Appropriate Occupational Experience.

Principles and practices of teaching manipulative skills and related technology.

501. Communication Systems. 5 hours.

Communication technology in business and industry. Use of microcomputer applications for computer graphics, desktop publishing, electronic presentation, and telecommunications including layout and design principles and procedures, graphic production systems, photographic processes, societal impacts, and innovative technologies.

502. Production Systems. 5 hours.

Manufacturing through the design, planning, and development of a manufactured product employing activities that center around materials processing.

503. Energy Systems. 5 hours.

Not open to students with credit in EIA 503.

Present and future applications of the technical, economic, and environmental aspects of energy systems and evaluation of the advantages and disadvantages.

504. Research and Experimentation in Technological Studies. 5 hours.

Pre-designed and original research and experimentation in a problem-solving format. Use of scientific and technological methods to solve problems. Suitable research and experimentation activities will be developed for technology education programs in secondary schools.

505. Problems of Teaching Technological Studies. 5 hours.

Not open to students with credit in EHO 505.

Instructional procedures and evaluation in teaching technical subjects. Current issues in technological education are stressed.

512. Needs Analysis in Occupational Studies. 5 hours.

Not open to students with credit in ETI 500 or EHO 500.

Techniques in analyzing occupations, industry, human resources, communities, and jobs within the areas of technological studies education to determine instructional and training content.

514. Laboratory Management and Safety. 5 hours.

Not open to students with credit in ETI 504.

Planning and managing laboratories including the development of a safety program and selection of equipment, tools, and supplies.

519. Coordinating Cooperative and Work-based Programs. 5 hours.

Not open to students with credit in ETI 509.

Organization and coordination of cooperative and work-based education programs. Emphasis is on preparing individuals for the roles and duties of work-based program coordinators.

546. Student Teaching in Technological Studies. 1-15 hours. Repeatable for maximum 15 hours credit.

Prerequisite: Admission to Teacher Education.

Full-time supervised student teaching experience in an existing technological studies program.

The School of Environmental Design

Caldwell Hall, 542-1816

Administrative Officer

Kerry J. Dawson, B.L.A, M.L.A., *Dean*

General Information

PURPOSE

The School of Environmental Design is a center for providing education for those students who wish to play a role in the planning, design, and management of the outdoor environment. The undergraduate program provides professional instruction in landscape architecture.

The discipline of landscape architecture is both an art and a science, and includes the creation and management of environments which meet human needs and are ecologically sensitive. Whether practicing in urban settings or natural environments, the landscape architect's tools blend horticultural, engineering, and artistic skills with an understanding of natural processes and a sense of stewardship.

Special Programs

INTERNSHIP

Under the Internship Program, qualified students are given the opportunity to gain experience by working in a professional office under the supervision of a registered landscape architect or related practitioner (architects, engineers, planners).

The internship requirements are as follows:

- (1) Internships must be approved in advance by the internship coordinator.
- (2) To be eligible to serve in internship for credit, students must have junior standing or special permission.
- (3) Students are required to take a minimum of 10 credit hours of internship before graduation.
- (4) Students who participate in internships must pre-register and pay tuition for LAR

410, 411, or 412 during the quarter in which the internship is being taken.

- (5) Students must submit written reports on their internships.
- (6) Evaluations are made by the employers at the end of the internships.
- (7) Credit for the course will be given after the written reports and employers' evaluations on work activities have been presented.

A grade of S (satisfactory) or U (unsatisfactory) will be given for each five hours of credit.

FIELD TRIPS

Supervised field trips are required of all students in connection with their classes. Students travel at their own expense to designated places of landscape interest in Georgia and adjoining states, accompanied by a member of the teaching staff.

STUDIES ABROAD

Selected students are permitted to enroll in a studies abroad program and may receive credit towards their degree. In conjunction with the School of Art, the School provides a studio program in Italy offering up to ten credit hours of instruction in landscape architecture and five credit hours of instruction in art history.

There are also a limited number of spaces in an exchange program in Australia. See your advisor for details.

Degrees Offered

The studies offered in landscape architecture at the University of Georgia are built around a curriculum designed to prepare students for professional practice or graduate education. The program leads to the Bachelor of Landscape Architecture degree. This five-year professional program is ac-

credited by the National Commission on Accrediting and the American Society of Landscape Architects. A Master of Landscape Architecture degree and a Master of Historic Preservation degree are offered through the Graduate School of the University. Only a limited number of positions are available in the School and early application is advised. The best qualified students are selected from the pool of applicants.

**LANDSCAPE ARCHITECTURE
CORE CURRICULUM**

This program is intended to prepare students for the professional program in landscape architecture. For general information on the core curriculum, see the General Information section of this bulletin, under the listing *The University System of Georgia Core Curriculum*.

	HOURS
AREA I HUMANITIES/FINE ARTS	20
ENG 101, 102	10
Choose from the following: ENG 231G, 232G; CML 221, 222; SPC 108; PHY 100, 102; Foreign Language (at the 100-200 level)	10
AREA II MATHEMATICS AND NATURAL SCIENCES	20
MAT 102, 109 or 116	10
Choose from the following: BOT 121-121L, 122-122L; BIO 103-103L, 104-104L	10
AREA III SOCIAL SCIENCES	20
POL 101	5
HIS 111, 251, 252	5
Choose from the following: ANT 102; ECN 106, 107; GGY 101; PHY 101; PSY 101; SOC 105	10
AREA IV COURSES RELATED TO MAJOR	30
Introductory Studio Art	5
ET 210	5
Choose from the following: BIO 103-103L, 104-104L; BOT 121-121L, 122-122L; GGY 104, 120-120L, 121-121L; HOR 200; EGR 109	20
Professional Program	
<i>First Professional Year</i>	
LAR 300 Basic Design Studio I	
LAR 305 Basic Design Studio II	
LAR 320 Architectural Design Studio	
LAR 343 Graphics I	

- LAR 344 Graphics II
- LAR 357 Landscape Construction
- LAR 372 History of Landscape Design
- LAR 373 History and Theory of Architecture
- ENV Computer Graphics Elective

Second Professional Year

- LAR 303 Plant Materials
- LAR 304 Planting Design I
- LAR 315 Introductory Landscape Design Studio
- LAR 316 Intermediate Landscape Design Studio
- LAR 322 Intermediate Architectural Design Studio
- LAR 323 Landscape Ecology
- LAR 350 Landscape Engineering
- LAR 351 Plant Materials
- LAR 358 Advanced Landscape Engineering

Third Professional Year

- LAR 317 Intermediate Landscape Design Studio
- LAR 318 Advanced Landscape Design Studio
- LAR 319 Advanced Landscape Design Studio
- LAR 340 Professional Practice in Landscape Architecture
- LAR 354 Planting Design
- LAR 355A and 355B Senior Project
- LAR 453 City Planning 125

Professional Experience

- LAR 410, 411, 412 Landscape Architecture Internship I, II, and III (10 hours required) 10
- Total Credits for Bachelor of Landscape Architecture 225

LATE WORK

The grade on studio projects and papers turned in after the due date will be penalized in accordance with School policy. A copy of this policy is available in the dean's office.

Students with good reason may request an extension in writing 24 hours before the scheduled due date. Official forms requesting an extension are available in the dean's office. If the request is approved, the student is required to come to an agreement with the instructor as to when the work will be completed. Projects and papers not completed by the agreed date will receive a grade of F.

COURSES OF INSTRUCTION

Courses in the School of Environmental Design are designated as Landscape Architecture (LAR), except for Environmental Design (ENV) 346, 405, 416, 427, 430, and 476.

Environmental Design (ENV)

Contact Person: Professor Scott S. Weinberg, 542-4715

346. Introduction to Computer Graphics in Art and Design. 5 hours. Two 4-hour lecture/lab periods.

Prerequisite: LAR 343 or ART 386B or permission of department.

The design, development and use of computer graphics applications in environmental design and the graphic arts.

405. Computer Graphics II. 5 hours. Three 3-hour lab periods.

Prerequisite: ENV 346 or permission of school. The generation and evaluation of alternative site development schemes utilizing analytical models and interactive computer techniques.

416. Advanced Computer Technology Applications in Landscape Planning. 5 hours. Three 3-hour lecture/lab periods.

Prerequisite: LAR 315 and [ENV 346 or GGY 418-418L] or permission of school.

The applications of Geographic Information Systems (GIS) to the survey and analysis of natural processes and to the philosophic-ecological problem-solving approach to landscape planning which seeks to harmonize human activities with nature.

427. Computer Imagery for Environmental Design. 5 hours. Three 3-hour lecture/lab periods.

Prerequisite: LAR 305 and 315 and ENV 346.

The art of computer-aided visual imagery for environmental design. Students will be involved with creating new images for existing and proposed project sites. This state of the art technology will be the base for presentation that involves students with "real world" clients.

430. Directed Study in Computer Graphics Applications. 5 hours. Repeatable for maximum 10 hours credit.

Prerequisite: ENV 405 or 416 or 427. Independent projects allowing supervised research into computer-aided design, GIS, or com-

puter-aided imagery as applied to landscape design and planning.

476. Restoration and Preservation of Historic Buildings and Sites. 5 hours.

Survey of European and American historic restoration and preservation theory, its evolution and practice, and its relationship to the concept of environmental quality.

Landscape Architecture (LAR)

Contact Person: Professor Scott S. Weinberg, 542-4715

300. Basic Design Studio I. 5 hours. Three 3-hour lecture/lab periods.

Basic principles of design theory and philosophy. Application through the use of two- and three-dimensional problems involving form, light, color, and texture.

303. Plant Materials. 5 hours.

Prerequisite: BOT 121-121L and HOR 362.

A study of plant materials with emphasis on plant keying, identification and use. Evergreen trees, shrubs and vines.

304. Planting Design I. 5 hours. Three 3-hour lab periods.

Prerequisite: LAR 303, 343, 344, 351.

Analysis of plant elements and form. Emphasis on plant function in the landscape composition. Basic problems in planting design of small areas with emphasis on orientation, arrangement and human needs.

305. Basic Design Studio II. 5 hours. Three 3-hour lab periods.

Prerequisite: LAR 300 and 343.

The design concept: research, analysis, synthesis. A linking together of basic design philosophy as outlined in LAR 300, the design concept and practical design situations.

315. Introductory Landscape Design Studio. 5 hours. Three 3-hour lab periods.

Prerequisite: LAR 305, 350 and 357.

Small scale projects involving elementary problems of design. Emphasis on circulation patterns, material characteristics and the use of small elements of design in the landscape.

316. Intermediate Landscape Design Studio. 5 hours. Three 3-hour lab periods.

Prerequisite: LAR 315.

A study of techniques for large-scale resource analysis and land planning methods and techniques specifically developed for the consideration of ecological data and problem solving. The philosophic-ecological approach to environmen-

Landscape Architecture

tal design which aims to harmonize human activities with the natural environment.

317. Intermediate Landscape Design Studio. 5 hours. Three 3-hour lab periods.
Prerequisite: LAR 316.

Emphasis on park and recreational design for various population requirements.

318. Advanced Landscape Design Studio. 5 hours. Three 3-hour lab periods.
Prerequisite: LAR 316.

A studio course which focuses on the complex design problems of urban areas: Townscape, campus planning, and downtown revitalization.

319. Advanced Landscape Design Studio. 5 hours. Two 4-hour lab periods.
Prerequisite: LAR 317.

Continuation of LAR 318 with emphasis on the preparation of detailed design for projects.

320. Architectural Design Studio. 5 hours. Two 4-hour lab periods.
Prerequisite: LAR 305.

Exploration of material and structural logic as the basis for architectural design. Consideration of climatic and environmental aspects of design.

322. Intermediate Architectural Design Studio. 5 hours. Two 4-hour lab periods.
Prerequisite: LAR 320.

Design involving larger structures, more complex circulation requirements, modular coordination and the philosophy of architecture.

323. Landscape Ecology. 4 hours. Four lecture/lab periods.
Prerequisite: Permission of school.

Exploration of the ecological relationship of man and his environment in an effort to seek a scientific basis for planning action.

340. Professional Practice in Landscape Architecture. 4 hours. Four lecture periods.
Professional practice and ethics; contracts, reports, and specifications.

343. Graphics I. 5 hours. Two 4-hour lab periods.
Principles of orthographic projection, isometric drawing, one- and two-point perspective. Emphasis on lettering, composition and graphic presentation.

344. Graphics II. 5 hours. Two 4-hour lab periods.
Prerequisite: LAR 343.
Use of perspective, drawing and various rendering techniques in presentation plans.

350. Landscape Engineering. 5 hours. Three 3-hour lab periods.
Prerequisite: LAR 357 and ET 210 or permission of school.

Review of contour principles, grading, earth volume calculations, drainage, coordinates and lay-

out techniques. Introduction to the automobile as it relates to site planning and low-speed road design.

351. Plant Materials. 5 hours.
Prerequisite: BOT 121-121L and HOR 362.

A study of plant materials with emphasis on identifying characteristics, natural habitat and cultural requirements. Primarily trees, shrubs and vines.

354. Planting Design II. 5 hours. Two 4-hour lab periods.
Prerequisite: LAR 304.

Use of plant material in relation to other landscape elements. Specific problems calling for the knowledge of plant characteristics and requirements. Preparation of planting plans and specifications.

355A. Senior Project Proposal. 1 hour.
Not open to students with credit in LAR 355.
Prerequisite: Second quarter senior standing or permission of school.

The preparation of a proposal for a senior project.

355B. Senior Project. 4 hours. One lecture and four 2-hour lab periods.
Not open to students with credit in LAR 355.
Prerequisite: LAR 355A.

A comprehensive design or research project in which the student is able to demonstrate the proficiency acquired in the professional program of study.

357. Landscape Construction. 5 hours. Three 3-hour lecture/lab periods.
Prerequisite: LAR 344.

An introduction to wood construction, sprinkler irrigation, retaining wall calculations, and construction drawings. Investigation of construction materials in the landscape.

358. Advanced Landscape Engineering. 5 hours. Three 3-hour lab periods.
Prerequisite: LAR 350.

The application of site engineering principles to specific design projects.

372. History of Landscape Design. 4 hours.
Development of the art of landscape design from early cultures to the present with special stress upon the transition of styles and the development of the naturalistic and contemporary periods.

373. History and Theory of Architecture. 4 hours.
Prerequisite: LAR 372 or permission of school.

A survey of the principal periods of architectural history with particular emphasis on the rationale of each development. Open to all majors of all colleges and departments.

375. Sketching for Pleasure. 5 hours. Three hours lecture and three 1-hour lab periods per week.

Theory and practice of freehand pencil and ink sketching. Emphasis on the development of the student's personal style and technique.

403. (BOT) Plant Communities of the Southeast. 5 hours.

Prerequisite: LAR 323 or ECL(BIO) 350.

Examination of the plant communities of the Southeast United States, with emphasis on botanical and aesthetic characteristics, factors affecting community composition, and community dynamics.

410, 411, 412. LAR Internship I, II and III. 5 hours each.

Prerequisite: Junior standing or permission of school.

Provides credit for professional office experience under the supervision of registered landscape architects or related practitioners (architects, engineers, planners). A minimum of two months full-time supervised employment per 5 credit hours.

418A. Directed Project I. 2-5 hours. Repeatable for maximum 10 hours credit.

Prerequisite: Fifth-year standing and permission of school.

Independent projects allowing supervised research into specialized problem areas of landscape architecture. May be substituted for other fifth-year course work.

418B. Directed Project II. 2-5 hours. Repeatable for maximum 10 hours credit.

Prerequisite: Fifth-year standing and permission of school.

Independent projects allowing supervised research into specialized problem areas of landscape architecture. May be substituted for other fifth-year course work.

425. Field Study in Contemporary Landscape Architecture. 5 hours.

Prerequisite: LAR 305.

Travel-case study of nationally recognized firms and individuals and notable works in architecture, landscape architecture, and urban design.

453. City Planning. 4 hours.

Prerequisite: LAR 372 or permission of school.

Background course in city planning covering the history and bibliography of the subject and introducing the students to modern trends in planning. Designed as a foundation for further study of professional planning.

496H, 497H, 498H. Directed Projects in Landscape Architecture. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in

individual study, reading or projects under the direction of a project director.

499H. Honors Thesis in Landscape Architecture. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field. This course will substitute for LAR 355.

501. Pre-MLA Graphics. 5 hours.

Prerequisite: Permission of department.

The use of graphics to visualize, evaluate, and communicate design ideas in landscape architecture.

502. Pre-MLA Design Principles. 5 hours.

Prerequisite: LAR 501 or permission of department.

An introduction to principles of design and their application in landscape architecture.

503. Pre-MLA Landscape Construction I. 5 hours.

Prerequisite: Permission of department.

An introduction to the properties of the principal landscape construction materials, their uses in landscape design and representation in construction drawings.

504. Pre-MLA Architectural Design. 5 hours.

Prerequisite: LAR 502 or permission of department.

Architecture as an aspect of environmental design: and examination of the major factors that influence architecture—history, aesthetics, activity, technology, and environment.

505. Pre-MLA Landscape Construction II. 5 hours.

Prerequisite: LAR 503 or permission of department.

Design principles and construction techniques for modifying landforms to accommodate buildings and other structures, and drainage and circulation systems.

506. Pre-MLA Planting Design. 5 hours.

Prerequisite: Permission of department.

The use of plant material to meet aesthetic, ecological and functional requirements in landscape design.

507. Pre-MLA Site Engineering. 5 hours.

Prerequisite: LAR 504 and 505 or permission of department.

Corequisite: LAR 508.

Site engineering for residential areas including low density suburban subdivisions and medium to high density mixed-use urban developments.

Landscape Architecture

508. Pre-MLA Site Design. 5 hours.

Prerequisite: LAR 504 and 505 or permission of department.

Corequisite: LAR 507.

The planning and design of residential areas including low density suburban subdivisions and high density mixed-use urban developments.

515. (RE) Land Development Studio. 5 hours.

See RE 515.

The College of Family and Consumer Sciences

Dawson Hall, 542-4860

Administrative Officer

Sharon Y. Nickols, B.S., M.A., Ph.D., *Dean*

General Information

PURPOSE AND ORGANIZATION

The College of Family and Consumer Sciences offers educational programs that lead to a number of professional careers. The curricula provide well-rounded programs of general, scientific, and technical education.

Upon completing core curriculum requirements, students take specialized professional courses specific to their majors and professional goals. Applied learning experiences and internships are emphasized in all programs of study in order to prepare students for their future work settings. Leadership and communication skills are also emphasized through various college programs and activities as are experiences that promote knowledge of and sensitivity to issues of multicultural diversity.

CAREER OPPORTUNITIES

Many diverse career opportunities are open to the graduate of the College of Family and Consumer Sciences. A student may prepare for a career in elementary, middle or high schools, vocational technical schools, pre-school programs, and teaching or administration in day care centers; in youth or adult group work; in commercial and financial companies and consultant firms; in merchandising; in product development laboratories, public utilities, and trade and industrial associations; in public relations, advertising, newspapers, magazines and trade journals, radio and television; or in dietetics or nutrition and health promotion agencies.

FACILITIES

Dawson Hall and Speirs Hall, located on South Campus, house the modern and fully equipped teaching laboratories and classrooms for equipment, foods, nutrition, textiles, as well as research laboratories, computer laboratories, and an auditorium.

The Margaret E. McPhaul Child and Family Development Center houses laboratories for instructional, clinical, and research activities which provide opportunities for observations of and work with normal infants, children under six, parents, and families. In addition, Project CEEI (Continuum of Environments for Early Intervention) and Head Start, both of which operate as integral parts of the McPhaul Center, provide instructional, research, observational, and participation opportunities with young developmentally challenged children and their families.

ACCREDITATION

The College of Family and Consumer Sciences is accredited by the American Association of Family and Consumer Sciences.

Special Programs

HONORS PROGRAM

Qualified students are encouraged to participate in both junior and senior division honors programs. Family and Consumer Sciences honors courses are listed under the respective departments. Graduation with Honors is available in all departments. Interested students should consult the Honors Program Student Handbook.

Degree Offered

The College of Family and Consumer Sciences offers the degree of Bachelor of Science in Family and Consumer Sciences.

GRADUATE STUDY

The College also offers both the Master of Science (M.S.) degree and Doctor of Philosophy (Ph.D.) degree in all departments—Child and Family Development; Foods and Nutrition; Housing and Consumer Economics; and Textiles, Merchandising and Interiors.

For further information, refer to the *Graduate School Bulletin*.

Bachelor of Science in Family and Consumer Sciences Degree Requirements

A student should become acquainted with the general degree requirements applicable to all students of the University as set down in the Academic Information section of this Bulletin.

CORE CURRICULUM

For general information on the core curriculum, see The University System of Georgia Core Curriculum in the Academic Information section of this Bulletin.

	HOURS
AREA I HUMANITIES/FINE ARTS	20
ENG 101, 102, 105H	10
Choose from the following: ENG 231G, 232G, 233G, 234G, 235H, 236H, 237H; CLC 120, 121, 150; CML 221, 222, 225H, 226H	5
Choose from the following (courses must be 100-200 level): Foreign language; literature; ART 200, 211H, 287, 288, 289; DRA 200; MUS 202; REL 115, 116, 225H; SPC 108	5
AREA II MATHEMATICS AND NATURAL SCIENCES	20
Choose from the following: MAT 102, 105, 106, 109, 116, 253, 263H	5
Choose from the following: AST 291; ENT 201; GGY 104, 200-200L; PCS 101; PHY 110; STA 200, 221	5
Choose 10 hours taken in one Laboratory Science sequence: AST 107-107L, 108-108L; BIO 103-103L, 104-104L, 107-107L, 108-108L, 107H-107L, 108H-108L; BOT 121-121L, 122-122L,	

CB 220-220L, 221-221L; CHM 111, 111L, 112, 112L, 121, 121L, 122, 122L, 123, 123L; GGY 120-120L, 121-121L, 122-122L; GLY 115-115L, 116-116L; PCS 127-127L, 128-128L

10

AREA III SOCIAL SCIENCES

20

As appropriate to intended major, choose from the following: AAE 258; ANT 102, 212H; ECN 106, 107, 116H, 117H; PSY 101, 103H; SOC 105, 104H

5

Hours not specified for a designated major should be chosen from the following: ANT 102, 212H; ECN 106, 107, 116H, 117H; GGY 101, 215H; PHY 101; PSY 101, 103H, 251, 252, 253, 254, 255, 256, 257, 258, 259; SOC 105, 160, 104H

5

HIS 251 or 252*, 253H, 254H

5

POL 101 or 105H*

5

AREA IV COURSES RELATED TO MAJOR

30

**Home Economics courses from: CFD 210, FDN 210, HCE 210, TMI 200, 210, 222

5-20

As appropriate to intended major, choose from the following: ACC 110, 111, 116; ANT 102, 212H; ART 200, 211H, 287, 288, 289; AST 107-107L, 108-108L, 291; BIO 103-103L, 104-104L, 107-107L, 108-108L, 107H-107L, 108H-108L; BOT 121-121L, 122-122L; CB 220-220L, 221-221L; CHM 111, 111L, 112, 112L, 121, 121L, 122, 122L, 123, 123L, 240, 240L, 241, 241L, 261, 261L, 280, 280L; CLC 120, 121, 150; CML 221, 222, 225H, 226H; CS 201-201L; EFN 203; DRA 200; ECN 106, 107, 116H, 117H; ENG 231G, 232G, 233G, 235H, 236H, 237H; ENT 201; Foreign language at the 100-200 level; EPY 204; GGY 104, 120-120L, 121-121L, 122-122L; GLY 115-115L, 116-116L; HIS 251, 252, 253H, 254H; LS 270;

*HIS 251 or 252 and POL 101 must be taken unless history and constitution requirements are satisfied by examination.

**In institutions where Home Economics courses are not available, courses from the following (approved for Area IV) may be taken as appropriate to a particular major: Biology, Chemistry, Physics, Mathematics, Economics, Psychology, Sociology.

JRL 101; MAN 201, 209-209L; MAT 102, 103, 105, 109, 115H, 116, 205, 206, 207, 253, 254, 263H; MUS 202; PCS 101, 127-127L, 128-128L, 137-137L; PHY 110; POL 101, 105H; PSY 101, 103H, 251, 252, 253, 254, 255, 256, 257, 258, 259; REL 115, 116, 225H; SOC 104H, 105; SPC 108, 267; STA 200, 210H, 211H, 221 10-25

OTHER DEGREE REQUIREMENTS

CFD 210 is required of all students pursuing the Bachelor of Science Degree in Family and Consumer Sciences.

Any courses exempted with or without credit by advanced placement shall satisfy the specific degree requirement; courses exempted without credit may be replaced by free electives.

All academic regulations of the University in respect to residence and degree requirements must be satisfied.

Hours

A total of 182-218 quarter hours is required for the Bachelor of Science in Family and Consumer Sciences degree, depending upon major selected. This total includes two hours of Basic Physical Education to satisfy University requirements. This total excludes any credit hours for basic ROTC.

Majors

The major should be declared upon entering the College of Family and Consumer Sciences. The course of study should conform to one of the plans listed under the respective major. Minor changes in programs may be made upon recommendation of the major professor with approval of the department head and dean.

The twelve majors in the College of Family and Consumer Sciences are: Child and Family Development—Early Childhood Education: Prekindergarten through Grade 2, Child and Family Development, Consumer Foods, Dietetics, Nutrition Science, Consumer Economics, Housing, Consumer Journalism, Clothing and Textiles, Fashion Merchandising, Furnishings and Interiors, and Home Economics Education.

CHILD AND FAMILY DEVELOPMENT (CFD)

The Department of Child and Family Development provides programs leading to a variety of careers involving children and families. Students gain theoretical and applied knowledge of individuals and families over the life span. Both classroom and community settings are used to provide students with opportunities to develop appropriate knowledge and professional skills. Students in this department may choose from two programs of study: Child and Family Development—Early Childhood Education: Prekindergarten Through Grade 2 and Child and Family Development. Curricula include University System of Georgia core courses, core courses of the College of Family and Consumer Sciences, and courses required for a major.

Child and Family Development— Early Childhood Education: Prekindergarten Through Grade 2

Graduates with this major (a joint program with the College of Education) are qualified for certification to teach children in preschool through fifth (P-5 certification) grade settings in public and private schools. Entrance requirements: A minimum cumulative GPA of 2.75 before being admitted to the sequence of courses designated as Level I in the College of Education.

Freshman and Sophomore Years

See *General Core Curriculum* and/or consult department.

	HOURS
AREA I HUMANITIES/FINE ARTS	20
ENG 101, 102, 105H	10
Literature—choose one course from approved Area I courses	5
Humanities—choose one course from approved Area I courses	5
AREA II MATHEMATICS AND NATURAL SCIENCES	20
MAT 102	5
BIO 103-103L and 104-104L	10
Science—choose one course from approved Area II courses	5
AREA III SOCIAL SCIENCES	20
PSY 101; SOC 105	10
POL 101; HIS 251 or 252	10

AREA IV COURSES RELATED TO MAJOR 30

CFD 210; EPY 204; EFN 203; ANT 102; MAT 205, 206	
Basic Physical Education	2
<i>Junior and Senior Years</i>	
CFD 495, 496, 591	15
CFD(PSY) 395	5
ECE(CFD) 401, 403, 442, 546	28
EEN 300, 404	6
EIT 401	3
EMT 442	3
ERD 401	5
ESC 442	3
ESS 342	3
PES 442	5
Electives	10
CFD(ECE) 515	5
SPE(ECE) 510	5

Child and Family Development

This program is designed for students who want a broad background in the area of children and families. In addition to major courses, students enrolled in this program are required to take an approved second area or minor. All approved minors are acceptable. Students pursuing this program may enroll in an internship program providing they meet certain criteria. Those who wish to attend graduate school are encouraged to take courses in research methods, statistics, and computer science.

Freshman and Sophomore Years

See *General Core Curriculum* and/or consult department.

HOURS

AREA I HUMANITIES/FINE ARTS 20

ENG 101, 102, 105H	10
Literature—choose one courses from approved Area I courses	5
SPC 108	5

AREA II MATHEMATICS AND NATURAL SCIENCES 20

Math—choose one course from approved Area II courses	5
Laboratory science sequence—choose two courses from approved Area II courses	10
Math/Science—choose one course from approved Area II courses	5

AREA III SOCIAL SCIENCES 20

PSY 101; SOC 105	10
Choose two courses from approved Area III courses	10

AREA IV COURSES RELATED TO MAJOR 30

FDN 210; HCE 210; TMI 210	15
*ANT 102 and two courses from approved Area IV courses or choose three courses from approved Area IV courses	15
Basic Physical Education	2
<i>Junior and Senior Years</i>	
CFD 390, CFD(PSY) 395, 408, CFD 470, 495	25
Choose three CFD courses (300 level or above)	15
HCE 364	5
HCE 365 or 368 or 370	5
FDN 500	5
Secondary Area or Minor	25
Electives	10

Minor in Child and Family Development:
Contact the department for requirements.

FOODS AND NUTRITION (FDN)

There is a constant demand for dietitians, nutrition scientists, and food specialists to combat the problems associated with needs for food by people of all ages. This demand has been intensified recently by the growing awareness of the relation of food and nutrient needs to health and well-being. The food industries need to have persons trained to evaluate consumer acceptance of their products as well as persons knowledgeable in the nutritional properties of food. The health industry as well as government is increasingly aware of the role of nutrition in health maintenance. Thus, employment opportunities are diverse and offer a variety of career choices.

Consumer Foods

Consumer Foods prepares students for careers in food service, Cooperative Extension, commodity groups and industry-consumer affairs, test kitchens, and quality control. A student should confer with his/her advisor to tailor a sequence of electives and supporting coursework to meet his/her professional interests.

*Students may choose to take TMI 305 to fulfill Environmental Literacy requirement instead of ANT 102; therefore, TMI 305 will be counted as an elective.

Freshman and Sophomore Years

See *General Core Curriculum* and/or consult department.

	HOURS
AREA I HUMANITIES/FINE ARTS	20
ENG 101, 102, 105H	10
Literature—choose one course from approved Area I courses	5
Humanities—choose one course from approved Area I courses	5
AREA II MATHEMATICS AND NATURAL SCIENCES	20
Math—choose one course from approved Area II courses	5
BIO 103-103L and 104-104L	10
STA 200	5
AREA III SOCIAL SCIENCES	20
ECN 106 or 107	5
ANT 102	5
Choose two courses from approved Area III courses	10
AREA IV COURSES RELATED TO MAJOR	30
CFD 210; FDN 210	10
CHM 111, 111L and 112, 112L or 121, 121L, and 122, 122L	10
CHM 261, 261L or 240, 240L	5
EPY 204 or SPC ____	5
Basic Physical Education	2
<i>Junior and Senior Years</i>	
FDN 351, 360-360L, 427, 470, 475-475L, 557, 580	35
FDN 430 or 573	5
FS 367	5
JRL 310	5
MIB 250-250L	5
HCE 343 or FDN 570 and 574 or FS 409-409L	5-10
Supporting course options (consult dept.)	15
Electives	10-15

Dietetics

The field of dietetics offers many opportunities related to foods and nutrition in health care, management, education, business, and industry settings. The dietetics major meets educational requirements established by the American Dietetic Association. Upon completion of the undergraduate degree, students must complete a supervised practical experience, such as an accredited internship, to become eligible to take the dietetic registration examination.

The student who intends to transfer to the University of Georgia to major in dietetics must choose courses that will meet the requirements of the major as defined and approved by the American Dietetic Association. Core courses that meet these requirements are specified in this Bulletin. The student should note that CHM 121 and 122 (General Chemistry) are required. These courses are prerequisite for CHM 240 (Organic Chemistry) which, in turn, is required for BCH(BIO) 310 (Biochemistry).

Freshman and Sophomore Years

See *General Core Curriculum* and/or consult department.

	HOURS
AREA I HUMANITIES/FINE ARTS	20
ENG 101, 102, 105H	10
Literature—choose one course from approved Area I courses	5
SPC 108	5
AREA II MATHEMATICS AND NATURAL SCIENCES	20
Math—choose one course from approved Area II courses	5
BIO 103-103L and 104-104L or 107-107L and 108-108L	10
STA 200	5
AREA III SOCIAL SCIENCES	20
ECN 106 or 107; SOC 105 or PSY 101	10
Choose two courses from approved Area III courses	10
AREA IV COURSES RELATED TO MAJOR	30
CFD 210	5
ANT 102	5
EPY 204	5
CHM 121, 121L, 122, 122L	10
CHM 240, 240L	5
Basic Physical Education	2

Junior and Senior Years

BCH(BIO) 310	5
CHM 241, 241L; CLC 211	10
FDN 351, 360-360L, 430, 441, 442, 453, 470, 570, 573, 574	50
MIB 350-350L	5
CB 221-221L or VPH 310	5
Major course options (consult dept.)	10
Electives	5

Nutrition Science

This major is designed to provide basic training in nutrition and related sciences. Students interested in research, college teaching, or administrative positions in nutrition will be prepared for graduate study with this major. Selection of appropriate electives permits adaptation of this major to the student's primary interest area. This major is an excellent preparation for entry into the various fields of medicine.

Freshman and Sophomore Years

See *General Core Curriculum* and/or consult department.

	HOURS
AREA I HUMANITIES/FINE ARTS	20
ENG 101, 102, 105H	10
Literature—choose one course from approved Area I courses	5
Humanities—choose one course from approved Area I courses	5
AREA II MATHEMATICS AND NATURAL SCIENCES	20
CHM 121, 121L, 122, 122L	10
MAT 253	5
STA 200 or 221	5
AREA III SOCIAL SCIENCES	20
ANT 102	5
Choose three courses from approved Area III courses	15
AREA IV COURSES RELATED TO MAJOR	30
CFD 210	5
BIO 107-107L and 108-108L	10
CHM 240, 240L, 241, 241L, 123, 123L	15
Basic Physical Education	2
<i>Junior and Senior Years</i>	
FDN 351, 441, 442, 453, 496; CS 201-201L	25-35
Required supporting courses	25
Major course options (consult dept.)	20
VPH 310 or CB 221-221L or 370-370L or PHR 349 and 350	5-10
Electives	5-10

HOUSING AND CONSUMER ECONOMICS (HCE)

The Department of Housing and Consumer Economics offers majors in (1) Consumer Economics, (2) Housing, and (3) Consumer Journalism. Majors may be combined with

Home Economics Education to fulfill the requirements for teaching in both vocational and non-vocational home economics departments in Georgia High Schools. Graduate study is available in Consumer Economics and Housing.

Consumer Economics

This program provides preparation to deal with the management of resources from the household to the corporate level, with emphasis on the analysis of consumer issues and related policy questions. Students may obtain an emphasis in family financial management. Career opportunities exist in government, education, and businesses as well as organizations such as the Cooperative Extension Service. The program also provides preparation for graduate study, or it may be used as a pre-professional degree for areas such as law or business. The major allows the student to design a course of study best suited to his or her particular career goals and interests.

Freshman and Sophomore Years

See *General Core Curriculum* and/or consult department.

	HOURS
AREA I HUMANITIES/FINE ARTS	20
ENG 101, 102, 105H	10
Literature—choose one course from approved Area I courses	5
SPC 108	5
AREA II MATHEMATICS AND NATURAL SCIENCES	20
Math—choose one course from approved Area II courses	5
Laboratory science sequence—choose two courses from approved Area II courses	10
STA 200	5
AREA III SOCIAL SCIENCES	20
ECN 106 or AAE 258, ECN 107	10
Choose two courses from approved Area III courses	10
AREA IV COURSES RELATED TO MAJOR	30
CFD 210; FDN 210; HCE 210	15
Choose three courses from the following: TMI 210; ANT 102; PSY 101; SOC 105; ACC 110, 111; LS 270; MAT 253, 254	15
Basic Physical Education	2

Junior and Senior Years

HCE 364, 365, 368, 370, 386, 465, 570	35
Major course options (consult dept.)	25
Related course options (consult dept.)	20
Electives	10

Minor in Consumer Economics: Contact the department for requirements.

Housing

The Housing major focuses on the socio-economic aspects of housing. Special emphasis is given to housing needs and the manner in which the family, the private sector, and government policy respond to those needs. The program features in-depth study of housing finance and the range of housing alternatives. Employment possibilities exist with the growing number of local and neighborhood housing agencies, as well as with agencies at the state and federal levels. Other professional opportunities exist with financial institutions, the Cooperative Extension Service, housing providers (builders' groups or housing manufacturers), public utilities, and property management firms. The program may also be used as preparation for graduate study or as a pre-professional degree. Certification as housing counselor and study in housing for the elderly are available also.

Freshman and Sophomore Years

See *General Core Curriculum* and/or consult department.

HOURS

AREA I HUMANITIES/FINE ARTS 20

ENG 101, 102, 105H	10
Literature—choose one course from approved Area I courses	5
SPC 108	5

AREA II MATHEMATICS AND NATURAL SCIENCES 20

Math—choose one course from approved Area II courses	5
Laboratory science sequence—choose two courses from approved Area II courses	10
STA 200	5

AREA III SOCIAL SCIENCES 20

ECN 106 or AAE 258, ECN 107	10
Choose two courses from approved Area III courses	10

AREA IV COURSES RELATED TO MAJOR 30

CFD 210; FDN 210; HCE 210	15
Choose three courses from the following: TMI 210; ANT 102; PSY 101; SOC 105; ACC 110, 111; LS 270; MAT 253, 254	15

Basic Physical Education 2

Junior and Senior Years

HCE 343 or 364, 365, 368, 386, 480, 485, 571	35
RE 390	5
CS 101-101L	5
Major course options (consult dept.)	15
Supporting course options (consult dept.)	20
Electives	10

Minor in Housing: Contact the department for requirements.

Consumer Journalism

The Consumer Journalism major includes courses from the College of Family and Consumer Sciences and the College of Journalism and Mass Communication. It is designed to prepare graduates for work requiring knowledge from the Family and Consumer Sciences areas enhanced by communication skills.

Students enter a variety of occupations including public relations, magazine writing, newspaper writing, as well as radio and television. The emphasis within an occupation focuses on areas such as consumer economics, consumer foods, merchandising, interiors, housing, or one of the other areas offered in the College.

Freshman and Sophomore Years

See *General Core Curriculum* and/or consult department.

HOURS

AREA I HUMANITIES/FINE ARTS 20

ENG 101, 102, 105H	10
Literature—choose one course from approved Area I courses	5
Humanities—choose one course from approved Area I courses	5

AREA II MATHEMATICS AND NATURAL SCIENCES 20

Math—choose one course from approved Area II courses	5
Laboratory Science Sequence—choose two courses from approved Area II courses	10

Math/Science—choose one course from approved Area II courses	5
AREA III SOCIAL SCIENCES	20
ECN 106 or AAE 258	5
PSY 101 or SOC 105 or ANT 102	5
Choose two courses from approved Area III courses	10
AREA IV COURSES RELATED TO MAJOR	30
CFD 210; FDN 210; HCE 210; TMI 210	20
Choose one course from approved Area IV courses	10
Basic Physical Education	2
<i>Junior and Senior Years</i>	
Family and Consumer Sciences	25
Choose one area from: General, Child and Family Development, Consumer Economics, Foods and Nutrition, Fashion Merchandising, Housing, Furnishings and Interiors, Textiles	
Journalism 504	5
Choose one area from: Advertising, Broadcast News, Magazines, Newspapers, Public Relations, Publication Management, Telecommunication Arts	30
Internship or supporting Family and Consumer Sciences coursework (consult department)	15
Electives	15

TEXTILES, MERCHANDISING AND INTERIORS (TMI)

Clothing and Textiles

The major in clothing and textiles is designed to provide undergraduate students with knowledge and understanding of the various facets of the textile and apparel industries. Students may choose courses in management as well as courses which will provide technical and theoretical proficiencies and competencies needed to obtain a position in the textile industry. The program is flexible enough to permit the student to explore a variety of areas including international textiles, quality control, business, chemistry, and computer science.

Freshman and Sophomore Years

See *General Core Curriculum* and/or consult department.

	HOURS
AREA I HUMANITIES/FINE ARTS	20
ENG 101, 102, 105H	10
Literature—choose one course from approved Area I courses	5
SPC 108	5
AREA II MATHEMATICS AND NATURAL SCIENCES	20
CHM (consult dept.)	10
MAT 116	5
STA 200	5
AREA III SOCIAL SCIENCES	20
ECN 106 or 107	5
PSY 101 or SOC 105	5
Social Science (consult dept.)	10
AREA IV COURSES RELATED TO MAJOR	30
ACC 110	5
CFD 210	5
CS 201-201L	5
MAN 209-209L	5
MAT 253	5
TMI 210	5
Basic Physical Education	2
<i>Junior and Senior Years</i>	
TMI 200, 305, 320, 320L, 325, 445	21
Area of Emphasis in Textile and Apparel Management or Textile Science: Contact the department for requirements	20-25
Choose 65-70 hours from the following (consult department):	
ACC 111	5
CHM 123, 123L, 240, 240L, 241, 241L, 280, 280L	20
EHS 306, 409, 449	15
JRL 310	5
LS 270	5
MAN 352, 540, 552	15
MAT 254	5
PCS 137-137L	5
POL 321	5
TMI 315, 420	10
TMI 510A, 510B, or 510C	5
TMI 591 (15 hours)	15

Fashion Merchandising

The purpose of the fashion merchandising major is to provide the undergraduate student with a basic understanding of merchandising related to the fashion industry. The program emphasizes the skills and competencies needed for careers in retailing, management, and fashion promotion. The

curriculum is designed to develop a general background of knowledge essential for professional growth.

Freshman and Sophomore Years

See *General Core Curriculum* and/or consult department.

	HOURS
AREA I HUMANITIES/FINE ARTS	20
ENG 101, 102, 105H	10
Literature—choose one course from approved Area I courses	5
SPC 108	5
AREA II MATHEMATICS AND NATURAL SCIENCES	20
MAT 102	5
CHM 111, 111L and 112, 112L or 121, 121L and 122, 122L	10
STA 200	5
AREA III SOCIAL SCIENCES	20
ECN 106 or 107	5
PSY 101 or SOC 105	5
Choose two courses from approved Area III courses	10
AREA IV COURSES RELATED TO MAJOR	30
CFD 210; TMI 210	10
ACC 110, 111	10
ART 200, 287, or 288	5
MAN 209-209L	5
Basic Physical Education	2
<i>Junior and Senior Years</i>	
MKT 360, MKT(PSY) 561	10
TMI 315 or 430	5
TMI 200, 305, 320-320L, 322, 325, 334, 434, TMI(DRA) 464 or TMI 466, TMI 524, 534, 561	51
Major course options (consult dept.)	15
Electives	9

Minor in Fashion Merchandising: Contact the department for requirements.

Furnishings and Interiors

This major emphasizes the consumer aspects of residential design and furnishings. The courses required for furnishings and interiors emphasize active experience with tools and materials needed for professional development. The courses are integrated so that a balance between theoretical and practical experiences is achieved. From this integration, the student derives a knowledge of

basic principles underlying furnishings and interiors for residential uses. The major in interiors provides opportunities for students wishing to pursue careers in residential design, retailing of home furnishings, and related areas.

Freshman and Sophomore Years

See *General Core Curriculum* and/or consult department.

	HOURS
AREA I HUMANITIES/FINE ARTS	20
ENG 101, 102, 105H	10
Literature—choose one course from approved Area I courses	5
ART 200, 287, 288, or 289	5
AREA II MATHEMATICS AND NATURAL SCIENCES	20
Math—choose one course from approved Area II courses	5
CHM 111, 111L and 112, 112L	10
STA 200	5
AREA III SOCIAL SCIENCES	20
ECN 106 or 107	5
PSY 101 or SOC 105	5
Choose two courses from approved Area III courses	10
AREA IV COURSES RELATED TO MAJOR	30
CFD 210; TMI 210	15
SPC 108	5
ACC 110 or 116	5
LS 270 and HCE 210 or foreign language 102 and 103	10
Basic Physical Education	2
<i>Junior and Senior Years</i>	
CS 101-101L	5
TMI 200, 305, 320-320L, 325, 375, 376, 378, 475, 476, 477, 478, 571, 572	61
Major course options (consult dept.)	15
Electives	9

HOME ECONOMICS EDUCATION

The major in home economics education is offered jointly by the College of Family and Consumer Sciences and the College of Education. Students completing this program fulfill the requirements for a teacher's certificate in home economics.

Freshman and Sophomore Years

See *General Core Curriculum* and/or consult department.

Child and Family Development

	HOURS
AREA I HUMANITIES/FINE ARTS	20
ENG 101, 102, 105H	10
Literature—choose one course from approved Area I courses	5
SPC 108	5
AREA II MATHEMATICS AND NATURAL SCIENCES	20
Math—choose one course from approved Area II courses	5
CHM 111, 111L and 112, 112L	10
Math/Science—choose one course from approved Area II courses	5
AREA III SOCIAL SCIENCES	20
ECN 106, PSY 101	10
Choose two courses from approved Area III courses	10
AREA IV COURSES RELATED TO MAJOR	30
ANT 102; FDN 210; HCE 210; TMI 210	20
EFN 203; EPY 204	10
Basic Physical Education	2
<i>Junior and Senior Years</i>	
* CFD(PSY) 395 and CFD 495 or 497	10
EHE 335, 336, 345A, 345B, 546	27
EIT 401	3
EOS 410 or EHE 400, EOS 555	10
FDN 360-360L, 470, 500	15
HCE 343, 364, 368	15
TMI 222, 375	10

* This prefix required for certification purposes.

COURSES OF INSTRUCTION

Child and Family Development (CFD)

Contact Person: Dr. Sharon Price, 542-4831

210. Development Within the Family. 5 hours. Individual and family development during the life cycle is considered with special emphasis upon interpersonal relationships among family members.

301. Special Problems in Child and Family Development. 1-20 hours. Repeatable for maximum 20 hours credit.

Prerequisite: 20 hours of senior division CFD coursework.

A course designed for the senior major to permit independent study and research.

390. Prenatal and Infant Development. 5 hours. A study of all phases of individual development from conception to age two and the accompanying changes in families with infants and toddlers. Lab work is required.

393. Interpersonal Relations and Marriage. 5 hours.

Personal and social factors that influence dating, mate selection, engagement, marriage and alternative lifestyles with emphasis on marital interaction and satisfaction.

395. (PSY) Introduction to Child Development. 5 hours.

Prerequisite: PSY 101.

A survey of the physical, cognitive and personality development of children with emphasis upon the years two to ten.

401. (ECE) Teaching and Learning Processes in Early Childhood Education. 3 hours.

See ECE 401.

403. (ECE) Integrated Curriculum Practices in Early Childhood Education. 5 hours.

See ECE 403.

407. Marriage and Family Problems. 5 hours.

Prerequisite: SOC 105 or PSY 101.

Study of serious difficulties and stresses within marriage and families such as child/spouse abuse, neglect, alcohol and other drug dependencies, physical handicaps, unemployment, and national disasters and their relation to the family.

408. (PSY) Development of the Young Child. 5 hours.

Prerequisite: CFD (PSY) 395 or equivalent.

The physical, mental, emotional and social development of the preschool child and the origins of psychological processes in lab work; special reference to techniques of guidance.

412. Child Care, Work, and the Family. 5 hours.
Prerequisite: CFD(PSY) 395 and/or Junior standing.

A developmental-contextual analysis of child care, work, and family functioning, including examination of relation of current child care arrangements to work roles in families, historical and cross-cultural comparisons of child care and family work patterns, and the developmental impact of child care and work on family members. Policy implications discussed.

442. (ECE) Organization of Early Childhood Classrooms. 5 hours.
See ECE 442.

450. (HCE) Second Half of Life. 5 hours.
Prerequisite: Ten hours of sociology, psychology or child and family development.

A review of the second half of life: resource management, living patterns and housing, sexuality, roles, family relationships, community and organization involvement and career opportunities.

461. (SOC) The Family. 5 hours.
Family study utilizing data from the fields of anthropology, individual and social psychology, history, sociology, economics and psychiatry.

462. Women in the Family and Society. 5 hours.
Prerequisite: Upper division standing, 5 hours of Child and Family Development and Sociology or permission of department.

Women's roles in relation to marriage, family and society at various ages and times, their changing constraints and opportunities.

470. The Family and Adolescence. 5 hours.
Prerequisite: Ten hours from the following: CFD 210 or CFD(PSY) 395 or PSY 101. Upper Division Status.

A consideration of the unique features of the family while it is at the life cycle stage which includes an adolescent member. Special attention is given to the dual processes of adolescent development and family development.

491. Hospitalized Child and the Family. 5 hours.
Prerequisite: CFD 390 and CFD(PSY) 395 and one of the following: CFD 495 or CFD(SOC) 461 or CFD 407.

Study of normal and stress-related needs of hospitalized children and their families. Philosophy and development of the Child Life Program.

492. Family Skills Training. 5 hours.
Developments of concepts and behavioral skills to enhance interpersonal relationships in families

and to prevent, ameliorate or resolve interpersonal problems.

494. Research Methods in Child and Family Development. 5 hours.

Prerequisite: Ten quarter hours of coursework in Child and Family Development.

Introduction to research design in child and family development. Emphasis on the evaluation of research in the field and on common problems incurred in applied research which affect the interpretation of data.

495. Family Development. 5 hours.
Prerequisite: Courses in Child Development or Family Relations or SOC 105.

An examination of families as social groups that develop their own patterns, meanings and processes across stages of the family life cycle in both conventional and alternative family forms. Topics include family formation, dissolution, parenting, remarriage, reconstructed families, and child custody.

496. Parent and Child Guidance. 5 hours.
Prerequisite: CFD (PSY) 395 or equivalent.

Theories, strategies, techniques employed by parents, teachers and other significant adults to promote the healthy development of children and adults. Lab work is required.

496H, 497H, 498H. Directed Reading. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

497. Human Sexuality and the Family. 5 hours.
Prerequisite: Upper division standing.

A survey of various attitudes, values, substantive and theoretical materials on human sexuality, particularly the relation of these two and implications for interpersonal relations in marriage and the family.

499H. Honors Thesis. 5 hours.
This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

500. Observation and Assessment Techniques. 1-10 hours. Repeatable for maximum 10 hours credit.

Prerequisite: CFD (PSY) 395 or permission of department.

Directed experiences in observing, recording, and assessing behavior and interaction of children and families.

515. (ECE) Families, Schools, and Communities. 5 hours.

Prerequisite: ECE(CFD) 442, CFD 495, 496 and permission of department.

The relationship among families, schools, and communities with an emphasis on how these institutions influence early childhood classroom practices.

546. (ECE) Student Teaching in Early Childhood Education. 1-15 hours.
See ECE 546.

591. Creative Activities for Young Children. 5 hours.
Prerequisite: CFD (PSY) 395 and one additional related senior division course.

Creative activities for young children, including literature, art, mathematics, science, music, and nature study. Lab work required.

592. Group Programs for Young Children. 15 hours.
Prerequisite: CFD 390 and CFD (PSY) 395 and CFD 496.

Developmental and educational theories applied to the design, content, and implementation of group programs for young children. Lab work required.

594. Administration of Children's Programs. 5 hours.
Prerequisite: CFD (PSY) 395 and CFD 496 and CFD 592.

Theories and administration of child care programs including planning, scheduling, enrollment, certification, and evaluation. Lab work required.

598ABCDEF. Practicum in Child and Family Development. 1-20 hours each suffix with 20 hours a maximum in any combination.

Prerequisite: GPA of 2.5 and permission of department.

A. Group Programs for Children Under Six. Prerequisite: CFD(PSY) 395 and CFD 500 and 592 and permission of department.

B. Human Development Programs. Prerequisite: CFD(PSY) 395 and CFD 496 and permission of department.

C. Programs for Individuals with Disabilities and their Families. Prerequisite: CFD(PSY) 395 and SPE 300 and permission of department.

D. Administration. Prerequisite: CFD (PSY) 395 and CFD 592 and 594 and permission of department.

E. Hospital Child Life Program. Prerequisite: CFD (PSY) 395 and CFD 491 and 496 and permission of department.

F. General.
Supervised professional practice in settings which employ persons with undergraduate degrees in Child and Family Development. Placements can be in above A, B, C, D, or E.

Foods and Nutrition (FDN)

Contact Person: Dr. Roy Martin, 542-4875

210. Human Nutrition and Food. 5 hours.
Relationship of nutritional needs and food choices to the optimal health of the individual during his/her life cycle.

301. Special Problems in Foods and Nutrition. 1-20 hours. Repeatable for maximum 20 hours credit.

Prerequisite: 20 hours of senior division FDN coursework.
Designed for the senior major to permit independent study and research.

310. Hospitality Cost Controls and Systems. 5 hours.
Prerequisite: ACC 111.

Application of cost control and accounting principles to the hospitality industry, using both manual and computer information systems.

331. Introduction to Hotel Operations. 5 hours.
Overview of general hotel operations with focus on the study of the rooms department which is the major revenue center of a hotel.

351. Foundations of Nutrition. 5 hours.
Prerequisite: BIO 103-103L or FDN 210; and CHM 261 and 261L.

Basic principles of human nutrition with emphasis on biochemical function and role of nutrients on health status; sources of nutrients; and factors affecting nutrient requirements of individuals.

360-360L. Introductory Foods. 5 hours.
Not open to students with credit in FDN 350 or 306.

Basic principles of food preparation and evaluation of food products.

377. Guest Relations. 2 hours.
Interpersonal skills development related to the hospitality industry. Strong skill-building component in guest and interpersonal relationships.

427. Cultural Aspects of Foods and Nutrition. 5 hours.
Prerequisite: FDN 210 or 351 or 500.

A study of the foodways, food habits and food behavior of various population groups in this country and others and the influences of these factors on the nutritional status of group members.

430. Public Health Dietetics. 5 hours.
Prerequisite: FDN 351.

Nutrition in public health care and tools for successful management and delivery of nutrition services including knowledge of community assessment, planning, implementation and evaluation as related to nutritional care.

441. Advanced Nutrition I. 5 hours.

Prerequisite: FDN 351 and VPH 310 and BCH (BIO) 310.

Survey of the literature of human nutrition (including physiology, biochemistry and endocrinology) related to the major nutrients, with special emphasis on the relationship between diet and performance under varying conditions of age and health.

442. Advanced Nutrition II. 5 hours.

Prerequisite: FDN 441.

Survey of the literature of human nutrition (including physiology, biochemistry and endocrinology) related to the vitamins and inorganic nutrients, with special emphasis on the relationship between diet and performance under varying conditions of age and health.

452. Nutrition Support Dietetics. 2 hours.

Corequisite: FDN 453.

Specialized nutrition in the clinical setting including nutrition assessment, enteral nutrition, parenteral nutrition, clinical applications and documentation. Prepares dietetics students for internships.

453. Nutrition in Disease. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: FDN 441.

Modification needed in normal diet in treatment of various diseases. Special emphasis is given to the study of digestive diseases, metabolic disorders, diseases of the blood and to cardiovascular and renal disorders.

455. Maternal and Child Nutrition. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: BCH(BIO) 310 and CB 221-221L or VPH 310, and FDN 351.

Fundamental principles of nutrition during pregnancy, lactation, infancy and early childhood. Laboratory work in maternity clinics, infant laboratory, nursery schools and other appropriate community agencies.

470. Food and the Consumer. 5 hours.

Not open to students with credit in FDN 451 or 460.

Prerequisite: FDN 210 or 351 or 360-360L or 500.

Corequisite: CHM 112 and 112L.

Health, safety, and policy issues related to food consumption trends, nutrient composition of foods, food additives, food allergies and hypersensitivities, naturally occurring toxins, pathogens, pesticides, biotechnology-derived foods, irradiated foods, and food laws and regulations.

475. Experimental Study of Food. 5 hours. Four lectures and one 3-hour lab period.

Prerequisite: (FDN 360-360L) and (CHM 112, 112L or 122, 122L) and (FDN 210 or 351 or 500) and (statistics or permission of department).

Functional and nutritional properties of components in food products. Techniques to evaluate food products for consumer acceptability including individual and group laboratory experimentation; computer applications.

480. Geriatric Nutrition. 5 hours.

Prerequisite: [FDN 351 or 500] and [CB 221-221L or VPH 310].

Role of foods and nutrients in the health and well-being of the elderly; effects of aging on macro and micronutrient needs; influence of disease, medications, economics, and culture; nutritional assessment, support and services; health promotion and disease prevention; future directions for research.

496. Directed Research in Nutrition Science. 5-15 hours.

Prerequisite: FDN 441 or BCH(BIO) 310.

Independent research designed for the senior nutrition science major. Literature review, laboratory work, experiment design and interpretation of the results will be required.

496H, 497H, 498H. Directed Reading and/or Projects. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

500. Nutrition Related to the Human Life Cycle. 5 hours.

A survey of nutritional health needs related to specific stages of the human life cycle. Special emphasis will be given to the nutritional needs during pregnancy, infancy and early childhood, and the gerontological-nutritional needs. The subject matter of the course will be presented for non-majors in Foods and Nutrition.

520. Hospitality Sales and Service. 5 hours.

Prerequisite: MKT 360.

Development, use, and evaluation of effective sales and service techniques. Market research and strategy specific to the hospitality industry.

530. Facilities Planning and Development. 5 hours.

Prerequisite: FDN 570 or permission of department.

Concepts, strategies, and skills needed in planning, designing, and equipping facilities related to the hospitality industry.

555. Catering. 5 hours.

Prerequisite: FDN 360-360L.

Types of catering: establishing types of catering businesses, menu planning, food preparation, styles of service, cost accounting and resource management for the service of food to large and small groups of people. Actual catering of a meal is included.

557. Demonstration Techniques. 5 hours.
Prerequisite: FDN 360-360L.

Planning and organizing effective types of communications about food and nutrition to the consumer through various types of media. Use of techniques such as food demonstrations, construction of displays and writing of brochures will be performed by students.

560. Menu Management and Service. 5 hours.
Not open to students with credit in FDN 350.

The planning of meals as related to styles of service for individual, family, commercial, and institution use. Cultural, marketing, and social aspects of foods will be considered.

570. Quantity Food Production. 5 hours.
Prerequisite: FDN 360-360L.

Application of principles of food preparation in large quantities utilizing institutional equipment and procedures; including topics such as: yield studies, work improvement methods, and recipe standardization.

573. Management of Foodservice Organizations. 5 hours.
Prerequisite: FDN 570.

Management of foodservice organizations: concepts of management, staffing, and delivery systems as they pertain to the resources and organization of public and private institutions.

574. Purchasing for Foodservice Organizations. 5 hours.
Prerequisite: FDN 360-360L.

A study of the total purchasing process with emphasis on purchasing methods, storage and issuing procedures, inventory systems, forecasting of quantities and specification writing. Purchase of food, beverages, chemicals, disposables, table service and small equipment is included.

580. Hospitality Sanitation and Safety. 5 hours.
Prerequisite: FDN 570.

Principles of sanitation and safety for the restaurant and lodging industries. Studies of food spoilage and foodborne illness, maintenance of sanitary food, facilities and equipment, and sanitation and safety regulations and standards.

591. Foods and Nutrition Practicum. 5 hours.
Prerequisite: Basic courses in FDN department, upper division level, and permission of department.

Supervised work experience in dietetics and/or food service facility.

592. Seminar in Hotel and Restaurant Administration. 1 hour.

Speakers from the hotel and restaurant industry will discuss current trends in the industry.

593. Consumer Foods Internship. 5-15 hours.
Repeatable for maximum 15 hours credit.

Not open to students with credit in FDN 591.
Prerequisite: Permission of department.
Work in a public or private institution to obtain practical professional experience.

Housing and Consumer Economics (HCE)

Contact Person: Dr. Carol Meeks, 542-4857

210. Family Economic Environment. 5 hours.
Not open to students with credit in HMC 210.

An introduction to the family as a producing and consuming unit, including the decision-making processes involved and the special role of housing. Emphasis is on interrelationships among decisions and the links between economic and social issues.

301. Special Problems in Housing and Consumer Economics. 1-20 hours. Repeatable for maximum 20 hours credit.

Not open to students with credit in HMC 301.
Prerequisite: 20 hours of senior division HCE coursework.
Designed for the senior major to permit independent study and research.

343. Household Technology. 5 hours.
Not open to students with credit in HMC 343.

Prerequisite: FDN 210 and HCE 210 and TMI 210.
Household equipment and the technical systems found in the home; basic information about utilities, materials, home climate control, and home automation.

364. Principles of Family Finance. 5 hours.
Not open to students with credit in HMC 364.

Prerequisite: Sophomore standing or 45 hours completed.

Changes in economic requirements during the family life cycle; forces affecting the economic welfare of families in this country. Focused on consumer credit, savings and investment, insurance, home ownership and estate planning.

365. Family Well-Being and Economic Conditions. 5 hours.

Not open to students with credit in HMC 365.
Prerequisite: ECN 106 or permission of department.

Contemporary economic problems that affect the well-being of families in the United States. Examples are poverty and affluence, human capital, health fertility, marital status, labor force partici-

pation, race, and public policies as they affect families.

368. Family Resource Management. 5 hours.
Not open to students with credit in HMC 368.
Prerequisite: HCE 210 and CFD 210 and junior standing or permission of department.

Survey of basic concepts in individual and home management such as human value orientations, individual and group decision making and creation and utilization of resources. Special emphasis will be placed on application of concepts to unique managerial situations encountered in day to day living.

370. Survey of Consumer Issues. 5 hours.
Concepts underlying consumer economics. Emphasis on the marketplace, information, decision-making, rights and responsibilities of consumers, and role of government.

386. Introduction to Housing. 5 hours.
Not open to students with credit in HMC 386.
Prerequisite: HCE 210.

Present-day family housing needs from the standpoint of health, safety, environment, finance, ownership; types of dwellings; minimum standards.

450. (CFD) Second Half of Life. 5 hours.
See CFD 450.

464. Family Socio-Economic Characteristics. 5 hours.
Not open to students with credit in HMC 464.
Prerequisite: ECN 106 or 107 and SOC 105 or one senior division course in related field.

Family as an income producing and utilizing unit; application of theory and research to economics of the household; implications of family structural characteristics on the family as supplier and demander of inputs and outputs in relation to economic and demographic characteristics and consequences for families.

465. Family Consumer Systems. 5 hours.
Not open to students with credit in HMC 465.
Prerequisite: ECN 106 or AAE 258.

Social systems analysis of research on consumer activities of households, families and individuals; examination of empirical research and theory on the consumer at micro and macro levels; suggested new directions for consumer research and theory with family focus.

471. Study Tour in Housing and Consumer Economics. 5-15 hours. Maximum credit 15 hours.
Not open to students with credit in HMC 471.
Prerequisite: Senior standing, one senior-level housing course or permission of department.

A systematic study of topics relating to housing, home management or consumer economics, with site visits to relevant locations. Combines in-depth study with first-hand experience gained on site.

480. Federal Housing Developments. 5 hours.
Prerequisite: HCE 386 and five hours each of sociology and economics or permission of department.

Development of national housing programs and policies as related to family welfare. The focus is on federal policies, particularly financial programs, in the United States in the context of national priorities, social conditions and economic trends.

485. State and Local Housing Developments. 5 hours.
Prerequisite: HCE 386.

An examination of the impact of state and local action in the provision of housing including an historical introduction to the role of state and local government regulations, taxation and policies that influence the development and consumption of housing.

496H, 497H, 498H. Directed Reading and/or Projects. 5 hours each.
Not open to students with credit in HMC 496H, 497H, 498H.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.
Not open to students with credit in HMC 499H.
This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

500. Consumer Legislation. 5 hours.
Prerequisite: HCE 370.

The rights and responsibilities of consumers related to legislation concerning consumer information, product safety, choice of goods and channels of appeal for the consumer.

530. Readings in Housing and Consumer Economics. 5 hours. Repeatable for maximum 10 hours credit.

Prerequisite: 15 hours of HCE or permission of department.
Selected topics and problems in housing and consumer economics.

567. Analysis of Family Resource Management. 5 hours.
Not open to students with credit in HMC 567.
Prerequisite: HCE 368.

Emphasis is on the development of problem-solving skills and management of resources available for family use through the use of case studies, simulations and laboratory experiences.

568. Management for Families with Special Needs. 5 hours.
Prerequisite: HCE 368.

Life-styles and instrumental functioning of families challenged by limited resources. Unique managerial needs of families with special needs will be explored.

570. Consumer and the Market. 5 hours.

Prerequisite: HCE 370 and 465.

Problems of the household buyer; intelligent selection of goods on modern market; standards and labeling as safeguards in buying; family income and problems of distribution.

571. Housing Alternatives. 5 hours.

Prerequisite: HCE 480 or equivalent or permission of department.

Analysis of housing alternatives currently available to families. Public and private efforts to meet housing needs in the context of economic, social and demographic change.

576. Advanced Family Finance. 5 hours.

Prerequisite: HCE 364 or equivalent.

Personal and family financial planning. Family values in relation to family income, spending, saving and investing; advanced analysis of the effect of the economy on family financial planning; retirement plans and social security; insurance; home ownership and housing.

577. Family Financial Counseling. 5 hours.

Not open to students with credit in HMC 564.

Prerequisite: HCE 576 or permission of department.

Case study and practicum experiences related to financial counseling for families.

590. Internship Orientation. 1 hour.

Orientation to an internship experience.

591. Housing and Consumer Economics Internship. 5-15 hours. Repeatable for maximum 15 hours credit.

Prerequisite: HCE 590, upper division coursework in HCE, minimum G.P.A. of 2.5, and permission of department.

Supervised work experience in housing, household equipment, home management or consumer economics.

Textiles, Merchandising and Interiors (TMI)

Contact Person: Dr. Ian R. Hardin, 542-0357

200. Seminar in Textiles, Merchandising and Interiors. 1 hour.

Prerequisite: Permission of department.

An introductory seminar to familiarize students majoring in one of the areas of specialization in the department with the programs of study, course offerings, career opportunities and leaders in related businesses and industries. Open to all stu-

dents. Must be taken by TMI majors no later than one quarter after admission to TMI program.

210. Textiles for Consumers. 5 hours.

Introduction to textile study with emphasis on selection, use, performance and care of textile products in the consumer's environment.

222. Principles of Creative Clothing. 5 hours.

Prerequisite: TMI 210.

Application of art principles to clothing selection. Basic principles of clothing construction related to fabric, fit and design of the garment.

301. Special Problems in Textiles, Merchandising and Interiors. 1-20 hours. Repeatable for maximum 20 hours credit.

Prerequisite: 20 hours of senior division TMI coursework.

Designed for the senior major to permit independent study and research.

305. Environmental Issues in the Near Environment. 5 hours.

Overview of environmental issues impacting on the near environment: housing, family, food, textiles, and apparel. Legal and ethical aspects, worker safety, chemical exposures/hazards, waste minimization, recycling, pollution prevention, and protective clothing.

315. Color Science. 5 hours.

Basic color theory; analysis of the use of color, line, shape, form and texture in the environment, with applications to the areas of apparel, interiors, textiles and merchandising.

320. Textiles. 4 hours.

Prerequisite: TMI 210 and [(CHM 111 and 111L and 112 and 112L) or (CHM 121 and 121L and 122 and 112L)].

Corequisite: TMI 320L.

Study of fibers, yarns, fabrics and finishes.

320L. Textiles Laboratory. 1 hour.

Prerequisite: TMI 210 and [(CHM 111 and 111L and 112 and 112L) or (CHM 121 and 121L and 122 and 112L)].

Corequisite: TMI 320.

Introduction to basic textile testing for end-use performance.

322. Apparel Quality Analysis. 5 hours.

Prerequisite: TMI 210.

Structural approach to evaluating apparel quality; identification of components in apparel structures.

325. Textile Testing. 5 hours.

Prerequisite: TMI 320 and 320L and (STA 200 or 421 or MS 312-312L).

Standard testing procedures and equipment used in determining the end-use performance of textiles. Analysis of fibers, yarns and fabrics.

334. Quantitative Analysis in Merchandising Apparel and Textiles. 5 hours.

Prerequisite: TMI 210 and ACC 110 and MAT 102 or exemption.

Accounting concepts in relation to specific applications in merchandising; use of computers in merchandising.

375. Residential Interiors and Furnishings. 5 hours.

Prerequisite: TMI 210 or permission of department.

A basic course in furnishing the home for contemporary living. Students have opportunity to apply design principles in planning furnishings for home.

376. Residential Design. 5 hours.

Prerequisite: TMI 375 and permission of department.

An introduction in design communication by two-dimensional drawings of layouts, elevations and sections in traditional and contemporary residences; and specifications for estimating interior finishing materials.

378. Interior Perspective and Media. 5 hours.

Prerequisite: TMI 375.

The development of methods for design communication through manipulation of two- and three-dimensional drawings in many media.

420. Advanced Textiles. 5 hours.

Prerequisite: TMI 320 and 320L.

In-depth study of fibers and finishes; emphasis on man-made fibers, new fiber and finish developments and technology.

430. Clothing and Human Behavior. 5 hours.

Prerequisite: PSY 101 or SOC 105.

A multidisciplinary approach to the study of clothing with particular emphasis on psychological, sociological and economic aspects of clothing.

434. Fashion Image Development and Promotion. 5 hours.

Prerequisite: MKT 360 or permission of department.

A study of practices and the application of techniques of image development in the merchandising of fashion goods. The development of displays and promotions appropriate to various store images.

445. Textile Dyeing. 5 hours. Three lectures and two lab periods.

Prerequisite: TMI 325 and permission of department.

An in-depth study of textile dyeing processes with emphasis on fiber-dye association. Analysis of dyeing techniques and properties of dyes and dyed materials.

464. (DRA) History of Costume: Antiquity to 19th Century. 5 hours.

Prerequisite: (TMI 320 and 320L) or permission of department.

Interrelationship of costume and social, cultural, political and economic environments from antiquity to the 19th Century.

466. History of Costume from the 19th Century to Present. 5 hours.

Prerequisite: TMI 320 and 320L or permission of department.

Interrelationship of costume and social, cultural, political and economic environments from 19th Century to present day.

468. History of Textiles in Europe and America, 1700-1950. 5 hours.

Prerequisite: TMI 320 and 320L or permission of department.

Development of historic textiles and the textile industry in Europe and America from 1700-1950.

471. United States Study Tour in Textiles, Merchandising and Interiors. 5-10 hours. Repeatable for maximum 10 hours credit.

Prerequisite: Senior division and permission of department.

An on-location study of clothing, textiles, fashion merchandising, and residential interiors and furnishings in the United States. Includes lectures by recognized leaders in the fields; meetings with designers, manufacturers, merchants and field trips to designers' showrooms or studios, manufacturing plants, distribution centers, retail stores and museums.

475. Historical Homes and Furnishings. 5 hours.

Prerequisite: [TMI 375 and (ART 200 or 287 or 288 or 289)] or permission of department.

A study of decoration in the past with application to contemporary interiors.

476. Decorative Accessories for the Home. 5 hours.

Prerequisite: TMI 475 or permission of department.

Historical and cultural development of accessories used in the home including ceramics, metals and textiles. Design and characteristics of materials in these accessories will be covered.

477. Contemporary Home Furnishings. 5 hours.

Prerequisite: [TMI 375 and (ART 200 or 287 or 288 or 289)] or permission of department.

Contemporary developments in furniture and accessories for the home; designs and materials used in contemporary homes.

478. Fabrics for Furnishings and Interiors. 5 hours.

Prerequisite: TMI 325 and 475 or 477 or permission of department.

Textiles, Merchandising and Interiors

Construction, fibers, and finishes for fabrics with emphasis on quality, durability, and utilization of current materials for soft floor coverings, window treatments, and upholstery. Estimations and specifications.

485. American Interiors and Furnishings. 5 hours.

Prerequisite: TMI 475 or ENV 476 or permission of department.

American interior design and furnishings from the seventeenth to the twentieth centuries. Identification of styles as well as social, cultural, and historic influences.

488. Historic Interior Materials. 5 hours.

Prerequisite: TMI 485 or permission of department.

Ceiling, wall, and floor coverings, window treatments, upholstery, and lighting in historic American interior design, with emphasis on analysis and selection.

496H, 497H, 498H. Directed Reading and/or Projects. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

510A. International Textiles and Apparel:

Europe. 5 hours.

Prerequisite: TMI 320 and 320L.

Textile and apparel production and distribution in relation to the culture, politics, and policies of major textile and apparel industries in Europe. Emphasis placed on impact of global issues on marketability and availability of textile and apparel products.

510B. International Textiles and Apparel: Asia.

5 hours.

Prerequisite: TMI 320 and 320L.

Textile and apparel production and distribution in relation to the culture, politics, and policies of major textile and apparel industries in Asia. Emphasis placed on impact of global issues on marketability and availability of textile and apparel products.

510C. International Textiles and Apparel: The Americas. 5 hours.

Prerequisite: TMI 320 and 320L.

Textile and apparel production and distribution in relation to the culture, politics, and policies of Canada, Latin America, and the Caribbean. Emphasis on global issues impacting on marketability and availability of textile and apparel products.

524. Principles and Practices in Retailing Apparel and Textiles. 5 hours.

Prerequisite: MKT 360 or permission of department.

Basic concepts of retailing, retail organizational structures, merchandising, and organization of market resources in apparel and textiles. Emphasizes concepts applicable to the apparel and textile industry.

525. Chemical and Optical Analysis of Textiles. 5 hours.

Prerequisite: TMI 325 and 420 and CHM 241 and 241L.

Theory and application of organic chemistry and optical analysis to fabrics, dyes and finishes.

531. Product Standards and Quality Analysis. 5 hours.

Prerequisite: STA 200, and TMI 325 and MKT 360 or MAN 351 or equivalent coursework for transfer students.

Processes of developing, maintaining, and assessing product standards, from the initial design process to end uses of textile and apparel products. Quality assurance and certification programs; governmental regulations; statistical analysis and control and benefits offered through standards are other topics that will be discussed.

534. Fashion Product Analysis. 5 hours.

Prerequisite: TMI 325 and permission of department.

A study of the processes of product analysis and cost/value determination; the interrelation of industry methods and limitations, governmental regulations, textile testing and performance standards, end-use requirements and consumer needs.

535. Textile Finishing Processes. 5 hours.

Prerequisite: TMI 325 and 420.

Theory, application, evaluation and identification of textile finishes and textile auxiliary processes. Examination of the role of finishing and types of finishes used in manufacturing fibers, yarns and fabrics.

540. Nonwovens Technology. 5 hours.

Prerequisite: TMI 320 and 320L and 420 and permission of department.

The science and technology of the manufacture and conversion of nonwoven webs with examination of the interrelationships involving raw materials, bonding systems, manufacturing processes, product properties and end uses.

561. Clothing and Textile Economics. 5 hours.

Prerequisite: TMI 320 and 320L and (ECN 106 or 107).

Organization and functions of clothing and textile industries. Factors related to production, distribu-

tion and consumption of apparel and household textiles; special problems; field trips.

571. Residential Interiors and Economic Resources. 5 hours.

Prerequisite: TMI 378 and 478 or permission of department.

Residential space planning and selection of fabrics, finishes, and furnishings using specified amounts of economic resources.

572. Residential Design Practices. 5 hours.

Prerequisite: Senior division and permission of department.

Relationships between the designer, wholesaler, and retailer in the home furnishing industry. Designer and client relationships with emphasis on retailing practices in the residential design firm.

591. Textiles, Merchandising and Interiors Internship. 5-15 hours. Repeatable for maximum 15 hours credit.

Prerequisite: Major in TMI department, upper division level and permission of department.

Supervised work experience in textiles, clothing, interiors and furnishings in a business firm off campus.

The Daniel B. Warnell School of Forest Resources

Forest Resources Building, 542-2686

Administrative Officers

Arnett C. Mace, Jr., B.S., M.S., Ph.D., *Dean*
Peter E. Dress, B.S., M.S., Ph.D.,
Associate Dean for Academic Programs

General Information

The Warnell School of Forest Resources was established in 1906 through the generosity of George Foster Peabody. It is the oldest such institution operating in the southern United States. In 1991 the School was dedicated in honor of the late Daniel B. Warnell, a prominent banker, landowner, and state legislator who made major contributions in the areas of rural development, public education, public transportation, and conservation of natural resources.

Educational, research, and service programs in the School address the management of all forest resources.

PURPOSE

The forested and other wild lands of the southeastern United States form a large diverse and productive ecosystem. The amenity and non-market benefits provided by these lands—habitat for game and non-game animals, habitat for special plant associations, living filters for aquatic and atmospheric systems, places for outdoor recreation, places for solitude and reflection—are increasingly valued by society. The timber and wood fiber produced on these lands play an important and significant role in the economy of the state, region, country, and world.

The many competing demands that society places on forested and wild lands makes their management a more complex and important task now than at any time in history. Management of these lands to meet competing demands requires professionals who understand how these natural systems func-

tion and how they can be managed effectively to suit our many needs. Forest resource professionals must be aware of the demands of society as well as the demands of natural and managed forest resources. Programs in the School address the major resources provided by the forested lands of the region: forestry, wildlife, fisheries, and forest environmental resources.

The School is committed to the preparation of graduates who are capable of being responsible stewards, competent managers and resource staff professionals, or who plan to pursue graduate study. The curriculum of the School emphasizes the biological and physical science knowledge base that supports responsible management, the required economic and social science base, the quantitative skills necessary for the rational analysis of management alternatives and decisions, and the communication and interpersonal skills required to be professionally effective. The curriculum also emphasizes the holistic nature of forest resource systems. The curriculum is structured so that students must integrate knowledge from the entire course of study and develop good problem-solving skills. This last emphasis is implemented through a requirement for a senior project or senior thesis course where students work to define and solve real-world problems of their choice. Students must present their work to a group of peers and faculty mentors in written and oral form. All students must pass a comprehensive written exam over their course of study prior to graduation.

FACILITIES

The Daniel B. Warnell School of Forest Resources is headquartered in a complex of four buildings. The School operates over 24,000 acres of forest land including the 800-acre Whitehall Forest, located four miles from the main campus. This forest serves as a field laboratory for instruction and research.

Facilities included on this forest are experimental fish ponds, a wildlife and fisheries laboratory, and a wood utilization and plant sciences building.

Other major forest areas managed by the School include (1) the Oconee Forest Park, a recreation and teaching forest located at the edge of the main campus; (2) the B.F. Grant Memorial Forest, a parcel comprising 13,000 acres of Putnam County, used primarily for research and demonstration; (3) the Thompson Mills Forest, which is also Georgia's official arboretum; (4) the 1,500-acre Satilla River Forest, devoted to wildlife and fisheries research; and (5) the 5,000-acre Oconee Swamp Forest. In addition, the School operates the Cohutta Fisheries Research and Extension Center, which is located in northern Georgia about 150 miles from Athens.

ACCREDITATION

The educational programs in timber management and utilization, forest business, wildlife, policy and recreation, forest biology, soil and water resources, and forest science, leading to a Bachelor of Science in Forest Resources, are accredited by the Society of American Foresters (SAF). SAF is the specialized accrediting body recognized by the Council on Postsecondary Accreditation and the U.S. Department of Education as the accrediting agency for forestry in the United States. Additionally, the wildlife area of study meets the certification requirements of The Wildlife Society. The fisheries area of study meets the Professional Certification Program requirements of the American Fisheries Society.

Student Services

ACADEMIC ADVISEMENT

Forest Resources students attending the University of Georgia are advised by faculty and staff of the School of Forest Resources. Pre-professional students attending other institutions should contact the Office of Student Services, Warnell School of Forest Resources, for guidance in program planning and course selection.

Selection of appropriate courses to meet degree requirements is the responsibility of the student. Assistance is available through printed material and the School's academic advising program. Students should arrange quarterly appointments with their advisors

for planning programs of study and course selection. Students should pay particular attention to listed course prerequisites when selecting and scheduling classes in the School. Prerequisites are enforced by the OASIS registration system and permission of the advisor and the course instructor is required to override stated prerequisites for all courses in the School.

FINANCIAL AID

In addition to the financial assistance offered through the University's Office of Student Financial Aid, a number of scholarships and awards are available specifically for undergraduate students in forest resources. These awards total over \$45,000 annually, and are made possible by donations from forest-related industries and organizations, and from individuals. Selection for these scholarships is based on academic achievement, leadership ability, and financial need.

Special Programs

INTERNSHIPS AND COOPERATIVE EDUCATION PROGRAMS

An active internship program gives students opportunity to supplement their classroom studies with practical experience in forest resource management. Students may work with private companies, landowners, conservation organizations, and federal and state agencies.

We also offer a Cooperative Education Program with federal and state agencies such as the U.S. Fish and Wildlife Service, the U.S. Forest Service, and the Georgia Department of Natural Resources. Students can alternate quarters of off-campus work with quarters of on-campus study.

STUDENT ORGANIZATIONS

Participation in School-related extracurricular activities is a tradition among students in the Warnell School of Forest Resources. The Forestry Club, open to all professional and pre-professional students, serves a variety of social, service, and professional development functions. Three professional societies, the Society of American Foresters, The Wildlife Society, and the American Water Resources Association, sponsor student chapters, which are open to professional and pre-professional students. These

organizations foster professional development and the opportunity to practice leadership skills. Students who excel scholastically may qualify for election to membership in Xi Sigma Pi, the forestry honor society.

Degrees Offered

The Warnell School of Forest Resources offers the professional undergraduate degree of Bachelor of Science in Forest Resources (B.S.F.R.) with majors in Forestry, Wildlife, Fisheries and Aquaculture, and Forest Environmental Resources. The student must select one of these majors.

Through the Graduate School, the Warnell School of Forest Resources offers programs of study leading to the Master of Forest Resources, the Master of Science, and the Doctor of Philosophy degrees. Persons interested in these programs should contact the Graduate Coordinator of the Warnell School of Forest Resources or refer to the *Graduate Bulletin* of the University.

HOURS AND RESIDENCY

To obtain the B.S.F.R. degree, students must successfully complete 90 hours in the pre-professional program and 92-94 hours in the professional program, plus two hours of basic physical education.

Students must meet University of Georgia residency requirements and typically will spend six quarters in residence in the professional program.

Bachelor of Science in Forest Resources Degree Requirements

The B.S.F.R. degree consists of two parts: (1) the pre-professional program, taken during the freshman and sophomore years at either the University of Georgia or another institution, and (2) the professional program, taken in the Warnell School of Forest Resources.

ADMISSION

Pre-Professional Program

Admission to the pre-professional program is handled through the University of Georgia Undergraduate Admissions Office. On the UGA application, indicate "Forest Resources"

as the school or college in which you plan to enroll. Your intended UGA major is pre-forest resources.

Professional Program

Admission to the professional program is granted by the Warnell School of Forest Resources Undergraduate Affairs Committee. In order to be admitted to the professional program, a student must be admitted to the University through the Admissions Office and must also submit a separate Warnell School of Forest Resources application.

Students may apply for fall quarter or spring quarter admission. A maximum of 60 students will be admitted each quarter. Fall quarter applications are due April 1. Spring quarter applications are due December 15. *Note that these deadlines are earlier than University of Georgia application deadlines.*

Eligibility for Admission to the Professional Program.

At the time of matriculation in the professional program, students must have completed the pre-professional curriculum, except that up to 10 hours of electives may be deferred if an equal number of hours has been completed from the following courses: ECL 326-326L (Wildlife and Fisheries majors only), FRS 201-201L, FRS 302-302L, and CSS(FRS) 306-306L. Professional course prerequisites must be satisfied.

Admissions Process

- Students who meet the above eligibility requirements and have a GPA on pre-professional and professional courses greater than or equal to 3.00 will be admitted immediately into the professional program.
- Students who meet the above requirements and have a GPA on pre-professional and professional courses greater than or equal to 2.50 and less than 3.00 will be admitted into the professional program subject to enrollment limitations.
- Students who meet the above requirement and have a GPA on pre-professional and professional courses less than 2.50 may be admitted if openings are available and if they provide satisfactory evidence that they can perform academically at the level expected of students in the professional program. Students should

submit a statement explaining their academic performance and efforts to improve it.

- Students who have not completed the required coursework will be deferred until requirements are met.
- Students who are deferred or denied admission may appeal the decision to the Associate Dean for Academic Programs by written petition.

PRE-PROFESSIONAL CURRICULUM

The pre-professional curriculum consists of 90 quarter hours plus two hours of physical education. This meets the University Core Curriculum requirements. It may be completed at the University of Georgia or at other institutions. Students taking the pre-professional coursework at another institution should contact the Office of Student Services, Warnell School of Forest Resources, for confirmation of transfer credit.

HOURS

AREA I HUMANITIES/FINE ARTS 20

ENG 101, 102	10
SPC 108	5

Humanities elective—choose one from the following: Drama, Music, Art Appreciation (100-200 level); foreign language (100-200 level); PHY 102; REL 115, CML 221, 222; ENG 231G, 232G, 233G

5

AREA II MATHEMATICS AND NATURAL SCIENCES 20

CHM 121, 121L, 122, 122L	10
STA 200	5

Math/Natural Sciences elective—choose one from the following: MAT 102; STA 221, 222; PHY 110; AST 107-107L, 108-108L; BOT 121-121L, 122-122L; CHM 111, 111L, 112, 112L; GLY 115-115L, 116-116L, 125-125L, 126-126L; GGY 120-120L, 121-121L, 122-122L; PCS 127-127L, 128-128L

5

AREA III SOCIAL SCIENCES 20

POL 101	5
ECN 106	5
HIS 251 or 252 or a social science elective	5

Social Science elective—choose one from the following: HIS 111, 121, 122; GGY 101; ECN 107; PSY 101, ANT 102; SOC 105, 160

5

AREA IV COURSES RELATED TO MAJOR

30

MAT 116, 253	10
BIO 103-103L or 107-107L	5
BIO 104-104L or 108-108L	5
CS 201-201L	5
Math/Natural Sciences elective	5
Physical Education	2

PROFESSIONAL CURRICULUM

The professional curriculum consists of 37 quarter hours designated as the forest resources professional core and a minimum of 57 quarter hours in one of four majors—Forestry, Wildlife, Fisheries and Aquaculture, or Forest Environmental Resources, for a total of 94 hours. The total program of study leading to the B.S.F.R. consists of 184 quarter hours: 90 hours in the pre-professional, or Regents' core, and 94 hours in the professional core and major requirements (additionally, two quarter hours are required in physical education).

Forest Resources Core Requirements (All Majors):

HOURS

FRS 300-300L Field Orientation and Measurement in Forest Resources	5
FRS 302-302L Forest Ecology	5
CSS(FRS) 306-306L Soils and Hydrology	5
FRS 330 Fish and Wildlife Management	3
FRS 361-361L Forest Biometrics	5
FRS 471-471L Forest Resources Management	4
FRS 473 Senior Project in Forest Resources Management or FRS 475 Senior Thesis in Forest Resources	5
FRS 480 Forest Resources Policy	4
FRS 481 Senior Seminar in Forest Resources	1
Total hours in School core:	37

Forestry

The Forestry major is intended for students who are interested in forest management, business, policy, and biology. Required courses beyond the professional school core requirements for the Forestry major are:

	HOURS
FRS 201-201L Dendrology	5
FRS 303-303L Silviculture	5
FRS 304 Tree Development and Physiology	3
FRS 371-371L Forest Resource Economics	4
FRS 350 Wood Properties and Utilization	4
FRS 391-391L Spatial Information in Forest Resources	3
FRS 461-461L Forest Mensuration	5
FRS 462 Timber Management	4
FRS 572-572L Forest Harvesting and Roads	4
Electives	20
Required hours beyond School core:	57
Total required hours beyond Regents' core:	94

Electives in this major may be chosen to satisfy requirements for one of seven areas of emphasis within the major. Areas of emphasis for the Forestry major are: 1) Forest Management, 2) Forest Business, 3) Forest Recreation, 4) Wood Utilization, 5) Forest Administration and Policy, 6) Urban Forestry, 7) Forest Biology. Consult with your advisor concerning requirements for specific areas of emphasis. For maximum flexibility, a student may choose not to elect an area of emphasis.

Wildlife

The Wildlife major is designed to provide a strong background in biology and zoology for students interested in the management of wildlife resources. Courses in botany, forest biology, and forest management also are required because of their importance in managing wildlife habitat. Graduates from this major are well qualified for advanced study in wildlife biology and management, but also are trained for beginning wildlife technician and some biologist positions with public agencies or private firms. There are no designated areas of emphasis in this major. Required courses beyond the professional school core requirements for the Wildlife major are:

	HOURS
FRS 201-201L Dendrology	5
FRS 303-303L Silviculture	5
FRS(ECL) 358-358L Natural History of Vertebrates	5
FRS 391-391L Spatial Information in Forest Resources	3
FRS 430 Range and Wildlife Habitat Evaluation and Management	5
FRS 432 Wildlife Physiology and Nutrition	5
FRS 530-530L Techniques in Wildlife Population Analysis and Management	5
GEN 358 Principles of Genetics	5
ECL 326-326L Vertebrate Diversity and Evolution	5
BOT 4__ Any 400-level or above botany course	5
Electives	8
Required hours beyond School core:	56
Total required hours beyond Regents' core:	93

Fisheries and Aquaculture

This major is designed for students interested in the management of fisheries resources. It emphasizes zoology and aquatic ecology in the context of forested ecosystems, as well as fish production from aquaculture and pond management programs. Students in this major are prepared for advanced study in the field and for employment at the entry level as fisheries technicians or biologists with state and federal agencies or private firms, and as fisheries technicians or biologists with state and federal agencies or private firms, and as fisheries managers for aquaculture or hatchery operations. There are no designated areas of emphasis in this major. Required courses beyond the professional school core requirements for the Fisheries and Aquaculture major are:

	HOURS
ECL(FRS) 431-431L Limnology	5
ECL 405-405L Ichthyology	5
ECL 407-407L Invertebrate Zoology	5
FRS 437 Fish Physiology	5
FRS 536 Fisheries Management	5
FRS 538 Fish Culture	5
GEN 358 Principles of Genetics	5
ENG 359 Technical Writing	5
ECL 326-326L Vertebrate Diversity and Evolution	5
Electives	10
Required hours beyond School core:	55
Total required hours beyond Regents' core:	92

Forest Environmental Resources

This major was designed to prepare students for careers in water resources management, forest hydrology, forest soils, or natural resource assessment. Students in this major must elect to follow the elective requirements in one of three designated areas of emphasis within the major: 1) Soil and Water Resources, 2) Hydrology and Environmental Systems, 3) Environmental Resource Assessment.

Required courses beyond the professional core requirements for the Forest Environmental Resources major:

	HOURS
FRS 201-201L Dendrology or BOT 465-465L Plant Taxonomy	5
FRS 303-303L Silviculture	5
CHM 240 and 240L Fundamentals of Organic Chemistry or MAT 254 Calculus	5
FRS 391-391L Spatial Information in Forest Resources	3
FRS 416-416L Environmental Monitoring	5
Area of Emphasis Courses	30
Other Electives	3
Required hours beyond the School core:	56
Total required hours beyond Regents' core:	93

Please consult with your advisor regarding elective lists and requirements for areas of emphasis.

COURSES OF INSTRUCTION

Forest Resources (FRS)

Contact Person: Dr. Peter E. Dress, Associate Dean for Academic Programs, 542-7895

***Courses denoted with asterisks are open to all University students; all other courses require permission of School for enrollment.**

***170. Orientation to Forestry.** 1 hour.

A survey course intended to familiarize the student with the practice and profession of forestry.

***201-201L. Dendrology.** 5 hours. Three lectures and two 3-hour lab periods or field trips.

Prerequisite: BIO 104-104L or 108-108L.

Identification, classification, silvical requirements, and distribution of trees, shrubs, and other plants of importance to the management of forest resources.

***300-300L. Field Orientation and Measurements in Forest Resources.** 5 hours. Two lectures and two 4-hour labs.

Land measurements and mapping; forest, wildlife, fisheries, and environmental resource observation and measurement. Use of school computer facilities for the analysis of measurement data and the development of summary descriptions of forest resource systems.

***302-302L. Forest Ecology.** 5 hours. Four lectures and one 3-hour lab.

Prerequisite: FRS 201-201L or permission of school.

Individual, population, community and ecosystem processes regulating forest structure and function; interactions and functions of forest plants, animals and microbes; effects of site, environmental factors and disturbance on forest composition and dynamics.

***303-303L. Silviculture.** 5 hours. Three lectures and one 5 hour lab.

Prerequisite: FRS 302-302L.

Theory and techniques of controlling establishment, composition and growth of forest stands; cultural treatments including cuttings, use of fire and silvicides, and control of pests.

304. Tree Development and Physiology. 3 hours.

Prerequisite: BIO 104-104L or 108-108L.

Processes and control of growth in forest trees, with emphasis on carbon gain and use, water relations, mineral nutrition, intrinsic and environmental factors controlling growth, sexual and asexual reproduction, and tree genetics and breeding.

306-306L. (CSS) Soils and Hydrology. 5 hours. See CSS 306-306L.

***330. Fish and Wildlife Management.** 3 hours.

Prerequisite: BIO 104-104L or 108-108L.

Principles governing conservation and management of fish and wildlife. The interrelations of wildlife management and other resource uses.

***340. Forest Recreation.** 3 hours.

An introductory survey of the recreational use of forests. Fundamentals of recreation philosophy, the multiple use concept and problems of forest recreation management.

350. Wood Properties and Utilization. 4 hours.

Major worldwide uses for wood. Characteristics of major wood products, processes in manufactur-

Forest Resources

ing and marketing. Properties of wood raw material affecting their quality.

351-351L. Wood Drying and Protection. 3 hours. One lecture and two 2-hour labs.

Principles and techniques of commercial lumber drying and protection of wood from decay and fire.

352-352L. Introduction to Wood Technology. 3 hours. One lecture and two 2-hour labs.

Prerequisite: FRS 350.

Wood physical and mechanical properties related to the structure of the tree and to utilization as wood products. Identification of important commercial woods of North America.

353. Wood Products Study Tour. 3 hours. One lecture and one 4-hour lab.

Prerequisite: FRS 350 and 352-352L.

A survey of primary and secondary wood products industries through lecture and mill tours.

358-358L. (ECL) Natural History of Vertebrates. 5 hours. Three lectures and two 3-hour lab periods.

Not open to students with credit in ZOO(FRS) 358-358L.

Prerequisite: BIO 104-104L or 108-108L.

An introduction to local vertebrate fauna with emphasis on behavior, life history, ecology and systematics.

361-361L. Forest Biometrics. 5 hours. Four lectures and one 2-hour lab period.

Prerequisite: FRS 300-300L.

Basic parametric statistical methods and concepts including linear models, sample survey design and analysis, and applications to problems in forest resources. Analysis of forest resources data using standard statistical software.

371-371L. Forest Resource Economics. 4 hours. Three lectures and one 2-hour lab.

Prerequisite: ECN 106 or AAE 258.

Overview of economic analysis as applied to forest resources and economic factors that influence forest management decisions. Concepts and methods for the analysis of forest resource problems and current forestry policy issues.

391-391L. Spatial Information in Forest Resources. 3 hours. Two lectures and one 4-hour lab.

Prerequisite: FRS 300-300L.

Interpretation and use of maps, aerial photographs, and satellite imagery in forest resources; production of maps from field measurements; determination of land area and ownership; interpretation of contour maps. Spatial data bases: concepts and use.

395. Forest Operations Study Tour. 3 hours.

Prerequisite: Upper division, FRS majors only.

Visits to federal, state, and private forest agencies in the Southeastern states. Forest resource management field operations and forest based indus-

tries such as pulpmills, sawmills, and furniture factories will be emphasized. Students are expected to pay for any room and board.

396. Forest Resources Internship. 3 hours. Repeatable for maximum 12 hours credit; but no more than 3 hours may be counted toward graduation. Prerequisite: FRS majors only. Completion of at least 36 hours in the professional curriculum required.

By arrangement with a business or government agency, the student will work for 60 to 90 days on at least three different professional-level assignments. The purpose of this course is to give practical experience in day-to-day forestry operations and management. The student will write a project paper and be given an oral exam.

400-400L. Forest Soil Management. 5 hours. Four lectures and one 3-hour lab.

Prerequisite: CSS 305-305L or CSS(FRS) 306-306L.

Corequisite: FRS 303-303L.

Morphological, physical and chemical soil properties affecting tree growth and forest productivity; evaluation of soils and site quality; preparation of forest sites for planting, diagnosis and correction of nutrient limitations; use of forest soil systems for waste treatment.

402. Genetics and Breeding of Forest Trees. 4 hours.

Prerequisite: BIO 104-104L or 108-108L.

Genetic variation in forest trees; harnessing natural variation and creating new variation to meet breeding objectives; economic and biological consequences of tree domestication; conservation of genetic resources.

403. Regional Silviculture. 5 hours.

Prerequisite: FRS 303-303L or equivalent, or permission of school.

Identification of the major forest regions of the United States and discussion of their silvicultural management.

411. Forest Hydrology. 5 hours.

Prerequisite: CSS(FRS) 306-306L or permission of school.

Terrestrial components of the hydrologic cycle focusing on the qualitative analysis of precipitation, snowmelt, runoff generation, routing, infiltration and subsurface flow and transport. Emphasis is on the definition of hydrologic processes, identification of hydrologic resources, development of environmental monitoring techniques, and application to hydrologic resource management.

412. Quantitative Methods in Forest Hydrology. 5 hours.

Prerequisite: FRS 411 or permission of school.

Theory of forest hydrologic processes; precipitation, evapotranspiration, streamflow, groundwa-

ter occurrence and movement, and soil zone flow and transport. Emphasis is on using quantitative methods in conjunction with field and laboratory data to identify flow and transport dynamics.

413. Field Methods in Hydrology. 3 hours. Two 3-hour labs.

Prerequisite: FRS 411 or equivalent.
Field data acquisition methods related to forest hydrology precipitation quantity and quality, evapotranspiration, streamflow, groundwater occurrence and movement, and soil zone transport processes. Methods for determining flow paths, mass balances and environmental fate of solutes.

416-416L. Environmental Monitoring. 5 hours. Four lectures and one 3-hour lab.

Prerequisite: [CSS(FRS) 306-306L and FRS 361] or equivalent.

Design, implementation and interpretation of sampling programs for environmental systems (especially aquatic systems) for monitoring, regulatory activities, quality control, scientific study and impact assessment.

430. Range and Wildlife Habitat Evaluation and Management. 5 hours.

Prerequisite: FRS 302-302L.
Vegetation and habitat evaluation procedures; environmental impact assessment; analysis of food habits and forage quality; ecology and management of forest range habitats for domestic livestock and wildlife; integration of timber, grazing, and wildlife management.

431-431L. (ECL) Limnology. 5 hours.

See ECL 431-431L.

432. Wildlife Physiology and Nutrition. 5 hours.

Prerequisite: CHM 261-261L and FRS 330 and FRS(ECL) 358-358L, or permission of school.
An advanced course relating animal physiology and nutrition to wildlife ecology and management.

437. Fish Physiology. 5 hours. Three 1-hour lectures and two 3-hour lab periods.

Prerequisite: CB 300-300L or permission of school.
An overall review of basic fish physiology with an emphasis on the effects of various environmental stresses on physiological functions of fish.

***440. Forest Landscape Management.** 3 hours.

Prerequisite: FRS 303-303L and FRS 340, or permission of school.

History and development of forest landscape appreciation. Effects of conventional forest practices on landscape quality. Methods of manipulating forest stands and understory vegetation for maintaining or enhancing forest landscape quality.

451. Wood Utilization in Pulp and Paper Products. 5 hours.

Prerequisite: FRS 352-352L.

Pulping and papermaking processes and the effects of wood composition and quality on yields and properties of pulps, papers and paperboards. Assessment of pulpwood sources and determination of supplies needed for mills of various types and capacities.

452. Wood Utilization in Lumber Products. 5 hours.

Prerequisite: FRS 352-352L.
Manufacturing processes and the effects of sawlog and wood composition and quality on yields and properties of lumber. Assessment of sawlog sources and determination of supplies needed for sawmills of given types and capacities.

453. Wood Utilization in Panel Products. 5 hours.

Prerequisite: FRS 352-352L.
Wood-based panels manufacturing processes and the effects of log and wood composition and properties on yield and properties of panels. Assessment of raw material sources and determination of supplies needed for panel plants of given types and capacities.

457-457L. Identification of Domestic and Tropical Woods. 3 hours. Repeatable for maximum 6 hours credit. One lecture and two 2-hour lab periods.

Not open to students with credit in FRS 352.
Identification of common domestic and tropical woods.

461-461L. Forest Mensuration. 5 hours. Four lectures and one 2-hour lab.

Prerequisite: FRS 300-300L and 361-361L.
Methods for direct measurement and indirect estimation of primary and secondary forest products. Emphasis on sample survey applications in timber management and on forest growth and yield relationships.

462. Timber Management. 4 hours.

Prerequisite: FRS 461-461L.
The organization and management of forest properties for the production of commercial forest products.

464. Forest Inventory. 5 hours.

Prerequisite: FRS 461-461L.
Planning forest inventories and the comparison of various equal and unequal probability sampling concepts are emphasized. Permanent and temporary forest sampling procedures are compared. Current stand and future growth estimation principles are included.

471-471L. Forest Resources Management. 4 hours. Three lectures and one 2-hour lab period.

Prerequisite: (FRS 361-361L and second professional year standing in Forest Resources) or permission of school.

Forest Resources

Principles of management for renewable natural resources systems and the use of systems analysis in problem definition and solution. Alternative management approaches, including sustainable production in commodity, economic, net social benefit, and ecosystem terms. Implementation, administration, and monitoring of planned management actions.

473. Senior Project in Forest Resources Management. 5 hours.

Not open to students with credit in FRS 475.

Prerequisite: FRS 471-471L and senior standing in Forest Resources.

Advanced problems in forest resources management integrating all courses to date.

475. Senior Thesis in Forest Resources. 5 hours.

Not open to students with credit in FRS 473.

Prerequisite: Senior standing and permission of school.

Supervised research projects integrating material from courses in the student's area of emphasis. Written and oral presentations summarizing the research results and their significance.

480. Forest Resources Policy. 4 hours.

Prerequisite: POL 101.

Forest policy as a process, establishing forestry agendas, political decision models, political institutions and interest groups, policy in organizations, current issues.

481. Senior Seminar in Forest Resources. 1 hour.

Prerequisite: Senior standing.

Current issues relating to forest resources management and administration.

490-490L. Wildlife Damage Management. 4 hours. Three lectures and one 3-hour lab.

Prerequisite: FRS 330 or FRS(ECL) 358-358L or permission of school.

Theory and practice of assessing and controlling damage done by wild and feral vertebrate animals, especially mammals and birds. Emphasis is on protecting agricultural and forest crops and property.

501. Urban Tree Management. 5 hours.

Prerequisite: One course in botany or biological science or permission of school.

Establishment and maintenance of trees in urban environments. Nature and benefits of trees, planting and soil management; pruning, repair and protection; stress management; values of urban trees.

530-530L. Techniques in Wildlife Population Analysis and Management. 5 hours. Three lectures, two 3-hour lab periods, and field trips.

Prerequisite: Permission of school.

Field and laboratory methods commonly used by professional wildlife ecologists to analyze and manipulate animal populations.

536. Fisheries Management. 5 hours. Two lectures and one 3-hour lab.

Prerequisite: ECL 405-405L and permission of school.

Principles, analytical methods, and techniques used in the management of fishery resources are presented. This course emphasizes an ecological approach to resource management.

538. Fish Culture. 5 hours. Three lectures, one 2-hour lab period, and field trips.

Prerequisite: CB 300-300L and permission of school.

Study of extensive and intensive culture of fishes with emphasis on methods and species utilized in the eastern United States.

***540-540L. Forest Recreation Area Development.** 5 hours. Three lectures and two 2-day field trips.

Prerequisite: FRS 340.

Principles of recreation area planning, site selection and development.

***541. Wilderness Management.** 5 hours.

Prerequisite: FRS 340 or permission of school.

Readings and discussion of the origins, philosophy, and values of the wilderness concept, and its associated issues and arguments. Wilderness management-scope, objectives, and options available within legal, practical, and philosophical limits. Field study and development of a management plan.

572-572L. Forest Harvesting and Roads. 4 hours. Three lectures and one 3-hour lab period.

Prerequisite: FRS 300-300L.

Corequisite: FRS 303-303L.

Techniques and systems for harvesting and roading forests. Production, costs, safety, and environmental protection measures are evaluated and discussed. Field exercises stress planning of harvesting and road construction operations.

***573. Economics and Principles of Management of Southern Forests.** 5 hours.

Prerequisite: Permission of school.

Study of economic importance and opportunities of forest lands and associated resources; renewable vs. non-renewable resources; principles of management of timber, water, wildlife, recreational and related resources; and introduction to public, private and industrial forest land management practices. A bibliography and additional readings will be required of graduate students.

575. Procurement and Management of Wood Fiber Supply. 4 hours.

Management of the wood fiber supply, program management functions, legal aspects and analysis of current issues in raw material management.

576. Forest Products Marketing. 5 hours.

Prerequisite: Permission of school.

An overview of planning, organizing, and managing forest products marketing programs, both domestically and internationally. Focus on developing marketing strategies and implementation of marketing plans in the context of forest industry structures and distribution channels.

580. Wood Products Seminar. 2 hours.

Prerequisite: FRS 350 and 351 and (FRS 451 or 452 or 453).

Current topics and issues in wood products.

***582. Natural Resources Law for Managers and Administrators.** 5 hours.

Prerequisite: Senior or graduate standing.

Introduces future natural resource managers to statutory and case law and to important regulations concerning resource conservation, allocation, and development, and acquaints them with modern, systems-sensitive regulatory programs affecting natural resource administration. Inquires into the division and nature of the functions of the judicial and executive branches of government. (Open to non-law students only.)

585. Forest Policy Issues. 3 hours. Repeatable for maximum 12 hours credit.

Prerequisite: POL 101 or FRS 480.

The course will familiarize students with forestry issues and political processes. A general framework for analyzing current issues will be developed and specific issues will be analyzed each year.

592. Directed Readings or Projects in Forest Resources. 1-5 hours. Repeatable for maximum 15 hours credit.

Prerequisite: Junior standing and permission of school.

Individual study, including readings, research or other projects, in a specialized area of forest resources, under the supervision of a faculty mentor.

593. Special Topics in Forest Resources. 1-5 hours. Repeatable for maximum 15 hours credit.

Prerequisite: Junior standing and permission of school.

Special-interest or experimental courses offered on a one-time basis. Course content will vary with each offering.

The Henry W. Grady College of Journalism and Mass Communication

Journalism Building, 542-1704

Administrative Officer

J. Thomas Russell, A.B.J., M.S., Ph.D., *Dean*

General Information

PURPOSE

The mission of the Henry W. Grady College of Journalism and Mass Communication* is teaching, research, and service. To fulfill its mission most effectively, the College continually seeks minority students and faculty members.

1. Teaching

A. Undergraduate students prepare for careers in the mass media, corporations, government agencies, non-profit organizations, and other institutions that disseminate information and ideas to the public. Critical skills necessary to gather, prepare, and disseminate information are developed. Students also study the function, ethics, history, law, and significance of mass communication in society. The role of free and responsible media in a democracy is emphasized.

B. Graduate programs offer advanced training in the practice, management, and evaluation of mass communication for future practitioners, teachers, policymakers in the media, industry, academia, and government.

2. Research

Through research and practice, the faculty develops knowledge to fulfill the College's mission. Advances gained through research are disseminated to students, teachers, scholars, media professionals, and the public through classes, seminars, publications, and other means of communication.

3. Service

The College provides knowledge and expertise to foster a communications industry that is financially sound and best serves a democratic citizenry by helping them use and evaluate communications effectively.

FACILITIES

The College is housed in a modern multimillion-dollar communication center that provides some of the best instructional facilities available. Included are classrooms equipped with color televisions for closed-circuit broadcast, two large theater-style auditoriums, audio studios, color-equipped television studios, complete packages of portable color television cameras and videotape recorders, videotape editing facilities, satellite communications equipment, computerized advertising, graphics, photography, news writing, and editing laboratories and typesetting equipment. A learning resources center supplements the University Libraries. An elevator makes all floors of the building accessible to persons with disabilities.

ACCREDITATION

The College is accredited by the Accrediting Council on Education in Journalism and Mass Communications.

DEGREES OFFERED

The College offers an undergraduate degree of Bachelor of Arts in Journalism (A.B.J.) and advanced degrees of Master of Arts (M.A.), Master of Mass Communication (M.M.A.), and Doctor of Philosophy (Ph.D.).

MAJORS

Seven majors are offered: Advertising, Broadcast News, Magazines, Newspapers, Public Relations, Publication Management, and Telecommunication Arts.

*Hereinafter, the name is abbreviated to College.

ADMISSION

The academic program for the A.B.J. degree consists of two parts. The pre-journalism program taken during the freshman and sophomore years either at UGA or another institution and the professional program taken after formal admission to the College. Pre-journalism students at the University of Georgia are enrolled in the College of Arts and Sciences.

Applicants presenting the highest qualifications are accepted each of the four quarters of the academic year. The number of spaces varies from quarter to quarter as determined by availability of staff and facilities.

The College considers grade point averages and test scores to be the primary measures upon which to base admission decisions. It recognizes, however, that the inclusion of talented students of diverse international and racial backgrounds is an indispensable part of the educational process. The Admissions Committee considers the need for such diversity in reaching its decisions.

Applications are accepted only from students who have met minimum requirements in number of credit hours (junior standing or in the last quarter of the sophomore year), cumulative and overall grade point averages (at least 2.50), and English proficiency (determined by SAT or ACT verbal score or an admissions test administered by UGA's Testing Center).

A point system based on academic achievement in these categories allows some students to gain automatic admission while others are considered on a space-available basis.

Applications must be submitted directly to the Office of Undergraduate Services, Room 201, College of Journalism and Mass Communication. The deadline is always 4:00 p.m. on Friday of the second full week of classes.

Applicants may be offered an opportunity to specify second or third choices of major.

Changes of major within the College must be approved by the Admissions Committee and are not automatic. Approval to change majors does not imply approval of journalism courses already taken in another major or in the complementary area; therefore, loss of graduation credit could occur.

SECOND UNDERGRADUATE DEGREE

A person who has earned a baccalaureate degree in a major other than an area of journalism/mass communication from an accredited institution may apply as a second bachelor's degree candidate.

Minimum requirements include cumulative and overall grade point averages (at least 2.70) and English proficiency (determined by SAT or ACT verbal score, GRE, or a test administered by UGA's Testing Center.)

Satisfactory completion of 50 quarter hours of journalism courses are required to earn a second degree. Additional prerequisite hours may be required if the Admissions Committee feels there are deficiencies in the humanities, social sciences, or other areas of the core.

IRREGULAR AND TRANSIENT STUDENTS

Students who are not candidates for a degree but who are interested in taking course work may be admitted as "Irregular" students in the college of Arts and Sciences as pre-journalism majors. Such persons usually have already earned bachelor's degrees and are enrolled for a limited time.

Transient students are candidates for degrees at other institutions. They may be admitted as pre-journalism majors in the College of Arts and Sciences with the intention of transferring credits to their parent institutions.

MINOR

A minor in Mass Communication, comprised of 25 quarter credit hours of undergraduate courses, is offered by the College. Only students enrolled in UGA undergraduate degree programs other than Bachelor of Arts in Journalism may apply.

Students who pursue this minor must declare their intention by completion of a form in the Office of Undergraduate Services of the College. When the minor is successfully completed, certification will be forwarded to the student's dean and will be recorded on the permanent transcript.

ACADEMIC ADVISING

Journalism students are advised in this College; pre-journalism students in the College of Arts and Sciences. Although selection of courses to meet degree requirements is the

responsibility of the student, assistance is available through the College's printed materials and its advising program.

GRADUATION

Upon completion of 145 quarter hours of academic credit, each student's progress toward completion of requirements for the A.B.J. degree is monitored by the graduation coordinator. The purpose is to identify and solve problems that could delay graduation.

HONORS PROGRAM

The College encourages superior academic achievement by endeavoring to identify, recruit, and assimilate into the University's academic life students with outstanding academic potential.

Honors students are often able to develop programs of study that have greater flexibility and include advanced courses.

Qualified students have opportunities for individual readings and projects, honors theses, honors option courses, area study majors, and a combined A.B.J./M.B.A. program offered cooperatively by the Colleges of Journalism and Business.

INTERSHIPS

Qualified students in the College can gain experience by serving internships. While not required, internships are considered essential to a student's total educational experience and greatly enhance job opportunities upon graduation.

Five credit hours may be earned for successful completion of an internship if:

1. Advance approval is received from the student's department. A written request is submitted and includes a job description, length of internship, name of supervisor, and rate of pay. A letter verifying the internship offer is submitted by the employer prior to the first day of the quarter in which the internship is served.
2. Certain basic courses as determined in each department have been completed.
3. The internship covers a minimum of eight weeks of full-time employment.
4. The student registers concurrently for JRL 501 during the quarter of the internship. The course must be paid for the same as any other 5 hour course. It counts as a college elective and is included in the 50 maximum hours of journalism credit for the A.B.J. degree.

5. A written report is submitted by the employer prior to the last day of the quarter in which the internship is served, describing the duties and the quality of the intern's performance.
6. A final, written report of week-by-week internship activities is submitted by the student to the department prior to the last day of the quarter in which the internship is served.

OTHER REQUIREMENTS

In addition to College requirements, A.B.J. degree candidates must meet general degree requirements applicable to all students at the University as set forth in the general information section of this Bulletin.

HOURS AND RESIDENCY

A minimum of 182 quarter hours must be successfully completed to earn the A.B.J. degree, including basic physical education. A minimum of 95 quarter hours must be earned in the liberal arts.

At least 60 of the last 90 quarter hours must be earned in residence at the University of Georgia.

No more than 50 of the 182 hours for graduation may be taken in journalism courses.

No more than 20 hours of journalism credit earned prior to enrollment in the College may be applied toward satisfaction of requirements for the A.B.J. degree.

GRADES

For a journalism course or any prerequisite to a journalism course to count toward the A.B.J. degree, a grade of C or higher must be earned.

COURSE CHALLENGES

Certain journalism courses may be challenged. Students who feel they have mastered work in one of those courses outside the classroom may challenge it for credit or for exemption without credit. The challenge should first be discussed with the appropriate department head.

PETITIONS

A waiver in College rules or curriculum requires a written petition to the College's Executive Committee.

ENGLISH PROFICIENCY TEST

The English Proficiency Test is administered on a group basis by the Testing Center on the UGA campus at a specified time each quarter. It may be taken on an individual basis by special arrangement with the Testing Center. The test may be taken an unlimited number of times; however, it may be taken only *twice* per quarter. A nominal fee is charged to take this test.

ORIENTATION

An orientation for newly-admitted students informs them about advising, rules, requirements, procedures, and other important matters.

KEYBOARDING SKILLS

All students admitted to the College are expected to have keyboarding skills adequate to meet course requirements.

ADDITIONAL INFORMATION

A copy of the College's handbook may be requested from the Dean's Office, College of Journalism and Mass Communication, University of Georgia, Athens, GA 30602-3018.

Curriculum Requirements

PRE-JOURNALISM CURRICULUM

	HOURS
AREA I HUMANITIES/FINE ARTS	20
ENG 101, 102(105H)*	10
Choose from the following: CLC 120(205H), 121(206H), 150(207H); CML 221(225H), 222(226H); ENG 231G(235H), 232G(236H), 233G(237H); GER 201, 202	5
Choose from the following: ART 200, 287(211H), 288, 289; DRA 200(210H), 212; LIN 210; MUS 202(210H); PHY 100(214H), 102(202H); REL 115, 116(225H); SPC 108(218H); or a second literature course from above list	5

AREA II MATHEMATICS AND NATURAL SCIENCES

20

Choose MAT 102 or STA 200(210H) and one other course from the following: AST 297H-297L; CS 101-101L, 201-201L; GGY 104(214H); MAT 102, 105, 109, 116, 253(263H); PCS 101; PHY 110(210H); STA 200(210H), 221; or another course from laboratory science options below

10

Choose two from the following: GGY 120-120L, 121-121L, 122-122L, or choose one two-course sequence from AST 107-107L and 108-108L; BIO 103-103L and 104-104L; BOT 121-121L and 122-122L; BOT 126H-126L and 127H-127L; CHM 111, 111L and 112, 112L; GLY 115-115L and 116-116L; GLY 235H and 236H; PCS 127-127L and 128-128L; or SCI 207H, 208H, 209H

10

AREA III SOCIAL SCIENCES

20

POL 101(105H)

5

HIS 251(253H), 252(254H)

5

Choose from the following: ANT 102(212H); GGY 101(215H); PHY 101(215H), 205H; POL 230; PSY 101(103H); SOC 105(104H), 160; SOS 104

10

AREA IV COURSES RELATED TO MAJOR

30

Completion or exemption through the third quarter of one language: FR, SP 101, 102, 103, 113H; CHI, GER, ITA, JPN, KRN, LAT, POR, RUS, SWA 101, 102, 103; GRK 101, 102, 103

15

Choose from the following: an additional literature course from Area I; CHI 201; FR 201(213H); GER 221(114H); HBW 201; ITA 201; JPN 201; KRN 201; LAT 204; POR 201; RUS 104; SP 201(213H); SWA 104

5

ECN 106(116H), 107(117H)

5

Choose one of the following courses not chosen to fulfill the American history requirement: HIS 111, 121, 122, 215H, 216H, 217H, 231, 241, 242, 251(253H), 252(254H), 278, 279

5

*Courses with an "H" suffix are for participants in the Honors Program.

PROFESSIONAL CURRICULUM

HOURS

MASS COMMUNICATION CORE 5

JRL 504 (Law of Communication), which exposes the legal and ethical ramifications common to all mass communication media and application of skills, is required of all students seeking the A.B.J. degree.

COURSES IN THE MAJOR 45

Course requirements are listed under a following section titled Departments and Majors.

COMPLEMENTARY COURSES 25

Courses from disciplines in the liberal arts and business that complement the major.

GENERAL ELECTIVES 15

Sufficient courses to complete a total requirement of 182 quarter hours. Courses with prefixes of ACA, DEV, PEB, JRL, UNV are unacceptable.

BASIC PHYSICAL EDUCATION 2

(PEB 100-199)

Total Hours Required for the Bachelors of Arts Degree 182

DEPARTMENTS AND MAJORS

Advertising/Public Relations

Head: Dr. Leonard N. Reid, 216 Journalism Bldg., 542-4791

Courses in this department are designed to give the student an understanding of the theory and practice of mass communication in one of two majors: advertising and public relations. Emphasis is given to the analysis, planning, writing, implementation, and measurement of advertising and public relations programs. The courses listed are in addition to the hours required in the mass communication core curriculum.

ADVERTISING

Major Courses 30

Six 5-hour courses required:

- JRL 310 Principles of Advertising
- 311 Advertising Copy Writing
- 312 Advertising Media
- 313 Advertising Research
- 571 Advertising Decision Making
- 574 Advertising Campaigns

Journalism Electives 15

Three additional journalism courses.

Note: All students admitted to the College who select advertising as their major will be required to complete a course in statistics (STA 200, 221, 421; MS 312-312L; or equivalent) before taking JRL 312 or higher. The credit may be used in the mathematics and natural sciences requirement in the pre-journalism curriculum, in the complementary courses, or in the non-journalism electives.

PUBLIC RELATIONS

Major Courses 30

Three 5-hour courses required:

- JRL 341 News Writing and Reporting
- 352 Graphic Communications
- 385 Public Relations

Two 5-hour courses required:

- JRL 591 Public Relations Administration
- 595 Public Relations Campaigns

One writing course required from the following:

- JRL 311 Advertising Copy Writing
- 383 Basic Writing for Radio-Television-Film
- 388 Basic Broadcast News Writing
- 530 Public Affairs Reporting
- 532 Public Opinion Reporting
- 558 Magazine Article Writing
- 592 Public Relations Communication

Journalism Electives 15

Three additional journalism courses.

Journalism

Head: Dr. Ernest C. Hynds, 233 Journalism Bldg., 542-4668

Courses in this department prepare students for careers with newspapers, press associations, and magazines. Students may major in newspapers, magazines, or publication management; specific journalism electives are suggested for those interested in photo-journalism. The courses listed are in addition to the hours required in the mass communication core curriculum.

NEWSPAPERS

Major Courses 30

Three 5-hour courses required:

- JRL 341 News Writing and Reporting (or JRL 341H Introduction to Writing for Print Media)
- 351 Editing and Makeup
- 530 Public Affairs Reporting

Three 5-hour courses selected from the following:

JRL 361 Beginning Photojournalism
 532 Public Opinion Reporting
 535 Advanced Editing and Makeup
 553 Editorial Writing and Issues
 558 Magazine Article Writing
 560 Investigative Reporting
 567 Contemporary American
 Newspapers

Journalism Electives 15
 Three additional journalism courses.

MAGAZINES

Major Courses 30

Three 5-hour courses required:

JRL 341 News Writing and Reporting
 (or JRL 341H Introduction to
 Writing for Print Media)

351 Editing and Makeup
 558 Magazine Article Writing

Three 5-hour courses selected from the
 following:

JRL 361 Beginning Photojournalism
 530 Public Affairs Reporting
 532 Public Opinion Reporting
 535 Advanced Editing and Makeup
 538 Contemporary American
 Magazines
 553 Editorial Writing and Issues
 559 Critical Writing and Reviewing
 560 Investigative Reporting
 570 Advanced Projects in Magazines

Journalism Electives 15
 Three additional journalism courses.

PUBLICATION MANAGEMENT

Major Courses 30

Three 5-hour courses required:

JRL 341 News Writing and Reporting
 (or JRL 341H Introduction to
 Writing for Print Media)

351 Editing and Makeup
 564 Newspaper Management

Three 5-hour courses selected from the
 following:

JRL 361 Beginning Photojournalism
 310 Principles of Advertising
 311 Advertising Copy Writing
 352 Graphic Communications
 530 Public Affairs Reporting
 532 Public Opinion Reporting
 535 Advanced Editing and Makeup
 567 Contemporary American
 Newspapers

Journalism Electives 15
 Three additional journalism courses.

Students interested in photojournalism are
 encouraged to elect the following three courses:

JRL 361 Beginning Photojournalism
 371 Advanced Photojournalism
 537 Documentary Photojournalism

Telecommunications

Head: Dr. Alison Alexander, 101-E Journal-
 ism Bldg., 542-3785

This department, which offers majors in
 broadcast news and telecommunication arts,
 provides students with professional courses
 of study in both theory and practice of elec-
 tronic media. The courses listed are in addi-
 tion to the hours required in the mass
 communication core curriculum.

BROADCAST NEWS

Major Courses 30

Three 5-hour courses required:

JRL 301 Introduction to
 Telecommunications

384 Basic Techniques for
 Radio and Television
 Production

388 Basic Broadcast News
 Writing

Three 5-hour courses required:

JRL 581 Radio-Television News
 586 Electronic News Gathering
 Production

588 Advanced Radio-Television
 News

Journalism Electives 15

Three 5-hour courses (selected from
 ones such as the following):

JRL 302 Telecommunication Analysis
 Techniques

303 Broadcast Programming
 501 Mass Communications
 Internship

515 Telecommunications
 Announcing

525 Broadcast Management I
 589 Broadcast News Ethics

TELECOMMUNICATION ARTS

Major Courses 25

Four 5-hour courses required:

JRL 301 Introduction to
 Telecommunications

302 Telecommunication Analysis
 Techniques

383 Basic Writing for Radio-
 Television-Film

384 Basic Techniques for Radio and Television Production

One additional 5-hour course selected from the following:

JRL 303 Broadcast Programming

514 Television Production I

515 Telecommunications Announcing

518 Audio Production I

586 Electronic News Gathering Production

599 Seminar in Mass Communication

Journalism Electives 20

A student will select 20 hours to develop, in depth, a program of study. Selection of these courses will not be limited to those offered by the department. By careful selection of courses in this area, in concert with the complementary courses, the student can attain competence in areas of production, writing, or management-sales. Thus a student, with the assistance of an advisor, can develop a unique program suited to individual career objectives.

COURSES OF INSTRUCTION

Journalism (JRL)

Contact: Office of Undergraduate Instruction, 201 Journalism Bldg., 542-4657

301. Introduction to Telecommunications. 5 hours.

Survey of the structure of world telecommunication systems with emphasis on the systems in the United States, the regulatory features of the systems, the impact of technology, the economic dynamics, and the range of career possibilities within these systems (including radio, television, recordings, cable, satellite systems, and computer networks).

302. Telecommunication Analysis Techniques. 5 hours.

Prerequisite: JRL 301 or 310 or permission of department.

Major analysis techniques commonly found in telecommunication research, including methods of quantitative and qualitative message analysis, basic audience research techniques (such as ratings research, audience profiling, and concept

testing), and studies of the impact of production economics. Student participation in both laboratory and field studies may be required.

303. Broadcast Programming. 5 hours.

Prerequisite: JRL 301.

Study of the methods by which radio and television program schedules are developed. Topics considered include ratings, program sources, radio program formats, program automation, the syndication market, public station programming, cable services, and subscription program sources.

310. Principles of Advertising. 5 hours.

A course providing a broad understanding of advertising—how it fits into the economy, how it works, and how it is created.

311. Advertising Copy Writing. 5 hours.

Prerequisite: JRL 310 or MKT 360.

Principles and practices in the presentation of copy for a variety of media. Reader surveys, copy tests, and a study of products in relationship to copy and markets are a part of this course.

312. Advertising Media. 5 hours.

Prerequisite: JRL 310 and a course in statistics (STA 200, 221, 421; MS 312-312L; or equivalent). Development of media plans and schedules to deliver advertising messages to target markets in media audiences. Advertising media vehicles are evaluated in terms of creative requirements, audience characteristics, and cost efficiency.

313. Advertising Research. 5 hours.

Prerequisite: JRL 310 and a course in statistics (STA 200, 221, 421; MS 312-312L; or equivalent). Detailed study of the nature, scope, and application of advertising research techniques in strategic planning, measurement of media audiences, and evaluation of the effectiveness of advertising copy and expenditures. Emphasis on theories of advertising response, objective setting, and measurement of advertising effectiveness.

314. Advertising and Society: An Inquiry into Social Responsibility. 5 hours.

Prerequisite: JRL 310 and permission of department.

Advertising as an institution and its role in communication, society, culture, and our economy. Students develop a framework in which to understand continuing dialogue between supporters and critics and confront issues related to the institution's ethical conduct and social responsibility.

331. Introduction to Print Media. 5 hours.

Structure, operation, responsibilities, and influence of printed mass media from historical and descriptive perspectives. Attention is given to newspapers, magazines, books, news services, and photojournalism and their relations to other mass media, government, and society.

341. News Writing and Reporting. 5 hours. Lectures and lab periods.

Not open to students with credit in JRL 260.

A study of basic reporting, writing, and editing practices with practical assignments in the various media.

341H. Introduction to Writing for Print Media (Honors). 5 hours.

Not open to students with credit in JRL 260 or 261H or 341.

Prerequisite: Honors standing.

Problems in newsgathering and writing for the print media, with special emphasis on legal, ethical, and societal responsibilities.

351. Editing and Makeup. 5 hours. Lectures and lab periods.

Prerequisite: JRL 341.

A practical course in the selection and preparation of written and pictorial materials for newspapers, magazines, and related media.

352. Graphic Communications. 5 hours. Lectures and lab periods.

Prerequisite: Permission of department.

A study of printing processes, typography, photo-engraving, layout and design, production planning, and related topics.

361. Beginning Photojournalism. 5 hours. Lectures and lab periods.

Not open to students with credit in JRL 280.

An introduction to theories and practices of newspaper and magazine photojournalism, as well as photographic communication used in public relations and advertising. Instruction includes the techniques of black and white, available light photography, operations of adjustable cameras, and basic darkroom use.

371. Advanced Photojournalism. 5 hours. Lectures and lab periods.

Prerequisite: JRL 361.

Advanced studies in photo reportage with emphasis on photo editing. Studio photography, artificial lighting, and other advanced techniques are included.

383. Basic Writing for Radio-Television-Film. 5 hours.

Prerequisite: Permission of department.

A study of the problems of writing for the telecommunications industry. Introduction to special scripting requirements of radio, television, film, recording, and cable formats. Emphasis will be upon working from the creation of the idea to final script.

384. Basic Techniques for Radio and Television Production. 5 hours.

Prerequisite: Permission of department.

Basic methods of pre-production, production, and post-production of radio, television, and electronic field production with additional emphasis on the creative, persuasive, and ethical application of these media in today's society.

385. Public Relations. 5 hours.

A study of principles and techniques. Research in interpersonal and mass communications with emphasis on effectiveness and studies among various publics.

388. Basic Broadcast News Writing. 5 hours.

Prerequisite: Permission of department.

The gathering and writing of broadcast news copy under deadline discipline, including the responsibilities and ethics of the broadcast news reporter.

496H, 497H, 498H. Directed Reading and/or Projects. 5 hours each.

These courses afford Honors students of senior division standing the opportunity to engage in individual study, reading, or projects under the direction of a project director.

499H. Honors Thesis. 5 hours.

This course provides opportunity for an Honors student to undertake individual research in the field of his/her major or in a closely related field.

501. Mass Communications Internship. 5 hours.

Prerequisite: Completion of department core requirements or permission of department chairman.

Supervised experience in mass communications.

504. Law of Communication. 5 hours.

Prerequisite: One of the following: JRL 341, 301, 310, or 385.

A broad application of principles of law to the mass communication media, media practice, advertising, and freedom of information, including libel, contempt of court, right of privacy, copyright, and postal laws.

508. International Mass Communication. 5 hours.

A course designed to help students gain an understanding of the mass media of the world—what they are like, how they operate, and what impact they have. Philosophies of different systems will be compared, as well as efforts at development or regulation of these systems. Attention will be given to print and electronic media and to international news agencies.

513. Telecommunication Regulation. 5 hours.

Prerequisite: JRL 301.

A survey of regulatory agencies concerned with telecommunication (radio, television, cable), important regulatory principles from law, regulatory practice, and common law. Emphasis will be upon the regulatory issues faced by the professional in

telecommunication, including the development and use of self-regulatory codes.

514. Television Production I. 5 hours.

Prerequisite: JRL 383 and 384.

Theory and application of visual/aural telecommunication principles to informational messages. Student productions will be prepared, critiqued, and tested.

515. Telecommunications Announcing. 5 hours.

Prerequisite: JRL 384 or permission of department.

Specialized telecommunication performance situations will be created to allow the student to apply appropriate principles. Basic study will involve standard American and foreign pronunciation as well as physical aspects of performance. Course structure will allow the student to devote laboratory time to individual performance and announcing interests. The course is intended for students with experience or demonstrable ability in this area.

516. Television Production II. 5 hours.

Prerequisite: JRL 514.

An advanced study of television directing with special emphasis on the aesthetics of the medium. The student will work in a full-color studio and will utilize the television equipment for a means of communicating effectively with the television medium. Offered Spring Quarter.

517. Advanced Studies in Mass Communication. 1-5 hours. Repeatable for maximum 5 hours credit.

Prerequisite: Senior standing and permission of department.

Independent study or special projects in any area of mass communications for majors in the College of Journalism. Written proposal outlining the work to be undertaken must be submitted and receive the instructor's approval before the student will be permitted to register for the course. Students will be responsible for insuring the funding of their projects.

518. Audio Production I. 5 hours.

Prerequisite: JRL 384.

Theory and application of sound recording in message preparation. Acoustics, microphone selection and placement, editing, and mixing in both studio and field settings will be subjects of discussion and laboratory sessions.

521. Social Effects of Mass Communication. 5 hours.

Prerequisite: Two senior-level courses in psychology, sociology, or speech communication.

The interaction between mass communication and the social institutions of our society—its effects, uses and potential—will be critiqued and analyzed, specifically delving into mass media's effect on children, attitudes and values, minority

groups, and social behavior. Current research literature in the field will be analyzed and methods of improving the system will be discussed.

524. History of Broadcast Programming. 5 hours.

The process by which entertainment and informational communication have developed in telecommunication systems. Viewing and listening to early programs, study of stage, cinema, and folklore productions of the past as well as principal theories of program function will be studied. Offered Winter Quarter.

525. Broadcast Management I. 5 hours.

Prerequisite: JRL 301.

Theory and application of management practices in the administration of telecommunication businesses. Cost and revenue management, use of research, rate setting, capital and operations budgeting, personnel management, and program syndication.

527. Management of New Communications Technologies. 5 hours.

Prerequisite: JRL 301 or permission of department.

A study of the operation and management of new communication technologies, including their history and development, regulation, satellite distribution, production planning, economics, and future of communications technologies.

530. Public Affairs Reporting. 5 hours.

Prerequisite: JRL 341 and 351.

An advanced course in analyzing, interpreting, and reporting governmental affairs at local, state, and national levels. Students cover assignments for student and professional media.

532. Public Opinion Reporting. 5 hours.

Prerequisite: JRL 341 and 351 or permission of department.

An examination of public opinion, its nature and study techniques, propaganda, and media interaction with society, with emphasis upon the measurement of public opinion and interpretation of data. Students will prepare reports of findings for publication in print and broadcast media.

535. Advanced Editing and Makeup. 5 hours. Lectures and lab periods.

Prerequisite: JRL 341 and 351.

A course in the planning and processing of special pages and sections of newspapers and magazines. Consideration is also given to legal and ethical problems and to the effects of technological developments on staff organization, production, and graphic design.

537. Documentary Photojournalism. 5 hours.

Lectures and lab periods.

Prerequisite: JRL 361.

A study of documentary photojournalism, especially social documentary, its history, principal practitioners, techniques, and presentation. Students will photograph and edit their individual documentaries and prepare a group documentary as an audio-visual presentation.

538. Contemporary American Magazines. 5 hours.

A survey of contemporary American magazines and their role in society. Special attention is given to content, policy, influence, responsibility, ethical questions, economics, typography, and technology.

540. Race, Gender, and the Media. 5 hours.

Prerequisite: Junior standing.

Relationship between men, women, and racial and ethnic minorities in the U.S. and the media. Includes discussions of representations in mass media (television, print media, advertising, and film); impact of representations on audiences; inequities in media professions and institutions; and alternative, feminist, and minority media.

541. Journalism Ethics. 5 hours.

Prerequisite: JRL 341.

Issues of journalistic ethics and social responsibility confronting contemporary American print media and students planning journalism careers.

549. History of the Mass Media in the United States. 5 hours.

A survey of the mass media in the United States from the colonial period to the present. Special attention is given to newspapers, magazines, radio, and television and their relationship to the history and development of the nation.

553. Editorial Writing and Issues. 5 hours.

Prerequisite: JRL 341 and 351.

A study of editorial policies, ethics, influence, and techniques. Students analyze, discuss, and write editorials about local, state, and national issues.

558. Magazine Article Writing. 5 hours.

Prerequisite: JRL 341 and 351 or permission of department.

A practical course in writing various types of articles and features for magazines, magazine sections of newspapers, and other periodicals.

559. Critical Writing and Reviewing. 5 hours.

Prerequisite: JRL 341 and 351.

A course in criticizing and reviewing books, plays, television, films, and other arts for newspapers, magazines, and related media.

560. Investigative Reporting. 5 hours.

Prerequisite: JRL 530 or equivalent and senior standing.

Practice in and study of investigative, interpretative, and in-depth reporting for the mass media. Students will develop reporting projects in the

field of public affairs in keeping with their interests and background.

564. Newspaper Management. 5 hours.

A study of the business and editorial management of daily and weekly newspapers, including circulation, advertising, and promotion.

566. Journalism in the Secondary School. 5 hours.

Prerequisite: Permission of department.

A survey of news gathering, news writing, copy reading, typography, and business management, with specific relation to the high school newspaper and school public relations.

567. Contemporary American Newspapers. 5 hours.

A study of the newspaper and its role in America today. Special attention is given to content, policy, influence, responsibility, ethical questions, economics, typography, and technology. Leading papers in various sections are examined closely.

570. Advanced Projects in Magazines. 5 hours.

Prerequisite: JRL 558.

An independent projects course in magazines. Most projects are concerned with the writing of magazine articles, particularly series of articles. Students may select projects related to other phases of magazine production.

571. Advertising Decision Making. 5 hours.

Prerequisite: JRL 311, 312, 313 and a course in statistics (STA 200, 221, 421; MS 312-312L; or equivalent).

Examination of the decision-making process in advertising. Emphasis on determining opportunity, integration of promotion mix, setting objectives, establishing budgets, planning message and media strategies, and measuring effectiveness in advertising.

574. Advertising Campaigns. 5 hours.

Prerequisite or corequisite: JRL 571.

Application of the decision-making process in advertising to project assignments. Emphasis on planning, implementing, and controlling advertising campaigns. Class groups function as advertising agencies.

578. Retail Advertising. 5 hours.

Prerequisite: JRL 310 and 311.

Preparation of advertising for various types of retail advertisers and for the various media used by the retailer.

579. Advanced Advertising Copy. 5 hours.

Prerequisite: Grade of B or better in JRL 311 and permission of department.

A continuation of JRL 311 with greater emphasis on creative writing and designing of advertising for national media. Strong emphasis is on indi-

vidual projects in the form of a professional portfolio of creative efforts.

581. Radio-Television News. 5 hours. Lectures and lab periods.

Prerequisite: JRL 384 and 388.

Techniques of gathering, writing, and broadcasting news on radio and television. Actual reportorial assignments, studio production of both radio and television newscasts, utilization of wire copy, and audio/video taped inserts.

586. Electronic News Gathering Production. 5 hours.

Prerequisite: JRL 383 or 388 and 384.

Production for telecommunication using portable videotape equipment. Students will participate in field exercises involving the shooting and editing of informational messages.

588. Advanced Radio-Television News. 5 hours. Lectures and lab periods.

Prerequisite: JRL 581 and 586.

Advanced methodology in gathering and producing news for radio-television. Students will use portable video and audio recording equipment. Analysis of news sources and problem areas unique to broadcast journalists is emphasized.

589. Broadcast News Ethics. 5 hours.

Language, concepts, and issues of moral philosophy and their application in professional settings, with emphasis on current case studies.

590. Business and Industrial Publications. 5 hours.

Prerequisite: JRL 352 or permission of department.

Study of the purpose, content, appearance, writing, and editing of various types of company, business, and association publications, including internal and external house publications.

591. Public Relations Administration. 5 hours. Prerequisite: JRL 341 and 385 and required second writing course or permission of department.

A study of the operation and objectives of corporate public relations programs using the case study approach. Emphasis is given to relating the management function of decision-making and policy formulation to the communication process.

592. Public Relations Communications. 5 hours. Prerequisite: JRL 341 and 385.

A writing course designed to help the student understand news releases, feature stories, speeches, letters, scripts, cutlines, memoranda and other tools basic to the practice of public relations. Emphasis will be placed on the strategies and techniques behind public relations writing.

595. Public Relations Campaigns. 5 hours.

Prerequisite: JRL 591 or permission of department.

Research, planning, and preparation of an integrated public relations campaign. Campaigns will alternate among business, governmental, institutional, and organizational problems.

599. Seminar in Mass Communication. 5 hours. Repeatable for maximum 10 hours credit.

Prerequisite: Junior or senior standing and permission of department.

A seminar designed to synthesize and integrate many of the theoretical and practical approaches to the study of mass communication, giving opportunity through a variable topics seminar to analyze processes and effects of mass communication and to acquire specialized knowledge of specific mass media modes of presentation and production.

The School of Law

Law Building, 542-7140

Administrative Officers

Edward D. Spurgeon, B.A., J.D., LL.M., *Dean*
Paul M. Kurtz, B.A., J.D., LL.M., *Associate Dean*

Gabriel M. Wilner, A.B., D.P.A., LL.B., LL.M.,
Associate Dean

General Information

PURPOSE

Because its first duty is to prepare men and women for the legal profession, the School of Law stresses excellence in teaching. It seeks to impart to its students a broad understanding of the nature of the legal system and the analytical and other skills necessary for effective participation in the profession. It also seeks to instill in its students a keen sense of professional integrity and an awareness of their responsibility as guardians of the law.

In addition to its emphasis on teaching, the School of Law recognizes its role as a center for scholarly research and service in the law. It seeks to explore the problems of society and to contribute through teaching, research, and service to their resolution. As a part of the University, the School of Law endeavors to contribute in a significant way to the life of the University community and to participate in interdisciplinary efforts to advance learning.

METHOD OF INSTRUCTION

In general, the School operates under the case method of instruction designed to enable students to master the common law and equity as working systems. The student studies actual cases, deducing from them the principles of law involved. This approach tends to develop in the student the power of analysis of legal problems. In addition, however, the study of cases is supplemented by

statutory and textual materials. Instruction is also given in the drafting of legal instruments.

Practical instruction in the preparation and trial of cases is given in clinical programs, involving both simulated situations and actual litigation. Exercises conducted relate to the preparation of pleadings, examination and cross-examination of witnesses, writing of briefs, presentation of arguments to the court and jury, taking of cases from lower courts to appellate courts, and other related subjects.

FACILITIES

The School of Law is housed in a modern complex constructed on the original wooded quadrangle of the University's North Campus. Completed in 1967, the building contains 135,739 square feet of space. In addition to its lecture halls, seminar rooms, and administrative and faculty offices, the law center houses a 500-seat instructional auditorium and federal-style courtroom. Two student lounge areas and 20 student organization offices are provided in the complex.

The law library, with its two-story ceiling and glass wall, is spacious and well-illuminated. The library houses more than 117,000 titles, which places it 22nd among United States law schools. The collection includes a comprehensive listing of material on Anglo-American law as well as an extensive holding in the law of international relations and foreign law.

A law library annex opened in 1981. The structure houses a spacious reading room, shelf space for one-third of the present collection, student journal offices and audiovisual instructional facilities. The library offers the LEXIS and WESTLAW computerized research systems. Dean Rusk Hall, home of the Rusk Center for International and Comparative Law, was opened in 1996. In addition to the Center, Rusk Hall contains faculty offices, library shelving and a technologi-

cally-advanced courtroom, suitable both for teaching and use in moot court activity. Rusk Hall has added 35,000 square feet of space to the Law School facilities.

ACCREDITATION

The School of Law is a member of the Association of American Law Schools and is on the approved list of the American Bar Association and the State Bar of Georgia.

DEGREES OFFERED

The School of Law offers the Juris Doctor and Master of Laws degree. Joint degree programs are also available. Complete information about these degree programs may be found in the Law and Graduate School Bulletins.

Admission to the School of Law

GENERAL REQUIREMENTS

An applicant for admission as a candidate for the degree of Juris Doctor must hold a bachelor's degree from an accredited (as defined in AALS and ABA regulations) college or university. Compliance with minimum standards does not, however, guarantee admission. Acceptable required work connotes more than satisfaction of minimum academic requirements; rather, it represents substantial scholastic attainment. Moreover, suitability of applicants for admission is gauged not only by their undergraduate record, but also by their character and reputation, the nature of their training and experience, and by their demonstrated aptitude for the study of law.

The School of Law does not require a specific pre-legal course of study. The prospective law student is encouraged to seek a broad general education which will tend to develop ability to communicate with others both orally and in writing and impart substantive knowledge of genuine intellectual content. Any subject content, regardless of field, which helps develop clear and systematic thinking, constitutes sound preparation for the study of law.

LAW SCHOOL ADMISSION TEST

Questions relating to the Law School Admission Test, the Law School Data Assembly

Service and application procedures should be addressed to the Admissions Office, School of Law, The University of Georgia, Athens, Georgia 30602.

TRANSFER STUDENTS

The dean may, at his discretion, give full credit for work completed at other law schools. Transfer should be requested only after completion of one year of study, and prior to beginning the second year of study, in order to meet residence requirements for a degree. Transfer requests should be made directly to the Law School Admissions Office.

VISITING STUDENTS

Students in good academic standing at other law schools may be admitted as visiting students to enroll for a summer term or an academic year or semester. Prospective visiting students should contact the Law School Admissions Office for information about admission policies and procedures.

Scholarships, Loans and Student Employment

Law students are eligible for scholarships, grants, loan funds and employment as research assistants through the University and the Law School. Write to the Director of Admissions of the School of Law for further information.

Special Programs

CLINICAL AND WRITING PROGRAMS

Law students attending the University of Georgia may participate in activities which include: three scholarly journals, three clinical programs, Moot Court and Mock Trial competitions, student government, three legal fraternities, and many special interest organizations.

The Georgia Law Review, the *Georgia Journal of International and Comparative Law*, and the *Georgia Journal of Intellectual Property*, edited entirely by students, are nationally circulated publications which provide a forum for articles by professors, judges, attorneys, and students on developments in the legal field.

Practical education in criminal and civil procedure is a benefit of the Prosecutorial Clinic, Legal Aid and Defender Clinic, and Prisoner Legal Assistance Clinic. Under supervision of practicing attorneys, students have the opportunity to develop counseling, investigatory and trial skills. Under Georgia law, certified third-year students are permitted to try cases in the local civil and criminal courts.

The School of Law sponsors teams in numerous national and regional Moot Court competitions and several Mock Trial competitions. Team members are drawn from among outstanding candidates in an annual intramural competition.

Georgia's Student Bar Association is affiliated with the Law Student Division of the American Bar Association. Also included in student government is the Honor Court. Among the many student interest organizations are the Environmental Law Association, Women Law Students Association, Black Law Students Association, and the Georgia Society of International and Comparative Law.

CONTINUING LEGAL EDUCATION

In 1965, the School of Law joined with the State Bar of Georgia and the law schools of Mercer and Emory Universities to establish of the Institute of Continuing Legal Educa-

tion in Georgia. In 1978, the Institute of Continuing Judicial Education was created through the sponsorship of the School of Law and Georgia's Judicial Council. The two institutes, which are housed in Athens, plan and conduct seminars and short courses for judges and attorneys throughout the State of Georgia.

SIBLEY LECTURES

Supported by a private foundation, the John A. Sibley Lectureship in Law brings to Athens outstanding legal scholars who meet with regularly scheduled classes and lecture in their fields of expertise.

Placement

The School of Law offers assistance to every law graduate in securing suitable professional employment. Through the Office of Legal Career Services, the student is offered guidance and counseling in selecting an employment objective. While the state of Georgia continues to attract most Law School graduates, students accept positions in many other regions. Graduates are located throughout the United States and in several foreign countries, serving in judicial clerkships, corporate counsel and government attorney positions, as well as in private practice.

The College of Pharmacy

Pharmacy Building, 542-5278

Administrative Officers

Stuart Feldman, B.S., M.S., Ph.D., *Dean*

George E. Francisco, B.S., Pharm.D.,
Associate Dean

David W. Hawkins, B.S., Pharm. D.,
Assistant Dean

General Information

PURPOSE

The College of Pharmacy provides for the comprehensive academic needs of the profession of pharmacy. The College's baccalaureate and doctor of pharmacy degree programs prepare students for the practice of pharmacy. Its graduate program prepares individuals for professional specialization and careers in teaching and research. The post-graduate educational needs of the profession are met through the College's continuing education and service programs. Faculty research supports all of these programs and contributes to the advancement of the body of pharmaceutical knowledge.

FACILITIES

The College of Pharmacy is housed in the Robert C. Wilson Pharmacy Building located on South Campus of the University of Georgia. Modern classroom, laboratory, and research areas are contained in this building which has served as the home of the College since its completion in 1964. Additional educational sites are maintained on the campus of the Medical College of Georgia in Augusta. The MCG hospitals and clinics provide sites for the clinical training component of the baccalaureate and doctor of pharmacy programs. Additionally, programs are conducted in selected pharmacies state-wide to provide for the experiential application of pharmaceutical knowledge.

ACCREDITATION

The College of Pharmacy is accredited by the American Council on Pharmaceutical Education.

DEGREES OFFERED

The Bachelor of Science in Pharmacy degree (BSPHR) is awarded to students who successfully complete a five year study of prescribed courses. The first two years (pre-Pharmacy) may be completed at any accredited institution of higher education. The Doctor of Pharmacy degree (Pharm.D.) requires 13 quarters of work beyond the pre-pharmacy program. Graduate programs lead to the M.S. and Ph.D. degrees. Complete information about these degrees may be found in the *College of Pharmacy Bulletin*.

GRADUATE STUDY

The Graduate School of the University of Georgia offers the Master of Science and Doctor of Philosophy degrees in various specialty areas of pharmacy. Complete information about these degree programs may be found in the College of Pharmacy and Graduate School Bulletins.

Admission to the College of Pharmacy

To be admitted to the professional degree programs in the College of Pharmacy, a student must complete pre-pharmacy curriculum requirements (outlined below). Applicants to the professional programs must take the Pharmacy College Admission Test (PCAT). The fall quarter test date prior to projected entrance date is preferred. The application deadline is March 1 of each year.

PRE-PHARMACY CORE CURRICULUM

	HOURS
AREA I HUMANITIES/FINE ARTS	20
ENG 101, 102, 105H	10
SPC 108	5
Choose from the following: CLC 120, 121, 150; CML 221, 222, 225H, 226H; ENG 231G, 232G, 233G, 235H, 236H, 237H or intermediate foreign language (at the 100-200 level)	5
AREA II MATHEMATICS AND NATURAL SCIENCES	20
MAT 116*	5
CHM 121, 121L, 122, 122L, 123, 123L	15
AREA III SOCIAL SCIENCES	20
HIS 251 or 252	5
POL 101	5
ECN 106 or 107 (106 preferred)	5

Choose from the following: ANT 102; HIS 111, 121, 122, 251**, 252**;
PSY 101, 258; SOC 105, 111, 160

AREA IV COURSES RELATED TO MAJOR	30
CHM 240, 240L, 241, 241L	10
BIO 103-103L, 104-104L	10
PCS 127-127L, 128-128L	10
BASIC PHYSICAL EDUCATION REQUIREMENT	2

ADDITIONAL INFORMATION

See the *College of Pharmacy Bulletin* and contact the Office of the Dean, College of Pharmacy, The University of Georgia, Athens, Georgia 30602 for additional information regarding degree programs in pharmacy.

*MAT 253 suggested as a substitute if student qualifies.
**The same course cannot be used both to satisfy the history requirement and as a social science elective.

The School of Social Work

Tucker Hall, 542-3364

Administrative Officers

Bonnie L. Yegidis, B.A., M.S.W., Ph.D.,
Dean

James A. Pippin, B.A., B.D., M.S.W.,
Ed.D., *Acting Associate Dean*

Katheryn B. Davis, B.A., M.S.W.,
Director, Undergraduate Program

General Information

The Bachelor of Social Work degree is the first professional social work degree. This program of study prepares the student for beginning professional practice as a social worker. The liberal arts base combined with appropriate professional courses provides the fundamental knowledge and skill needed to assume the role of a beginning practitioner. The appropriate social work value and ethical base necessary for professional practice is also a central part of the curriculum. The student exits the B.S.W. program as a generalist in the field of social services.

PURPOSE

The goal of the School of Social Work is to provide an education designed to prepare the undergraduate student for beginning professional social work practice.

This goal is to be realized through:

- (1) Providing intellectual stimulation for students in a search for knowledge and truths and to aid them in developing problem-solving processes for professional use in helping individuals, families, groups, and communities.
- (2) Helping to develop students' learning and introspective stances which will serve their lifelong learning needs and development of self-awareness.
- (3) Motivating students to develop the capacity to evaluate their own practice,

and to evaluate and use the research findings of others.

- (4) Enabling students to gain knowledge and to develop values and skills appropriate for beginning professional social work practice as a generalist.

CAREER OPPORTUNITIES

Graduates holding a baccalaureate degree in Social Work will be prepared for practice in a wide variety of human service programs. For example: 1) Hospital Social Services; 2) Juvenile Corrections; 3) Programs for the Elderly; 4) Mental Health and Retardation Centers; 5) Child Protective Services. These are but a few of the settings in which social workers provide clients with services including counseling, problem solving, linkage with resources, case management, information, and referral.

FACILITIES

The School of Social Work is located in Tucker Hall on South Campus. Extensive University resources enrich the curriculum of the School of Social Work. Research facilities include the resources of the Computer Center, the Institute of Behavioral Research, and the Social Work Research Center.

ACCREDITATION

The Bachelor of Social Work degree program is accredited by the Council on Social Work Education.

Student Services

ACADEMIC ADVISING

Selection of appropriate courses to meet degree requirements is the responsibility of the student. Certain printed material and the School's academic advising program are

available to assist the student. Students are expected to arrange appointments with their advisors at least quarterly for planning programs of study and course selection.

Each student in the School of Social Work is assigned to a faculty advisor. In addition to assisting students with the selection of an appropriate course of study, advisors assist upper division students in their professional development.

Special Programs

HONORS PROGRAM

Qualified students are encouraged to participate in the University of Georgia Honors Program. Appropriate academic advising is provided for B.S.W. students who are also in the Honors Program.

STUDENT ORGANIZATIONS

The College Social Work Association is the School's official baccalaureate student organization providing B.S.W. students with opportunities to participate in volunteer service and educational presentations, and to interact socially with other social work majors. Meetings are held periodically throughout the academic year.

Degree Offered

The School of Social Work offers the undergraduate degree of Bachelor of Social Work (B.S.W.).

GRADUATE STUDY

The degrees of Master of Social Work (M.S.W.) and Doctor of Philosophy (Ph.D.) are offered by the Graduate School of the University. Refer to the *Graduate School Bulletin* for further information.

Admission to the Upper Division Professional Program

The academic program for students seeking the B.S.W. degree is composed of two parts: (1) lower division enrollment for freshman, sophomore and transfer students preparing for entry into the professional program; (2) an

upper division professional program completed during the junior and senior years.

Lower division enrollment is open to any student meeting regular admission requirements at the University of Georgia. Admission to the upper division professional program occurs at the rising junior level. Students must have satisfactorily completed a minimum of 60 hours (except Basic Physical Education credits) including SW 215 prior to making application for admission to the professional program. A student must make a grade of B or better in SW 215 and have an overall and cumulative GPA of 2.2 or better to be admitted to the professional program. Students receiving less than a B in SW 215 must have an overall and cumulative GPA of 2.5 or above. All applicants must have 50 hours of an advisor-approved human service experience (prior work experience may, in some cases, meet this requirement). In addition, students will be evaluated throughout the program as to their fitness for social work.

Undergraduate Degree Requirements

Students are required to acquaint themselves with general degree requirements applicable to all students of the University as set down in the Academic Information section of this bulletin.

The undergraduate social work curriculum is comprised of three basic parts: ninety-two hours of the curriculum are designated to be taken in core courses including two hours of basic physical education; fifty-five hours are to be taken in social work, and forty-five hours as general electives and specified requirements.

The core includes four areas of study: Humanities and Fine Arts; Math and Natural Sciences; Social Sciences; and Social Work Related. The core curriculum, along with courses in the General Electives and Other Requirements, provide a liberal arts base and thus lay the foundation for development of the knowledge, skills, and values needed in professional practice.

All students shall be required to demonstrate environmental literacy through completion of one or more approved courses. Environmental literacy coursework may be credited in appropriate areas of the core or may be taken as elective credit. The require-

ment may be satisfied by completing one of the following courses: ANT 102, ECL 100-100L, ECL(ANT/IDS) 307, or GGY 200-200L, 410.

The undergraduate social work student is required to have a minimum of 520 clock hours of educationally directed field experience. This experience will give students the opportunity to integrate knowledge and develop skills in a variety of social work practice settings. Undergraduates should be prepared to spend at least one quarter in an off-campus field learning experience. Transfer credit for courses in social work will be evaluated on a case-by-case basis. In no case will courses numbered 300 or above be accepted from institutions which are not accredited by the Council on Social Work Education. No transfer credit will be accepted for SW 352, 353, 491AB, or 491CDE. For further information contact the Office of the Director, Undergraduate Program, School of Social Work, Tucker Hall.

REQUIREMENTS FOR BACHELOR OF SOCIAL WORK DEGREE

	HOURS
AREA I HUMANITIES/FINE ARTS	20
ENG 101, 102	10
Choose from the following: ART 200, 287, 288, 289; CLC 120, 121, 150; CML 221, 222; DAN 201; DRA 200; ENG 231G, 232G, 233G; MUS 202; PHY 100, 102; REL 115, 116; SPC 108; beginning and intermediate Foreign Language courses at the 100-200 level. (Completion or exemption of a foreign language through the fourth quarter is required. Courses in foreign language may be credited under Areas I or IV of the core, or counted as general electives.)	10
AREA II MATHEMATICS AND NATURAL SCIENCES	20
MAT 102, 105, 109, 116, or 253	5
BIO 103-103L, 104-104L*	10
Choose from the following: AST 107-107L, 108-108L, 291; CB 220-220L, 221-221L; CHM 111, 111L, 112, 112L, 121, 121L, 122, 122L; CS 201-201L; GGY 104, 120-120L, 121-121L, 122-122L; GLY 115-115L, 125-125L; MAT 105, 109, 116; PCS 101, 127-127L, 128-128L; PHY 110, 210H	5

AREA III SOCIAL SCIENCES	20
HIS 251 or 252	5
POL 101	5
Choose from the following: ANT 102; ECN 106, 107; GGY 101; HIS 111, 121, 122, 251, 252; PHY 101; PSY 101; SOC 105, 160; SOS 104	10

AREA IV COURSES RELATED TO MAJOR	30
SW 215	5
PSY 101 or 258	5
SOC 105 or 160	5
ECN 106 or 107	5
Choose from the following: Any course from above or ANT 102; CFD 210; CS 201-201L; PHY 101, 205H; STA 200, 221; Foreign Language at the 100-200 level (completion or exemption through the fourth quarter is required)	10

BASIC PHYSICAL EDUCATION REQUIREMENT	2
MAJOR REQUIREMENTS	55
SW 340 Human Behavior and Social Environment	5
SW 352 Methods of Intervention in Social Work Practice I	5
SW 353 Methods of Intervention in Social Work Practice II*	5
SW 432 Research Methods in Social Work	5
SW 470 Social Welfare Policy and Services	5
SW 491AB Seminar in Social Work Practice I, and Practicum in Social Work I	10
SW 491CDE Seminar in Social Work Practice II, Practicum in Social Work II, and Practicum in Social Work III (491CDE are taken as a 15-hour block)	15
SW 490B, SW 575, or other Social Work advised elective courses	5

*All students must complete BIO 104-104L prior to Practice Methods II (SW 353).

GENERAL ELECTIVES AND OTHER REQUIREMENTS*	45
PSY 423	5
African American Studies	5
STA 200 or 421	5
Gender Studies	5
Human Development—CFD 210	5
Electives	20
TOTAL REQUIREMENTS FOR BACHELOR OF SOCIAL WORK DEGREE	192

ACADEMIC STANDARDS

A grade of 2.0 or better must be earned in each major course. Students receiving a grade of less than 2.0 for a major course must retake the course and achieve a satisfactory grade in order for the course to be credited toward graduation.

Students receiving a D (1.0) in SW 491A, B, C, D or E may retake the course once to attempt achievement of 2.0 or better. In the event a 2.0 or better is not achieved upon the student's retaking the course, the student will be dismissed from the professional program. Students receiving an F (0.0) in SW 491A, B, C, D, or E will be automatically dismissed from the professional program. Students may appeal dismissals to the Dean of the School of Social Work.

COURSES OF INSTRUCTION

Social Work (SW)

Contact Person: Katheryn B. Davis,
542-5425

215. Introduction to Social Work and Social Welfare. 5 hours.

This course provides students with a basic framework for understanding: social work as a profession; the settings and services through which social workers provide services; and social welfare as an institution.

*Students who have completed "other requirement" courses as a part of their core may substitute advised electives.

340. Human Behavior and Social Environment. 5 hours.

Prerequisite: SW 215.

This course provides the student with a conceptual framework for viewing human behavior within a social context consistent with the focus of social work practice, i.e., to enhance the social functioning of people as individuals, family members and members of society.

352. Methods of Intervention in Social Work Practice I. 5 hours.

Prerequisite: SW 215 and admission to professional program.

Emphasizes professionalism, generic base, generalist-systems approach, communication skill development, interviewing, and application of theory to practice.

353. Methods of Intervention in Social Work Practice II. 5 hours.

Prerequisite: SW 352 and admission to professional social work program.

Emphasizes work with communities and organizations, groups, case management, and termination and evaluation of action taken.

432. Research Methods in Social Work. 5 hours.

The focus is on research process, research methodology and evaluation of available research in social welfare and social work.

444. The African American Family: Practice and Theory in Social Work. 5 hours.

Prerequisite: One family course, 200 level or above, from SOC or CFD.

Enhancement of the student's awareness and knowledge of African American families. It will focus on various problems and issues which confront African American families both socially and politically— past, present and future.

470. Social Welfare Policy and Services. 5 hours.

This course examines in depth social welfare structures, functions, policies, programs, and costs as an organized societal response to human needs. Emphasis is placed on the process involved in establishing, shaping, and changing social policy.

490B. Social Work Research. 1-10 hours. Repeatable for maximum 10 hours credit.

Readings course for the independent researching of a social welfare program under the direction of a faculty member.

491A. Seminar in Social Work Practice I. 5 hours.

Prerequisite: Professional/senior standing in program and SW 353.

Corequisite: SW 491B.

Knowledge, values, and skills necessary for integrated social work practice.

Social Work

491B. Practicum in Social Work I. 5 hours.

Prerequisite: Professional/senior standing in program and SW 353.

Corequisite: SW 491A.

Beginning practicum designed to enable students to integrate knowledge, values, and skills in relation to individuals, groups, the community and/or organizations which deliver social services.

491C. Seminar in Social Work Practice II. 5 hours.

Prerequisite: SW 491A and 491B.

Corequisite: SW 491D and 491E.

Develops knowledge, values, and skills necessary for integrated practice.

491D. Practicum in Social Work II. 5 hours.

Prerequisite: SW 491A and 491B.

Corequisite: SW 491C and 491E.

Develops integrated practice skills in social work practice.

491E. Practicum in Social Work III. 5 hours.

Prerequisite: SW 491A and 491B and professional/senior standing in social work program.

Corequisite: SW 491C and 491D.

Develops integrated practice skills in social work practice.

496H, 497H, 498H. Directed Reading and/or Projects. 5 hours each.

Prerequisite: SW 215.

Affords Honors students of junior or senior class standing the opportunity to engage in individual study, readings or projects under the direction of a qualified faculty member.

499H. Honors Thesis. 5 hours.

Prerequisite: SW 215.

Affords Honors students the opportunity to undertake individual research in the area of his/her major or a closely related field.

575. Current Issues in Social Work Practice. 5 hours; repeatable for maximum credit of 15 hours.

Prerequisite: SW 215 and 352.

This course is to be in seminar format which will explore a variety of problems and issues in public welfare, specifically drawn from experience and objectives of the students enrolled.

The College of Veterinary Medicine

Veterinary Medicine Building, 542-5728

Administrative Officers

David P. Anderson, B.S., D.V.M., M.S.,
Ph.D., *Dean*

John M. Bowen, D.V.M., Ph.D., *Associate
Dean for Research and Graduate
Affairs*

Dwight B. Coulter, D.V.M., M.S., Ph.D.,
Associate Dean for Academic Affairs

Keith W. Prasse, B.S., M.S., D.V.M.,
Ph.D., *Associate Dean for Services*

Harold E. Snyder, B.S., M.S., *Assistant to
the Dean*

General Information

PURPOSE AND ORGANIZATION

Veterinary medicine is the health profession that applies the principles of the biomedical sciences to health and disease in animals, contributes to many areas of human need through research and, in its practice, has important direct and indirect implications for human health. Its basic concern is the protection and improvement of the health and economic welfare of our nation. Veterinary medicine is a unique combination of medical science, agricultural science, and biological science.

The University of Georgia College of Veterinary Medicine is designed to meet the educational needs of prospective veterinarians from the Southeast. At present, students are accepted from Georgia, South Carolina, and West Virginia through a Southern Regional Education Board agreement. A limited number of students who are residents of other states may also be admitted. Quotas for South Carolina and West Virginia are subject to change by the Southern Regional Education Board each year. Residents of other states will be considered. Interested persons should contact the Office of the Associate Dean for Academic Affairs

for current information. Up to 80 students may be admitted to the four-year curriculum each fall.

The College of Veterinary Medicine also has postgraduate instructional responsibilities, which are described in the separate *College of Veterinary Medicine Bulletin*. Such additional training is necessary to prepare students for careers in teaching, research, and clinical specialties. In addition, a program of continuing education for veterinary practitioners is offered to keep the profession up-to-date on advances in the science and art of veterinary medicine.

Research programs intended to ensure the health of the animal resources of Georgia and to protect the human population from those diseases transmittable from animals to man are conducted in the Veterinary Medical Experiment Station. Studies are conducted on diseases of farm animals, pets, wildlife, poultry, fish, marine life, horses, and laboratory animals. These research programs are an integral part of the training of graduate students.

The College faculty also functions in various service capacities through the facilities of the College's Teaching Hospital and the Veterinary Diagnostic Laboratories, located in Athens and at Tifton, Georgia.

FACILITIES

The College is composed of clinics, offices, laboratories, and classrooms designed to meet the needs of practicing clinicians and students. Facilities for animal surgery, auto-tutorial instruction, a library, a computer-assisted learning center, and a student lounge are available in the College. A wing housing offices with adjacent laboratories, a complete electron microscopy suite, laboratory animal facilities, and laboratories for parasitology, physiology, pharmacology, toxicology, and surgery was occupied in 1973. A 7.1-million dollar teaching hospital, which

opened in the Fall of 1979, more than tripled the College's hospital capacity. Additional space for maintaining animals is available at a veterinary farm and the Poultry Diagnostic Research Center.

Diagnostic Laboratories

Louis E. Newman, *Director, Tifton Lab*
Doris M. Miller-Liebl, *Director, Athens Lab*

The College maintains diagnostic laboratory facilities in Tifton and Athens to assist the veterinarian in diagnosing animal diseases. Funded by the Georgia Department of Agriculture, the laboratories are designed to handle problems concerning large and small domestic animals, as well as laboratory and exotic animals. Laboratory services include pathology, microbiology, toxicology, and serology. Both facilities are staffed by veterinary medical diagnosticians and technicians. Though the labs exist primarily as a service to animal owners through their veterinarians, many diagnostic laboratory cases are utilized by faculty members for instructional purposes. Extension veterinarians meet with citizen groups and practitioners in these facilities to present pertinent information or recent developments to those concerned.

Veterinary Teaching Hospital

Douglas Allen, Jr., *Hospital Director*
Robert L. Gearhart, *Hospital Administrator*

The foremost objective of the Veterinary Teaching Hospital is to provide clinical experience for students. This method of instruction enables the veterinary medical student to familiarize himself or herself with veterinary clinical cases under the supervision of practicing clinicians. The staff is composed of faculty members board certified in various phases of veterinary medicine and surgery, including internal medicine, surgery, radiology, dermatology, ophthalmology, urology, neurology, gastroenterology, oncology, reproduction, equine lameness, food animal and equine medicine and surgery, and herd health management. In addition, the services and hospital facilities are available to the private practitioner on a referral or consultation basis and for the continuing education of practitioners.

ACCREDITATION

The College is officially recognized as an accredited institution by the Council on Education of the American Veterinary Medical Association.

DEGREE OFFERED

The basic professional clinical degree offered by the College is the Doctor of Veterinary Medicine. The College also administers graduate research programs leading to masters and doctoral degrees. Specific information concerning programs at the undergraduate, professional, and graduate levels may be found in the *College of Veterinary Medicine Bulletin* and the *Graduate School Bulletin*, copies of which may be obtained by writing:

Office of the Associate Dean for Academic Affairs	Graduate School Boyd Graduate Studies Research Center
College of Veterinary Medicine	The University of Georgia
The University of Georgia	Athens, Georgia 30602
Athens, Georgia 30602	

Admission to the College of Veterinary Medicine

Specific inquiries about admission policies may be addressed to the Associate Dean for Academic Affairs, College of Veterinary Medicine. The University of Georgia is an equal opportunity employer and does not discriminate on the basis of age, sex, or ethnic origin.

Applications from qualified persons of minority groups are actively encouraged.

REQUIREMENTS FOR ADMISSION

In order for the student entering veterinary medical college to be prepared for the courses, he or she must have acquired certain basic scientific information. Such information is ordinarily obtained in the following undergraduate courses:*

*Information on specific courses and credit hours required can be found in the *College of Veterinary Medicine Bulletin* or in the Admissions Requirements brochure published by the College of Veterinary Medicine.

English
Humanities and social studies
Physics**
Chemistry (inorganic and organic)**
Biology

Although a B.S. is not required, the student should pursue a well-rounded B.S. degree program. The requirements for admission to the College of Veterinary Medicine are based on the premise that the program of training of a veterinarian is a continuous one shared by both the undergraduate colleges and the veterinary medical college. The responsibility of the undergraduate training program is thus not only to provide the prospective student with the technical information and skills necessary to complete the DVM program, but also to help develop a broad background of experience and interest which will make it possible later to achieve a full realization of potential as an individual and a member of society.

PRE-VETERINARY MEDICAL PROGRAM

The required courses for admission to the College of Veterinary Medicine can be completed at any accredited college or in conjunction with studies in any major in the College of Arts and Sciences or College of Agricultural and Environmental Sciences. Either of these options is equally acceptable, and the decision as to which major to declare should be determined by the student's interests and ability.

COMBINED B.S.A.-D.V.M. PROGRAM

The combined B.S.A.-D.V.M. program is available at the University of Georgia. A three-year pre-veterinary student may qualify by completing the required courses of the selected major in the College of Agricultural and Environmental Sciences and utilizing the first year professional veterinary courses in the College of Veterinary Medicine as electives in the B.S.A. degree program. All pre-veterinary students should have an alternative degree program to pursue if they do not gain admission to the College of Veterinary Medicine.

**Must be at the pre-medical sciences level and not a survey course.

APPLICATION

Applicants must complete and return to the appropriate state official an application form, which must be received no later than November 1. Application packets are usually available in August. The application must include one copy of transcripts from each institution of higher education attended by the applicant. To be eligible for consideration, the applicant must be able to complete all required courses by the end of spring term of the academic year in which he or she intends to matriculate. Courses over eight years old may not be considered.

Application is open to legal residents of Georgia, South Carolina, and West Virginia. Applicants must be legal residents at the time of matriculation in the College of Veterinary Medicine. A limited number of students from other states may also be admitted. State officials who may be contacted for application forms and interview dates are:

West Virginia Residents

Director Pre-Veterinary Medicine Programs
Department of Agriculture and Forestry
West Virginia University
Morgantown, West Virginia 36505

South Carolina Residents

Pre-Veterinary Advisor
Department of Animal, Dairy, and
Veterinary Sciences
College of Agricultural Sciences
Clemson University
Clemson, South Carolina 29631

Georgia Residents and at-large Applicants

Associate Dean for Academic Affairs
College of Veterinary Medicine
The University of Georgia
Athens, Georgia 30602

A Veterinary Medical Colleges Application Service (VMCAS) is available for applicants applying to more than one veterinary college.

Eligibility

In order to be considered for admission, applicants must have accumulated a 2.70 grade point average.

No person is eligible for admission who has been excluded or is on probation at any school or college for deficiency in scholarship or because of misconduct. All admissions to the University of Georgia College of Veterinary Medicine are conditioned on the applicant's continued satisfactory academic work between the date of his or her conditional acceptance and actual entry into the

College. A student who gains entrance to the College by misrepresentation will be immediately dismissed.

Graduate Record Examination and Veterinary College Admission Tests.

Each applicant will be required to take the Graduate Record Examination (GRE) and the Veterinary College Admission Test (VCAT). Information about the GRE can be obtained from testing and evaluation centers or graduate school offices of most colleges or universities. Information about the VCAT can be obtained from the Psychological Corporation, 555 Academic Court, San Antonio, TX 78204. Information on the GRE and VCAT is included in the application packets from the college. Scores will be accepted only from tests taken within three years prior to the deadline for receipt of applications.

Notification of Applicant Status

Notification of the action of the College on all applications will be mailed directly to the individuals prior to April 15 of each year. This action will be in the form of (1) conditional acceptance, or (2) not accepted.

Program of Study

Students in the College of Veterinary Medicine follow a four-year program of study. The first three years of the curriculum are designed to integrate a sound knowledge of the basic medical sciences with clinical application. The fourth year of the curriculum is devoted entirely to the application of basic medical sciences to veterinary medical principles and procedures in a clinical situation.

The fourth year is divided into 16 blocks of 15-16 instructional days. Of these 16 blocks, 12 are required and the remaining four blocks may be used for electives and free time. Students must schedule a minimum of 80 quarter credit hours during the four quarters of the fourth year.

Complete course listings and descriptions are available in the *College of Veterinary Medicine Bulletin*, copies of which may be obtained from the Office of the Associate Dean for Academic Affairs, College of Veterinary Medicine. The Veterinary College

Bulletin also provides information on grading standards, dismissal policies, and other regulations for veterinary medical students.

Student Activities

Students are governed by a code of ethical conduct that is administered by the faculty and students. The official student governing body is the student chapter of the American Veterinary Medical Association. Students may also be involved in publication of the *Intra-Vet* newsletter, the *Veterinarius* yearbook, and Alpha Psi and Omega Tau Sigma professional veterinary medical fraternity publications.

COURSES OF INSTRUCTION (UNDERGRADUATE)

(See separate *College of Veterinary Medicine Bulletin* for professional and graduate courses.)

Avian Medicine (AM)

Contact Person: Dr. Richard B. Davis, 542-1904

373. Poultry Health. 5 hours.

Prerequisite: PS 360 and MIB 350-350L.

A study of common infections, parasitic and nutritional diseases of poultry; their causes, diagnosis, prevention, and control. Offered to students majoring in poultry science and others who are qualified. (Offered each Fall quarter.)

Medical Microbiology (MMB)

Contact Person: Dr. Emmett B. Shotts, Jr., 542-5811

311. Veterinary Preventive Medicine. 5 hours.

Prerequisite: VPH 310 and MIB 350-350L.

A service course dealing with the common diseases of livestock, with emphasis on prevention and control through better management and sanitation. (Offered each Spring quarter.)

407-407L. Diseases of Cultured Fish. 5 hours.

Three lectures and two lab periods.

Prerequisite: Permission of department.

A detailed study of diseases associated with the culture of warm water, cold water, and marine fishes. Specific disease entities are covered according to etiology, epidemiology, pathogenesis, diagnosis, prevention, and control. Laboratory sessions will cover laboratory methods utilized in the study of fish diseases.

410-410L. Immunology. 5 hours. Three lectures and two double lab periods.

Prerequisite: MIB 350-350L, BCH (BIO) 310 and permission of department.

Introduction to the mechanism of the immune response, host resistance to infection and serologic testing methods.

422-422L. Pathogenic Bacteriology. 5 hours. Three lectures and two double lab periods.

Not open to students with credit in MIB 422.

Prerequisite: Two courses in microbiology (immunology recommended).

Studies on the morphological, cultural and physiological properties of the important pathogenic bacterial and mycotic agents; their relation to health and disease is emphasized.

439-439L. Diagnostic Microbiology. 5 hours.

Four lectures and four one-hour lab periods.

Prerequisite: MMB 410-410L or MIB(CB) 410 and MMB 422-422L or MIB 422 and permission of department.

A course presenting an application of basic microbiological techniques to the problems associated with the recovery of disease organisms from clinical materials. Emphasis will be placed upon methodology and the problems involved in laboratory isolation and identification.

450-450L. Virology. 5 hours. Three lectures and two double lab periods.

Prerequisite: MIB 350-350L and BCH (BIO) 310.

An introduction to the viruses: classification, replication, methodology, pathogenesis and epidemiology of viral diseases, and viral neoplasia.

480. Environmental Epidemiology. 5 hours.

Prerequisite: Two courses in microbiology.

Application of the basic principles and concepts of epidemiology to the environmental considerations of infectious diseases and chronic illnesses of current public health significance with special emphasis on occupational health.

Physiology and Pharmacology (VPH)

Contact Person: Dr. Frederick N. Thompson, 542-3014

310. Elements of Physiology. 5 hours.

A presentation of the mammalian body as a single functional unit; studies include nervous, muscular, respiratory, circulatory, digestive, renal, endocrine, and reproductive systems.

491. (VPH)PHR Introductory Toxicology. 5 hours.

Prerequisite: BCH 402/602 or 801 and PHR 349 and 350 or VPH 609-609L and 610-610L or equivalent or permission of department.

This course is an overview of basic principles in the field of toxicology. It includes principles of hazard and safety evaluation, dose-response relationships, pharmacokinetics and metabolism of chemicals, basic mechanisms of cellular injury, factors influencing toxicity, specialty areas and governmental regulatory policies.

Veterinary Medicine (VET)

Contact Person: Dr. Dwight B. Coulter, 542-5728

496H. Directed Readings and/or Projects (Honors). 5 hours.

Prerequisite: BCH(BIO) 310.

A directed study in one of the basic sciences in the College of Veterinary Medicine. Includes library and laboratory learning experiences not otherwise available to undergraduate students.

497H. Directed Readings and/or Projects (Honors). 5 hours.

A directed study in one of the basic sciences in the College of Veterinary Medicine. Includes library and laboratory learning experiences not otherwise available to undergraduate students.

499H. Honors Thesis. 5 hours.

Guidance by a faculty member for an honors student in writing an honors thesis.

The Graduate School

Boyd Graduate Studies Building, 542-1787

Administrative Officers

Gordhan L. Patel, A.B., Ph.D., *Dean*
Donald R. Lowe, B.M.E., M.M.E., D.M.A.,
Associate Dean

Marjorie Gordon, B.A., M.A., Ph.D.,
Assistant Dean

Mary Ann Keller, A.B.J., *Director of
Graduate Admissions*

Sherri L. Ledford, B.A., *Graduate Program
Administrator*

General Information

PURPOSE

The Graduate School has primary responsibility for the administration of advanced study in all schools and colleges of the University.

ORGANIZATION

Matters of policy relating to graduate education are determined by the graduate faculty through the graduate council. The graduate faculty consists of faculty members appointed by the president on the basis of scholarly competence (including published research or appropriate creative activities), intellectual leadership, and experience with graduate education. The policies determined by the graduate council are administered by the dean of the Graduate School.

The general degrees Master of Arts and Master of Science are offered in 26 and 35 disciplines, respectively. The Doctor of Philosophy degree is offered in 66 disciplines.

Professional master's degrees are offered in 22 areas. The Specialist in Education degree may be earned in 23 fields. Professional doctoral degrees are offered in education, music, and public administration.

FACILITIES

The Graduate School has access to the resources of the entire University. Of particular value are the University libraries, containing over 3,000,000 books, serials and documents, and many other items including manuscripts, photographs, drawings, and maps. The collections support the curricular and research needs of the campus and are available to library users both on the campus and across the state.

The research program at the Oak Ridge Associated Universities, Oak Ridge, Tennessee, makes available facilities for research problems and thesis writing. Two coastal facilities, the Marine Institute on Sapelo Island and the Skidaway Institute of Oceanography, are available to students and faculty of the University for research and training in marine sciences. The Institute for Behavioral Research encourages a pooling of the expertise of faculty and students from various departments to attack significant social and behavioral problems at both basic and applied levels. The Institute of Higher Education is an instruction, service, and research agency of the University and works closely with other educational agencies and institutions in cooperative programs dealing with planning, development, and evaluation. The Institute of Ecology promotes research in ecology, especially large-scale, system-level studies of major environments such as forested watersheds, wetlands, lakes, rivers, tropical rain forests, and agroecosystems. Additional details are presented in the *Graduate School Bulletin*.

ASSISTANTSHIPS AND SCHOLARSHIPS

A variety of support for graduate students is available in the form of graduate assistantships, teaching assistantships, and research assistantships.

Application blanks and further information may be obtained from the dean of the Graduate School. Applications for University-wide assistantships must be filed in the appropriate department by February 15 of each year; departmental awards may normally be applied for at any time.

Admission

Persons holding a baccalaureate degree from any institution accredited by the proper regional accrediting association are eligible to apply for admission to the Graduate School. Applicants should have ranked in the upper half of their undergraduate class and should have completed the equivalent of an undergraduate major in the field in which they propose to study. Application forms may be obtained from the Office of Graduate Admissions. Applicants for admission must submit two copies of official transcripts from all colleges and universities attended, except the University of Georgia, two official copies of scores on the required entrance test, three letters of recommendation, and a \$30.00 nonrefundable application-processing fee. Materials submitted in support of an application will not be returned.

Applications and supporting credentials from domestic students must be received in the Office of Graduate Admissions by the following deadlines: Fall quarter, August 1; Winter quarter, November 15; Spring quarter, February 15; and Summer quarter, May 1. Applicants are urged to apply as early as possible up to one year in advance of the desired matriculation date. Departments may have earlier application deadlines which take precedence over those established by the Graduate School. Applicants should consult the departments for their specific deadlines. For information concerning deadlines for international applications, refer to the section entitled International Applicants.

Each completed application, with supporting materials, is referred to the department in which the applicant proposes to study, where it is considered by the faculty of that department. No applicant will be admitted without the recommendation of an academic unit. Final approval is given by the dean of the Graduate School.

An applicant is admitted for a specific quarter. Admission is valid only when the person registers for the specified quarter. The applicant, however, may request the

Office of Graduate Admissions to defer his/her registration to another quarter provided that the application has not been on file for longer than six months. If the application has been on file longer than six months, a new application must be submitted.

Applicants may not register unless they have received an official acceptance letter from the Graduate School. Students participating in the Honors Program and those registered in the School of Law may enroll in graduate courses with the approval of their advisors and the dean of the Graduate School.

ENTRANCE TESTS

Entrance test scores appropriate for each application must be sent to the Office of Graduate Admissions directly by the responsible testing agency. All test scores are subject to a five-year time limitation.

Scores on the verbal and quantitative sections of the General Test of the Graduate Record Examinations (GRE) are required for admission as a prospective candidate for most graduate degrees. The Miller Analogies Test (MAT) may be used in lieu of scores on the GRE for admission to most Master of Education and Specialist in Education degree programs. The GMAT is required for applicants seeking admission as prospective candidates for the Master of Business Administration and the Master of Accountancy degrees. Applicants for the Master of Marketing Research degree may submit either the GMAT or the GRE. The Master of Arts and Doctor of Philosophy programs in business administration accept the GMAT or the GRE. The Master of Arts and Doctor of Philosophy programs in economics require the GRE. In all cases, applicants should consult the departments for specific information.

The Graduate Record Examinations and the Graduate Management Admission Test are offered several times a year at numerous testing centers in the United States and abroad. Advance registration is required. Registration forms and detailed information on the availability and character of each examination may be obtained from the Office of Graduate Admissions or by writing to the Educational Testing Service, Princeton, New Jersey 08541. The Miller Analogies Test is given at various colleges and universities as approved by The Psychological Corporation. Residents of Georgia must take

the MAT at a testing center in Georgia. For information concerning the test as given at the University of Georgia, contact the Office of Testing and Evaluation, Clark Howell Hall, 706-542-3183. For information concerning the test as given at other approved testing centers, contact The Psychological Corporation, 555 Academic Court, San Antonio, Texas 78204-2498.

ADDITIONAL INFORMATION

Correspondence concerning admission should be addressed to the Office of Graduate Admissions, The University of Georgia, Athens, Georgia 30602-7402. Inquiries about facilities for advanced study and research, programs of study, and specific departmental requirements should be addressed to the appropriate department. More detailed information is given in the *Graduate School Bulletin*, which may be obtained by writing the Office of Graduate Admissions.

INTERNATIONAL APPLICANTS

Since several months may be required to secure needed information and to process an application from abroad, international applicants are urged to submit application materials as early as possible, but no more than one year in advance. The application and all supporting materials of an international applicant must be received in the Office of Graduate Admissions by the following deadlines: Fall quarter, June 15; Winter quarter, October 15; Spring quarter, January 1; Summer quarter, March 15. Departments may have earlier application deadlines which take precedence over those established by the Graduate School. Applicants should consult the departments for their specific deadlines.

The application must be supported by two official transcripts from all colleges and universities attended, except the University of Georgia, two official copies of test scores on an approved entrance test, a \$30.00 nonrefundable application-processing fee, and three letters of recommendation. Recommendations from teachers who are familiar with higher education programs in the United States are advantageous. Foreign applicants, for whom English is not their native tongue, must submit TOEFL (Test of English as a Foreign Language) scores, in addition to scores on an approved entrance examination.

CLASSIFICATION OF GRADUATE STUDENTS

Only those applicants who are formally admitted to the Graduate School will be eligible to register for graduate courses. At the discretion of individual schools or departments and with the approval of the dean of the Graduate School, applicants may be considered for admission to any one of the following classifications:

(1) *Prospective Candidate for a Degree*. Applicants who meet all requirements for admission to a degree program may apply as prospective candidates for a graduate degree. Applicants must submit the following to the Office of Graduate Admissions: the general application for admission, a \$30 application-processing fee, two official copies of transcripts from each institution attended except the University of Georgia, and two copies of official entrance test scores. Applicants also must submit three letters of recommendation directly to the department to which they are applying, as well as any supplemental information required by the department. Applicants are responsible for contacting the department graduate coordinator for information regarding any special requirements and any supplemental materials which may be needed.

Applicants upon whom some condition has been placed by the major department and/or the Graduate School may be admitted provisionally to a degree program if recommended by the department and approved by the graduate dean. Applicants for the Specialist in Education degree are not eligible for provisional admission.

(2) *Nondegree (ND)*. Applicants who do not intend to pursue a degree but who wish to take courses for professional advancement, licensure, or certification purposes, and who hold a baccalaureate degree or higher degree from a regionally accredited institution, should apply for nondegree status. Applicants must submit the following to the Office of Graduate Admissions: the general application for admission, a \$30 application-processing fee, two official copies of transcripts from the institution which awarded the highest degree, and a statement of purpose. The statement of purpose should be completed in the space provided on the reverse side of the general application. Applicants are responsible for contacting the department

graduate coordinator for information regarding any special requirements or supplemental materials which may be needed.

Nondegree students who are later admitted as prospective degree candidates may apply a maximum of 15 hours of coursework taken in the nondegree status toward a graduate degree program. The inclusion of such coursework on a program of study is subject to approval of the major professor, the department graduate coordinator, and the dean of the Graduate School. Courses taken in the nondegree status may not be included on a program of study for the Specialist in Education degree.

(3) *Graduate Transient (TRANS)*. Transient admission may be granted to students in good standing at regionally accredited graduate schools who wish to enroll for one quarter at the University of Georgia. Applicants requesting this status must submit the following to the Office of Graduate Admissions: the general application for admission, a \$30 application-processing fee, and certification of graduate standing in a regionally accredited institution. Additional information may be required by departments for admission to this classification; therefore, applicants should contact the appropriate department. Students admitted in this classification who later wish to enroll as prospective candidates for a degree must make formal application to the Graduate School.

IRREGULAR STUDENTS

A student registered in the University as an irregular student cannot register for graduate courses. Course work taken in this classification cannot be counted for credit toward any graduate degree.

Combined Degree Programs

The Graduate School offers certain combined degrees with other schools and colleges in the University.

Selected students in the College of Arts and Sciences may be eligible for completion of combined AB and MA or BS and MS programs in a four-year period. Students in the College may also be allowed to complete AB and MBA or BS and MBA programs in five years. Students interested in these de-

gree objectives should contact the University Honors Program.

Certain students in the College of Arts and Sciences or the College of Journalism and Mass Communication may be allowed to complete AB and MBA, or BS and MBA, or ABJ and MBA degrees in five years. Interested students should contact the appropriate school or college and the University Honors Program.

Certain students in the College of Family and Consumer Sciences may be eligible to pursue the combined degrees of BSHE and MBA. In the College of Journalism and Mass Communication, students may be allowed to pursue combined programs leading to the ABJ and MBA degrees. In the Terry College of Business, students may be eligible to pursue combined programs leading to the BBA and MAcc degrees. All of these combined degree programs are designed to be completed in five years.

Students interested in the JD and MBA or JD and MAcc four-year combined degree programs should contact the School of Law and the Terry College of Business.

Selected pharmacy students may enter a combined degree program in which they receive the BS degree in pharmacy at the end of their third professional year and the MS degree in pharmacy at the end of one additional year.

Enrollment in Graduate Courses—Law/Undergraduate Students

Students enrolled in the School of Law, who hold a baccalaureate degree from an accredited university/college and who are in good standing, may enroll in graduate courses with approval of their advisor and the dean of the Graduate School. An approval form may be obtained in the School of Law.

Undergraduate students, participating in the Honors Program and who are in good standing, may register for graduate courses with approval of their advisor and the dean of the Graduate School. An approval form may be obtained in the Honors Program Office.

Undergraduate students, having received prior approval, may enroll for up to ten quarter hours of credit to be included in a graduate program of study if they are within five

hours of completing requirements for the undergraduate degree. They may enroll for five hours of such credit if they are within ten hours of completing degree requirements. This credit must be in 400- or 500-numbered courses which also have 600 or 700 listings. If work in the 400- or 500-numbered courses is satisfactory, credit at the graduate level will be granted after admission and registration in the Graduate School of the University of Georgia. A form to request prior approval may be obtained in the Graduate School.

Course Numbers and Load

Courses numbered 800 and 900, taught by members of the graduate faculty, are advanced graduate courses and seminars that provide educational experiences at the highest level in a graduate student's program of study. Courses numbered 600 are fundamental knowledge courses; those numbered 700, except thesis 730M, are technique and professional courses. Courses numbered 600 and 700 are normally taken early in the graduate student's program of study. Joint undergraduate/graduate courses, numbered 400/600 and 500/700, in which undergraduate and graduate students are mixed, are not normally used to provide the core requirements of a graduate degree program. Such courses may be used as electives and as service courses taken in other departments.

A full course load for a graduate student is 10 hours per quarter during the academic year and 8 hours during the summer session. A student who holds an assistantship that requires from one-third to one-half time service must register for a minimum of ten quarter hours each quarter. A student enrolling for over 17 hours per quarter must receive approval from the Graduate School. Any graduate student using University facilities and/or staff time must register for at least five hours each quarter. A student must be registered for a minimum of five quarter hours of credit the quarter in which degree requirements are completed.

Probation and Dismissal

Students may be dismissed by their department at the end of any quarter if they have not made sufficient academic progress to warrant continuance of study. Termination of

students will follow policies and procedures adopted by the department. Dismissal by an academic department may be appealed to the dean of the Graduate School after all avenues of appeal have been exhausted at the departmental level. When students are terminated by a department, but not simultaneously by the Graduate School, they may apply for admission to another graduate program if they wish to do so.

Students with a cumulative graduate course average below 3.0 for two consecutive quarters are placed on academic probation by the Graduate School. They then must make a 3.0 or higher quarterly graduate average each succeeding quarter that their overall cumulative graduate average is below 3.0. These students are no longer on probation when their cumulative graduate average is 3.0 or above. If they make below a 3.0 quarterly graduate average while on probation, they are dismissed. When students repeat a graduate course, the last grade will be utilized to calculate the cumulative graduate average that is used for probation and dismissal. Grades of S, U, I, and V will not be used in calculating the cumulative graduate average. When students are dismissed under the terms of this policy, they may not apply for admission to another graduate program offered by the University. Students who are dismissed by the Graduate School for academic reasons may appeal the dismissal to the dean of the Graduate School. The appeal must be submitted within 10 working days following receipt of notice of dismissal. Information concerning the appeal process may be obtained in the Graduate School.

Degrees Offered

The degrees offered by the Graduate School are listed below. For specific requirements see the *Graduate School Bulletin*.

GENERAL DEGREES

Master of Arts

The Master of Arts degree will be conferred upon candidates who have met prescribed requirements, with major study in one of the following fields: anthropology, art history, business administration, classics, comparative literature, economics, education, English, French, geography, German, Greek,

history, journalism, Latin, linguistics, mathematics, mathematics non-thesis, music, philosophy, political science, religion, Romance languages, sociology, Spanish, and speech communication.

Master of Science

The Master of Science degree will be conferred upon candidates who have met prescribed requirements, with major study in one of the following fields: agricultural economics; agricultural engineering; agronomy; anatomy (veterinary); animal science; artificial intelligence; biochemistry and molecular biology; botany; cellular biology; chemistry; child and family development; computer science; conservation ecology and sustainable development; dairy science; entomology; food science; foods and nutrition; forest resources; genetics; geology; horticulture; housing and consumer economics; medical microbiology; microbiology; pharmacology (veterinary); pharmacy; physics; physiology (veterinary); plant pathology; poultry science; psychology; statistics; textiles, merchandising and interiors; veterinary parasitology; and veterinary pathology.

Doctor of Philosophy

The University established this degree for the purpose of providing properly qualified students with the opportunity to pursue research and other scholarly activity beyond the point that is possible in programs for the master's degree. At present, opportunity for such advanced graduate work is provided in adult education, agricultural economics, agronomy, animal and dairy science, animal nutrition, anthropology, art, biochemistry and molecular biology, biological and agricultural engineering, botany, business administration, cellular biology, chemistry, child and family development, communication sciences and disorders, comparative literature, counseling and student personnel services, counseling psychology, drama, ecology, economics, educational psychology, English, entomology, exercise science, food science, foods and nutrition, forest resources, genetics, geography, geology, health promotion and behavior, higher education, history, horticulture, housing and consumer economics, instructional technology, language education, linguistics, mass communication, mathematics, mathematics education, medical microbiology, microbiol-

ogy, middle school education, music, pharmacology (veterinary), pharmacy, philosophy, physical education, physics, physiology (veterinary), plant pathology, political science, poultry science, psychology, reading education, Romance languages, science education, social science education, social work, sociology, special education, speech communication, statistics, textile sciences, veterinary parasitology, and veterinary pathology.

This degree will not be granted upon the completion of any definite amount of work prescribed in advance. It will be granted in recognition of proficiency in research, breadth and soundness of scholarship, and thorough acquaintance with a specific field of knowledge. Evidence of such attainment must be provided through the presentation of an acceptable dissertation based upon independent research and passing of such written and oral examinations as may be prescribed.

PROFESSIONAL DEGREES

Master of Accountancy

This degree program prepares students for professional careers in public accounting or for executive positions in private accounting. It is open to students who hold a Bachelor of Business Administration degree or its equivalent.

Master of Agricultural Economics

This degree is designed for students who wish to acquire specialized training in agribusiness. The 64-hour program blends business and economics with the applied science of agriculture, providing methods for solving real-world problems. An internship and technical report are required in lieu of a thesis.

Master of Agricultural Extension

This degree is designed especially for county agricultural extension workers, agricultural educators, and other continuing education professionals engaged in informal educational settings. In addition to the general Graduate School requirements, one year of field experience in agricultural extension, or its equivalent, is required.

Master of Applied Mathematical Science

The Master of Applied Mathematical Science is a terminal degree program designed for students who seek a broad training in

applied quantitative methods as preparation for professional employment in business, government, or industry. For such students, this program will provide a structure that blends various applied mathematical sciences with particular reference to their application to real-world problems.

Master of Art Education

This program is designed to improve the professional competency of teachers and supervisors of art.

Master of Arts for Teachers

Programs leading to the Master of Arts for Teachers degree are designed to prepare teachers for employment in secondary schools and junior colleges. The degree may be earned in English, French, German, Romance languages, and Spanish.

Master of Avian Medicine

This degree is designed to provide veterinarians with specialized training in the diagnosis, treatment, and prevention of poultry diseases.

Master of Business Administration

This program is designed for the student who desires sound training beyond the baccalaureate degree as preparation for a career in business.

Master of Education

This degree is designed for the student whose vocational objectives require preparation for teaching, supervision, and/or first line administration in grades P-12 and other educational or professional agencies. The Master of Education degree may be obtained in the following areas: adult education, agricultural education, business education, communication sciences and disorders, computer-based education, early childhood education, educational leadership, educational psychology, elementary education, English education, exercise science, foreign language education, guidance and counseling, health promotion and behavior, home economics education, instructional technology, marketing education, mathematics education, middle school education, occupational studies, physical education, reading education, recreation and leisure studies, rehabilitation counseling, safety education, science education, social science education, special education, speech education, student per-

sonnel in higher education, and technological studies.

Master of Fine Arts

This program is for students in the creative and performing arts whose professional objectives require advanced skills in art and drama.

Master of Forest Resources

This is a professional program designed to be a terminal degree program for forest resources managers.

Master of Historic Preservation

This program is designed to prepare students for a wide range of careers in the conservation and management of historic resources in both the built and natural environments.

Master of Home Economics

This program prepares students for professional careers in home economics and related professions. This degree may be earned in the areas of child and family development and foods and nutrition.

Master of Landscape Architecture

This program provides advanced training for landscape architects and graduates in related fields.

Master of Laws

The LL.M. program is essentially a fourth year of J.D. studies, affording an opportunity for further study in fields not fully covered in undergraduate law work.

Master of Marketing Research

This degree program is designed to develop marketing research professionals with a solid understanding of business and marketing analyses. The program of study includes 60 quarter hours of graduate work, including two quarters of internship, and begins each June. Students without prior business courses must complete foundation courses before entering the program.

Master of Mass Communication

This program serves those students whose career goals indicate that additional course work will be more advantageous to them than the completion of the traditional thesis required in the Master of Arts. The additional course work provides an opportunity for more

breadth and depth of exposure to areas which may lay the foundations of career development, whether in additional mass communication courses or in cognate courses that tie into professional goals.

Master of Music

This degree offers major concentrations in performance, choral conducting, woodwinds, composition, and music literature.

Master of Music Education

This program prepares students for professional careers in teaching or supervising school music or in music therapy.

Master of Plant Protection and Pest Management

This program is designed to produce graduates with comprehensive, multi-disciplinary training in plant pathology, entomology, and weed science for employment by industrial, extension, and regulatory agencies.

Master of Public Administration

Advanced professional training for graduates who plan to work in public administration is provided by this program.

Master of Social Work

This program emphasizes both clinical social work practice and community social policy.

Specialist in Education

This degree is planned for the student who seeks advanced specialized training in a selected area in order to improve teaching, supervisory, and/or administrative skills.

The program for the Specialist in Education degree shall consist of a minimum of 45 quarter hours of study at the graduate level beyond the master's degree. The Specialist in Education degree may be obtained in the following areas: adult education, art education, communication sciences and disorders, early childhood education, educational leadership, educational psychology, elementary education, English education, foreign language education, guidance and counseling, instructional technology, mathematics education, middle school education, music education, occupational studies, physical education, reading education, safety education, school psychology, science education, social science education, special education, and speech education.

Doctor of Education

This degree provides advanced professional training for careers in teaching, administration, and other educational services. At the present time, the degree is offered in the following fields of education: adult education, art education, counseling and student personnel services, early childhood education, education of gifted, educational leadership, educational psychology, elementary education, exercise science, higher education, instructional technology, language education, mathematics education, music education, occupational studies, physical education, reading education, recreation and leisure studies, science education, special education, and social science education. Specialization in research skills and in subject fields appropriate to the public schools, higher education, and other educational and/or helping agencies is provided.

Doctor of Musical Arts

The program of study leading to the Doctor of Musical Arts degree provides advanced professional, academic, and research preparation for music careers in teaching, performing, composing, and conducting. Major concentrations are offered in music education, performance, composition, and choral conducting. The School of Music should be contacted regarding applied music options available within the performance and conducting areas.

Doctor of Public Administration

The objective of the program is to provide doctoral-level training for several client groups. First, the program will prepare students to serve in executive or upper managerial levels in local, state, and federal jurisdictions. Second, the program will prepare students for a variety of institutional settings that have significant interfaces with public agencies. These include various institutes, private planning agencies, and consulting organizations. Third, the program will help prepare individuals for specialized research and teaching careers.

PROGRAM FOR TEACHER CERTIFICATION

For Majors in Education

The Georgia State Board of Education is the agency which awards professional certificates. The College of Education has been

approved to offer graduate programs designed to qualify students for fifth-year, sixth-year, and seventh-year professional certificates.

For other details and requirements see the *Graduate School Bulletin*.

For Majors in Fields Other Than Education

Candidates for degrees in fields other than education may meet the requirements for a teaching certificate at the fifth-year level. For requirements see the *Graduate School Bulletin*.

GRADUATE CERTIFICATE PROGRAMS

Conservation Ecology and Sustainable Development

The University offers a certificate in conservation ecology and sustainable development through the Institute of Ecology. Any graduate student in a natural science or a social science degree program at the University is eligible to apply. For information, contact Dr. C. Ronald Carroll, Institute of Ecology, Ecology Building (706) 542-2958.

Environmental Ethics

The University of Georgia has a Faculty of Environmental Ethics which offers a certificate program at the graduate level. The certificate program contains a variety of courses devoted partially or entirely to issues of value and the environment. For information, contact Dr. Peter Hartel, Department of Crop and Soil Sciences, (706) 542-0898.

Gerontology

The University awards a Certificate in Gerontology to graduate students meeting certain requirements. For information concerning this program, contact Dr. Leonard W. Poon, Director, Gerontology Center, Candler Hall, (706) 542-3954.

Global Policy Studies

The University awards a Certificate in Global Policy Studies to graduate students meeting certain requirements. Students may earn the certificate as a supplement to a regular degree program. For information, contact Dr. William O. Chittick, Director, Center for the Study of Global Issues, Baldwin Hall, (706) 542-5747.

Historic Preservation Studies

The University awards a Certificate in Historic Preservation Studies to graduate students meeting certain requirements. Students are required to complete 30 hours of credit, which includes 15 hours of certificate core requirements with the remaining 15 hours to be selected from the historic preservation curriculum. For additional information contact Professor John C. Waters, Coordinator of Graduate Studies in Historic Preservation, School of Environmental Design, Caldwell Hall, (706) 542-4706.

Marriage and Family Therapy

The University awards a Pre-Professional Certificate in Marriage and Family Therapy to graduate students meeting certain requirements. For information contact the Coordinator of this certificate program, Dr. Jerry E. Gale, Child and Family Development, Dawson Hall, (706) 542-2650.

Women's Studies

A 25-hour graduate certificate in women's studies is available to those students who either hold a graduate degree or are pursuing one at the University. The purpose of the certificate is to expose students to the rapidly expanding interdisciplinary scholarship on women. For information concerning the certificate program, contact Dr. Patricia Del Rey, Director of Women's Studies, Room 230K Main Library, (706) 542-2846.

Division of Academic Assistance

Interim Director: Dr. Gerald R. Firth, 542-5436 Milledge Hall

The Division of Academic Assistance offers educational opportunities for students to develop academic competencies to enhance their probability of success in higher education. The Division provides educational experiences in reading and study strategies, English, mathematics, and group experiences in academic success strategies and educational planning. The educational and counseling programs allow students to begin at their own ability levels and continue at their own learning rates within the time limits established by the University.

Student Placement

All entering freshman students are required to take University placement tests. Performance on University placement tests determines students' placements in Academic Assistance courses, introductory core courses, or advanced level courses. Entering freshman students whose SAT scores are below 350V and/or 350M and whose scores on the Collegiate Placement Examinations are below 75 are classified as Developmental Studies students. Students who are not required to take Academic Assistance courses may elect to take or audit any Academic Assistance course.

Students who are required to complete Academic Assistance courses advance to degree-credit courses by achieving a C grade or above in ACA 097 or 098 level courses. Students classified as Developmental Studies students must fulfill the above grade criteria and also achieve a score of 75 or above on the appropriate Collegiate Placement Examination(s). Students who are required to take academic assistance courses are allowed three attempts to complete a program area (English, mathematics, reading, and counseling). If after three attempts in any program area students have not met

the criteria for completion, they are suspended from the University.

Academic Assistance Curriculum

Based upon performance on University placement tests, students may be required to take Academic Assistance courses in some or all program areas: English, mathematics, reading, and counseling. Academic Assistance courses carry institutional credit which does not count toward graduation. Students who are mandated to take courses from only one or two program areas may take courses from the University curriculum which do not require the content or skills of the mandated Academic Assistance course(s).

ENGLISH PROGRAM

The objective of the English program is to prepare students for the kinds of writing required in English 101 and other University courses. To meet that objective, Academic Assistance English courses stress invention strategies for generating ideas and improving writing fluency, conventions of academic usage and style, patterns for organizing thought and arranging written material, and critical thinking and analysis. In the classroom and in individualized instruction, students receive extensive practice drafting, editing, and revising expository and persuasive essays. Academic Assistance English courses include ACA 096E-097E and 098E.

MATHEMATICS PROGRAM

The goals of the mathematics program are to develop and strengthen the mathematics skills of students so that they can be successful in their entry-level mathematics courses and other courses requiring elementary mathematics reasoning; and to develop

and strengthen the thinking, reasoning, problem-solving skills, and study strategies of students. The program offers mathematics courses in elementary and intermediate algebra. Academic Assistance mathematics courses include ACA 096M-097M and 098M.

ACADEMIC STUDYING AND READING

The goal of the reading program is to encourage autonomous learning by increasing reading proficiency and by teaching students reading and study strategies prerequisite for success in University courses. Instruction and practice are given in reading comprehension, general study strategies, vocabulary development, and test preparation techniques. Instruction is linked to University reading demands, and courses incorporate applications to university-level texts, novels, and supplementary materials. Academic Assistance reading courses include ACA 096R-097R and 098R.

COUNSELING PROGRAM

The goal of the counseling program is to promote the development of personal, social, and career exploration skills which facilitate success and achievement in a university setting. Each academic term the program offers a series of Academic Assistance Workshops, each of which is devoted to one specific topic (e.g., learning styles). The program also offers Academic Assistance courses that are designed to provide students with a better understanding of their personal abilities, interests, and competencies and to ascertain how these aspects of one's self can enhance or hinder academic performance.

LEARNING LABORATORIES

A learning laboratory associated with each of the program areas provides individual and small group academic assistance. Laboratory personnel offer assistance in writing, mathematics, reading, and study strategies. Counseling personnel offer individual and small group experiences in a variety of developmental areas.

University Tutorial

The University Tutorial Services provides one-to-one or small group tutorial assistance to all students free of charge. Trained undergraduate peer tutors offer assistance in many undergraduate level core courses, including mathematics, chemistry, biology, physics, English, Spanish, French, German, and statistics. Sessions are by appointment. Students are allowed two sessions per week per subject.

Study Strategy Courses

UNV 102. Learning to Learn. 3 Institutional Hours (Non-Degree).

This course focuses on teaching students how to be efficient and effective learners. Students learn a variety of test preparation and study strategies which they apply to college level materials. Strategies are designed to help students become autonomous, self-directed learners.

UNV 103. Strategies for Academic Success. 2 Institutional Hours (Non-Degree).

"Strategies for Academic Success" provides students an opportunity to receive information and to develop skills necessary for academic success. The course focuses upon affective dimensions of performance. Content is presented in both lecture and experiential formats.

UNV 201. Introduction to the Research Paper. 3 Institutional Hours (Non-Degree).

Prerequisite: ENG 102.

Basics of writing the academic research paper; using resources of the University libraries, gathering sources, taking notes, avoiding plagiarism, documenting sources, organizing the paper, and creating a style and voice suitable to audience and purpose. Student access to the ACA Writing Lab for further support.

Division of the Armed Services

The Division of the Armed Services consists of the Department of Military Science and the Department of Aerospace Studies.

The Reserve Officer Training Corps programs are designed to develop leadership qualities and to give students an understanding of the Armed Forces and how they support the national policies and interests of the United States. In particular, ROTC programs are charged with the mission of commissioning second lieutenants who have the qualities, attributes, and educational credentials essential for service as junior officers in the Army or Air Force.

Department of Aerospace Studies (AIR)

Air Force ROTC offers male and female students a course of study designed to complement their individual academic major. Aerospace studies courses are available to all UGA students. Upper division courses, AIR 300 and AIR 400 series, require permission of the department. Students enrolled in the program represent a broad cross section of the UGA student body. Enrollment in either the two-year or the four-year program offers each student an additional future career option. The student has an opportunity to explore and evaluate Air Force career opportunities while earning a college degree. Completion of the AFROTC curriculum is the initial step in the education of the professional officer and provides a firm understanding of aerospace concepts, the Air Force mission, organization, and operation. Students who complete officer candidacy requirements are commissioned when they receive a bachelor's degree. Newly commissioned officers may be granted a delay in entering active duty for the purpose of seeking advanced degrees.

GENERAL PROGRAM (GMC AND POC)

The Air Force ROTC program consists of two phases: the general military course (GMC) and the professional officer course (POC); each phase requires six quarters of study on campus. The GMC course materials deal primarily with the various Air Force organizations and their missions, as well as the history of the Air Force. GMC courses meet for two hours each week. The POC materials emphasize student involvement in learning and practicing management and leadership techniques; the senior year course also deals extensively with the political, economic and social factors relating to the formulation and implementation of national security policy. Communicative skills are stressed throughout the entire AFROTC curriculum. The junior and senior cadets meet for four hours each week. Completion of the GMC is normally required as a prerequisite to entering the POC. Transfer students and other students unable to participate in the on-campus GMC may substitute a six-week field training period for this requirement. Veterans can be awarded full credit for the freshman and sophomore courses based on their active military experience. Application for the six-week field training session must be accomplished by March 1 preceding the Fall quarter in which the student becomes a junior.

Air Force ROTC field training is offered during the summer months at selected Air Force bases throughout the United States. Students in the four-year program participate in four weeks of field training, usually between their sophomore and junior years. Students applying for entry into the two-year program must successfully complete six weeks of field training prior to enrollment in the Professional Officer Course. The major areas of study in the four-week field training program include junior officer training, air-

craft orientation, career orientation, survival training, base functions and Air Force environment, and physical training. The major areas of study included in the six-week field training program are essentially the same as those conducted at four-week Field Training and in the General Military Course including Leadership Laboratory.

WOMEN CADETS

Air Force ROTC offers its full range of programs to women cadets. Women cadets are eligible to compete for AFROTC college scholarships, and they receive the same benefits as their male counterparts. A commission as an officer (second lieutenant) is tendered at the time the University grants the bachelor's degree to those completing the POC.

PLACEMENT CREDIT

Students who have completed ROTC courses in essentially military preparatory schools or junior colleges may be given appropriate credit. Students who have taken high school ROTC should contact the professor of aerospace studies for placement. Individuals with prior service may also be given placement credit.

SELECTION FOR THE PROFESSIONAL OFFICER COURSE (POC)

Selection for the POC is based on interest in the Air Force together with achievement records of academic ability, observed leadership traits, and the results of a mental officer qualification test and physical examination.

PAY

When attending either field training course, students are furnished transportation or payment for travel plus pay at the current rate of approximately \$375 per month. They are furnished all uniforms and receive free medical and dental care while at field training. A nontaxable allowance of \$150 per month during two academic years is paid to all POC cadets. This fee is in addition to any other scholarship benefits held by students.

SCHOLARSHIPS

The College Scholarship Program (CSP) is available to selected four, three and a half, three, and two-year students participating in AFROTC programs. This scholarship consists of payment of tuition fees, book reimbursement allowance and the monthly allowance of \$150 mentioned above, for each scholarship year. Scholarship consideration is predicated on student ability, performance and potential.

FLIGHT SCREENING PROGRAM

Pilot candidates will attend a US Air Force-sponsored Light Aircraft Training Program, normally between their junior and senior years, at a centralized training site. This program consists of approximately 21 hours of dual flying and 30 minutes solo flying time in a light single-engine aircraft.

The purpose of the Light Aircraft Training Program is to screen those pilot candidates who have the necessary aptitude and attitude for formal USAF undergraduate pilot training. Pilot candidates possessing a private pilot's license do not attend this course.

LEADERSHIP LABORATORY

Leadership Laboratory is taken an average of two hours per week throughout the student's enrollment in AFROTC. Instruction is conducted within the framework of an organized cadet corps with a progression of experiences designed to develop each student's leadership potential. Leadership Laboratory involves a study of Air Force customs and courtesies; drill and ceremonies; career opportunities in the Air Force; and the life and work of an Air Force junior officer. Students develop their leadership potential in a practical, supervised laboratory, which typically includes field trips to Air Force installations.

STUDENT OBLIGATIONS

When entering the professional officer course, a student must have at least two full academic years remaining to complete his/her college requirements for an undergraduate or graduate degree or a combination of the two. Each POC student is required to enlist in the Air Force Reserve and to execute a written contract with the govern-

ment. This contract requires a student to complete the POC and to accept a commission as a second lieutenant if tendered.

AIR FORCE ROTC UNIFORMS

A uniform will be issued at no charge to all AFROTC students taking Aerospace Studies classes. After uniform issue, if Aerospace Studies classes are dropped prior to commissioning, uniforms must be returned. Upon commissioning, students may purchase their uniforms for 50% of cost.

COURSES OF INSTRUCTION

Aerospace Studies (AIR)

Contact Person: Captain Steve Grant,
542-1751

General Military Course

101. The Air Force Today I. 2 hours.

This course deals with the Air Force in the contemporary world through a study of the total force structure, strategic offensive and defensive forces, general purpose forces, and aerospace support forces. Leadership laboratory activities are included.

102. The Air Force Today II. 2 hours.

Prerequisite: AIR 101 or permission of department.

A study of the tactical air forces and operations, counterinsurgency and special operations, and aerospace support forces. Leadership laboratory activities are included.

103. The Air Force Today III. 2 hours.

Prerequisite: AIR 102 or permission of department.

A study of aerospace defensive forces including manned aircraft and missile defensive forces. Introduction to Army, Navy and Marine general purpose forces. Leadership laboratory activities are included.

201. The Development of Air Power I. 2 hours.

Prerequisite: AIR 103 or permission of department.

This course includes the study of the development of air power from balloons and dirigibles up to the second World War. Leadership laboratory activities are included.

202. The Development of Air Power II. 2 hours.

Prerequisite: AIR 201 or permission of department.

This course continues the study of the development of air power from the second World War through the Korean War. Students gain an understanding of the use of air power and the technological changes occurring during this period. Leadership laboratory activities are included.

203. The Development of Air Power III. 2 hours.

Prerequisite: AIR 202 or permission of department.

This course continues with the study of air power following the Korean War. It deals with the peaceful employment of U.S. air power in relief missions and civic action programs and the air war in Southeast Asia. Leadership laboratory activities are included.

Professional Officer Course (Advanced)

Enrollment in the Professional Officer Course requires completion of all AIR 100 and AIR 200 level courses or approved substitutes. Cadets must be mentally and physically qualified and have approval of the Professor of Aerospace Studies.

301. Defense Management and Administration I. 3 hours.

Prerequisite: AIR 203.

An integrated management course emphasizing the individual as a manager in an Air Force environment. The individual motivation and behavioral processes, leadership, communication and group dynamics are covered to provide a foundation for the development of the junior officer's professional skills as an Air Force officer. The basic managerial processes involving decision-making, utilization of analytic aids in planning, organizing, and controlling in a changing environment are emphasized as necessary professional concepts.

302. Defense Management and Administration II. 3 hours.

Prerequisite: AIR 301 or permission of department.

Examination of the managerial and leadership problems found in industry and government. Actual Air Force cases developed for classroom use are used to enhance the learning and communication process.

303. Defense Management and Administration III. 3 hours.

Prerequisite: AIR 302 or permission of department.

Organizational and personal values, management of forces in change, managerial strategy and tactics. A great deal of time is allowed for applying earlier learned theories to potential problems the new officer may encounter. Additional emphasis is placed on elements one should consider in developing a realistic career plan. Communication skills are once again stressed.

401. National Security Forces in Contemporary American Society I. 3 hours.

Prerequisite: AIR 303 or permission of department.

A study of the evolution and formulation of American national security policy, especially as it concerns the military instrument of national power. The course also examines selected regional security issues. Each student will participate in group discussions and seminars. An oral presentation and term paper are required.

402. National Security Forces in Contemporary American Society II. 3 hours.

Prerequisite: AIR 401 or permission of department.

Impact of technological and international developments on strategic preparedness; nuclear, limited, and low-intensity conflicts; and arms control and peacekeeping. Simulations are used to illustrate current political issues and problems. Further study examines the military officer's role in national security.

403. National Security Forces in Contemporary American Society III. 3 hours.

Prerequisite: AIR 401 and 402, or permission of department.

Role of the professional military officer in carrying out national policy; traditional and contemporary aspects of military professionalism; and professional relationships and ethics. The military legal system is introduced. The course finalizes the student's preparation for commissioning and active duty Air Force service.

Army ROTC Department of Military Science (MIL)

The Army ROTC program at the University of Georgia has been commissioning officers in Athens for more than seventy years. It's a long, proud tradition which we are continuing. Currently, more than 150 students are enrolled in Army ROTC at the University.

Army ROTC provides college men and women an opportunity to receive training in basic military skills. Through study and application of the principles of leadership and management, the Army ROTC student de-

velops self-discipline, self-confidence, and leadership skills that will contribute to success in any career.

The Army has a career field to match a student's education and interests with no restrictions on the major field of study or discipline. Army ROTC classes are unique in the college curriculum in offering both instruction and the opportunity to develop leadership. The student who takes Army ROTC may enter after graduation such diverse fields as aviation, engineering, law enforcement, medical services, combat command, communications, finance, management, personnel administration, transportation, and research and development.

BASIC COURSE

The Basic Course is taken during the freshman and sophomore years. The courses cover military skills. There is no military commitment for taking a Basic Course class. The Basic Course of six quarters duration consists of one hour of classroom work and one hour of leadership laboratory per week. Classes are taken in conjunction with the standard classes a student schedules each quarter. The leadership laboratories are often conducted outdoors and may include field trips. In the classroom the student acquires knowledge of basic military skills, military organization, weapons, tactics, history and customs, first aid, foreign doctrines, and basic management techniques. In the field, leadership skills are progressively developed through experience and exposure to leadership situations. Equally important, these courses have the objective of developing the student's leadership, self-discipline, integrity, and sense of responsibility.

ADVANCED COURSE

The Advanced Course consists of two classroom hours and one leadership laboratory hour per week during both the third and the fourth years. The coursework during the Advanced Course emphasizes techniques of management and leadership and the fundamentals and dynamics of the military team. The leadership laboratory provides the student with applied leadership experience. The general objective of this course of instruction is to produce junior officers who by educa-

tion, training, attitude, and inherent qualities are suitable for continued development as officers in the Army. There are three avenues available for the student to be eligible for entry into the advanced program and obtain a commission as a second lieutenant:

- (a) satisfactory completion of, or placement credit for, the basic program at the University of Georgia or at any other school, college, or university offering basic ROTC and meeting the entrance and retention requirements established by the Army.
- (b) be an active duty veteran or junior ROTC cadet graduate eligible for placement credit.
- (c) satisfactory completion of the six-week ROTC Basic Camp at Fort Knox, Kentucky, during the summer following the sophomore year. (See Two-Year Program.)
- (d) completion of Basic/Advanced Individual Training with the National Guard or U.S. Army Reserve.

Advanced Course graduates are commissioned as second lieutenants and serve in the Active Army, the Army Reserve or the National Guard. Graduates may be granted a delay in reporting for active duty to pursue graduate studies. Each year one third of our graduates are designated as distinguished military graduates and are eligible for commissions in the Regular Army. A few of these distinguished graduates are awarded fellowships that allow these officers to attend graduate school while receiving full pay and allowances as officers.

PROFESSIONAL MILITARY EDUCATION COMPONENT

The professional military education component consists of two essential parts—a baccalaureate degree and successful completion of one of the undergraduate courses from each of the five designated fields of study listed below.

1. Written Communication Skills
 - a. Requirement: Develop the ability to communicate effectively in writing.
 - b. Recommended courses: ENG 101 and 102, English Composition, are required for all undergraduate degrees at The University of Georgia.
2. Human Behavior
 - a. Requirement: Gain a knowledge of human and societal development as a basis for an understanding of the hu-

man aspects of command, military operations and training, and combat and training developments.

- b. Recommended courses: PSY 101, Elementary Psychology; SOC 105, Introductory Sociology; SOC 160, Contemporary Social Problems, ANT 102, Introduction to Anthropology; SOC 111, American Society.
3. Military History
 - a. Requirement: Become acquainted with the evolution of warfare, military theory, and the military profession, with particular emphasis on the place of military institutions in society, to develop a sense of military history.
 - b. Recommended courses: HIS 413F, The Civil War Period of American History; HIS 457A, Military History to 1815; HIS 457B, Recent Military History; HIS 457F, The Age of World War II; HIS 457T, The Age of the Cold War; HIS 457E, The Age of World War I.
 4. Computer Literacy
 - a. Requirement: Become familiar with personal computer terminology, hardware, and application software to include word processing and the MSDOS system.
 - b. Recommended course: CS 101-101L, Introduction to Information Processing and Microcomputers.
 5. Math Reasoning
 - a. Requirement: Develop the ability to understand and use basic mathematical models for problem solving and decision making.
 - b. Recommended course: MAT 102, College Algebra.

Any deviation from the above requirements must be approved after counsel with the Professor of Military Science. Individuals are encouraged, but not required, to take a course in each of the fields listed below:

6. Management
 - a. Requirement: Gain a knowledge of management and its tools as a basis for an understanding of the management aspects of command, military operations and training, and combat and training development.
 - b. Recommended courses: MAN 351, Management and Organizational Behavior; MAN 201, Introduction to Organizational Communication.

7. National Security Studies

- a. Requirement: Be acquainted with the formulation and execution of national security policy and the important issues affecting U.S. security.
- b. Recommended course: HIS 416M, Problems in American Foreign Policy, 1776-Present.

ADVANCED PLACEMENT

Veterans entering the military science program may receive credit for the first two years of ROTC. Students who have completed military science courses in military preparatory schools or junior colleges may also be given appropriate credit.

FINANCIAL ASSISTANCE

All cadets in the advanced program earn approximately \$1000 per year in nontaxable allowances. Non-scholarship cadets can earn as much as \$16,500 during their four years of college by being in both the Georgia National Guard or the United States Army Reserve and Army ROTC Simultaneous Membership Program (SMP).

SCHOLARSHIPS

Three-year and two-year Army ROTC scholarships are awarded on a competitive basis. More than 50% of our advanced course students are on scholarship. Freshmen apply for three-year scholarships and sophomores apply for two-year scholarships in January each year. Special scholarship programs are available for nursing students. Individuals interested in applying for a scholarship should contact the Professor of Military Science at the University of Georgia. Four-year scholarships are available to high school seniors. Two \$500 Bulldog Battalion Alumni Association scholarship supplements are awarded to selected four-year scholarship winners.

Alumni stipends are offered to all Army scholarship winners who meet the following academic requirements: (1) 3.5 GPA and 1200 SAT or 29 ACT will receive \$2,100 to cover cost of room and board; (2) 1200-1290 SAT or 29-30 ACT will receive \$1040 to be applied to room and board; (3) applicants who score above 1300 SAT or 31 or better ACT will receive \$2,100 to cover cost of room and board.

TWO-YEAR PROGRAM

Transfer Students

Students transferring to the University with two years of college remaining, but who have not completed all basic course requirements, can still participate in the advanced course. These students must attend a six-week summer camp prior to entering the advanced program. Students attend camp at Fort Knox, Kentucky, and are paid \$700, provided free room and board and a travel allowance to and from camp. Students who intend to enroll in the two-year program should contact the Professor of Military Science by February of their sophomore year.

PROFESSIONAL ACTIVITIES

There are two extracurricular organizations that supplement instruction offered in the classroom. Pershing Rifles Company and Ranger Company improve the student's military skills and offer additional leadership opportunities. There is also the Color Guard, the Scabbard and Blade Honor Society, and a support organization The Silver Stars.

FIELD TRIPS

The battalion conducts two weekend field trips each quarter. Previous weekend activities have included mountaineering, weapons qualification, tactics, and land navigation.

ARMY SPECIALTY TRAINING

Selected students attend the United States Army Airborne, Air Assault, and Northern Warfare schools during the summer on a voluntary basis.

CAREER OPPORTUNITIES

Our graduates earn approximately \$25,000 a year to start. This amount rises to approximately \$41,000 after four years of active duty.

ARMY ROTC UNIFORMS, BOOKS AND SUPPLIES

Students enrolling in the Army ROTC program will be issued all books and materials needed in their ROTC classes. Scholarship students, advanced course students, and extracurricular activity members are issued uniforms. Others are issued uniforms and equipment as needed.

FURTHER INFORMATION

For further information contact the Professor of Military Science by calling (706) 542-2612 or by visiting the Military Building on campus at the corner of Baldwin and Sanford Streets.

COURSES OF INSTRUCTION

Military Science (MIL)

Contact Person: Lt. Colonel James M. Casey, Professor of Military Science, 542-2612

Basic Course

101. Army Organization. 2 hours. One hour conference, one leadership lab.

A study of the U.S. Army and the ROTC organization.

102. Basic Military Skills I. 2 hours.

Characteristics of basic military skills essential to the contemporary soldier with emphasis on individual training in combat first aid.

104. Basic Military Skills II. 2 hours.

Characteristics of basic military weapons, the principles and fundamentals of rifle marksmanship, basic climbing and rappelling skills, and communications.

170. Military Mountaineering. 2 hours.

This course provides both classroom and laboratory instruction on ropes, knots, rope bridges, rappelling, and mountain survival techniques. The class will be divided into equal size teams for competition in the proper installation and crossing of rope bridges, the construction of improvised shelters, and installation of traps and snares.

201. Map Reading, Land Navigation and Orienteering. 2 hours. One lecture, one lab period.

An introduction to the art of basic map reading and land navigation including the study of topographic maps, terrain evaluation and the use of a lensatic compass. Students will also receive preliminary instruction on orienteering and associated skills.

202. Basic Tactics and Operations. 2 hours. One lecture, one lab period.

A study of small unit tactics, operations and troop leading procedures to include the combined arms teams to the platoon with primary interest on the rifle squad.

206. Leadership Assessment/Orientation. 2 hours.

Assessment and training in basic management skills of planning, organizing, delegating, administrative control, problem analysis, influence, and leadership.

Advanced Course

301. Leadership and Management I. 3 hours.

Prerequisite: Basic Course or equivalent and permission of department.

A study of the psychology of leadership, techniques of management, and methods of instruction to include practical application.

302. Fundamentals and Dynamics of the Military Team I. 3 hours.

Prerequisite: Basic Course or equivalent and permission of department.

A study of tactics applied at the platoon and company level to include a study of the modern battlefield and current military tactical doctrine.

303. Leadership Seminar. 2 hours.

Prerequisite: MIL 301 and 302.

A series of seminars, laboratories and experiences to prepare the student for Advanced Summer Camp.

401. Fundamentals and Dynamics of the Military Team II. 3 hours.

Prerequisite: MIL 301 and 302.

A study of command and staff duties and responsibilities of the professional officer to include operations, intelligence, administration and logistics.

402. Leadership and Management II. 3 hours.

Prerequisite: MIL 301 and 302.

A study of special tactical operations, the military justice system and service orientation.

403. Transition to Lieutenant II. 1 hour. Repeatable for maximum 2 hours credit.

Prerequisite: MIL 302 and MIL 303.

Final preparation of students for a commission as a second lieutenant in the United States Army.

490ABC. Directed Studies in Military Science.

1 hour each. One lecture and one 1-hour lab period.

Special projects designed to develop skills beyond those taught in the standard ROTC program.

Advanced Placement Program for AP Teachers

This program is for high school teachers who are teaching or are planning to teach high school Advanced Placement (AP) courses. Three hours of graduate or undergraduate credit in the specific subject area will be offered for each course. All of the AP courses will be offered as part of an annual two-week summer AP institute, held approximately four weeks after the spring term for the public schools is over.

When faculty members are available and there is sufficient demand, courses in the following subject areas will be offered:

- Biology
BIO 510P/710P
- Calculus
MAT 507P/707P
- Chemistry
CHM 502P/702P
- Computer Science
CS 500P/700P
- English
ENG 590P/790P
- History
HIS 590P/790P

- Latin
LAT 519P/719P
- Spanish
SP 590P/790P

Faculty members for AP institutes are selected from members of UGA's faculty who are nationally recognized scholars in their field and supplemented by high school teachers who are thoroughly familiar with the College Board's Advanced Placement Program.

Students must register for AP courses through the Special Academic Programs Office.

For more information, contact:

Ms. Mary Lue Walser, Program
Coordinator, or

Dr. Gene Michaels, Director
Special Academic Programs
The University of Georgia
Room 209, Biological Sciences Bldg.
Athens, Georgia 30602
Phone: (706) 542-7623

Appendices and Index

1996-97



Appendices

Undergraduate Degrees and Majors

College of Agricultural and Environmental Sciences

Bachelor of Science in Agriculture (B.S.A.)

Majors: Agribusiness
Agricultural Economics
Agricultural Education
Agricultural Communications
Agricultural Technology Management
Animal Health
Animal Science
Biological Science
Crop Science
Dairy Science
Environmental Economics and Management
Environmental Soil Science
Food Science
Horticulture
Landscape and Grounds Management
Plant Pathology
Plant Protection and Pest Management
Poultry Science
Turfgrass Management

Bachelor of Science in Agricultural Engineering (B.S.A.E.)

Bachelor of Science in Biological Engineering (B.S.B.E.)

Bachelor of Science in Environmental Health (B.S.E.H.)

Franklin College of Arts and Sciences

Bachelor of Arts (A.B.)

Majors: Anthropology
Area Studies
Art/Art History
Chemistry
Classical Culture
Cognitive Science
Comparative Literature
Computer Science
Criminal Justice
Drama
Economics
English
French
Geography
Geology

German
Germanic and Slavic Languages
Greek
History
Interdisciplinary Studies
Italian
Japanese Language and Literature
Latin
Linguistics
Mathematics
Microbiology
Music
Philosophy
Physics
Physics and Astronomy
Political Science
Psychology
Religion
Romance Languages
Sociology
Spanish
Speech Communication
Statistics
Studio Art

Bachelor of Fine Arts (B.F.A.)

Majors: Art
Art/Art Education
Interdisciplinary Studies
Music
Music Literature

Bachelor of Music (B.Mus.)

Majors: Church Music
Music Composition
Music Education
Music Performance
Music Theory
Music Therapy

Bachelor of Science (B.S.)

Majors: Area Studies
Biochemistry and Molecular Biology
Biological and Physical Sciences (Pre-Dentistry)
Biological and Physical Sciences (Pre-Medicine)
Biological and Physical Sciences (Pre-Veterinary)
Biology
Botany
Cellular Biology
Chemistry
Computer Science
Entomology
Genetics
Geography
Geology
Interdisciplinary Studies
Mathematics
Microbiology
Physical Sciences (Engineering Related)
Physics
Physics and Astronomy
Psychology
Statistics

Bachelor of Science in Chemistry (B.S.Chem.)

Bachelor of Science in Physics and Astronomy (B.S.P.A.)

Bachelor of Science in Physics (B.S.PCS.)

C. Herman and Mary Virginia Terry College of Business

Bachelor of Business Administration (B.B.A.)

Majors: Accounting
Economics
Finance
General Business
Human Resource Management
International Business
Location Analysis
Management
Management Information Systems
Management Sciences
Marketing
Organizational Management
Real Estate
Risk Management and Insurance

College of Education

Bachelor of Science in Education (B.S.Ed.)

Majors: Art Education
Business Education
Communication Sciences and Disorders
Dance Education
Early Childhood Education
English Education
English/Speech Education
Exercise and Sport Science
Foreign Language Education
Health and Physical Education
Health Promotion and Education
Marketing Education
Mathematics Education
Middle School
Recreation and Leisure Studies
Science Education
Social Science Education
Social Science Education/Behavioral Science
Special Education
Technological Studies

Associate of Applied Science (A.A.S.)

(Cooperative program with Athens Area Technical Institute)

School of Environmental Design

Bachelor of Landscape Architecture (B.L.A.)

College of Family and Consumer Sciences

Bachelor of Science in Family and Consumer Sciences (B.S.F.C.S.)

Majors: Child and Family Development—Early Childhood Education:
Prekindergarten Through Grade 2
Child and Family Development
Clothing and Textiles
Consumer Economics
Consumer Foods

Consumer Journalism
Dietetics
Fashion Merchandising
Furnishing and Interiors
Home Economics Education
Housing
Nutrition Science

Daniel B. Warnell School of Forest Resources

Bachelor of Science in Forest Resources (B.S.F.R.)

Majors: Fisheries and Aquaculture
Forest Environmental Resources
Forestry
Wildlife

Henry W. Grady College of Journalism and Mass Communication

Bachelor of Arts in Journalism (A.B.J.)

Majors: Advertising
Area Studies
Broadcast News
Magazines
Newspapers
Public Relations
Publication Management
Telecommunication Arts

College of Pharmacy

Bachelor of Science in Pharmacy (B.S.PHR.)

School of Social Work

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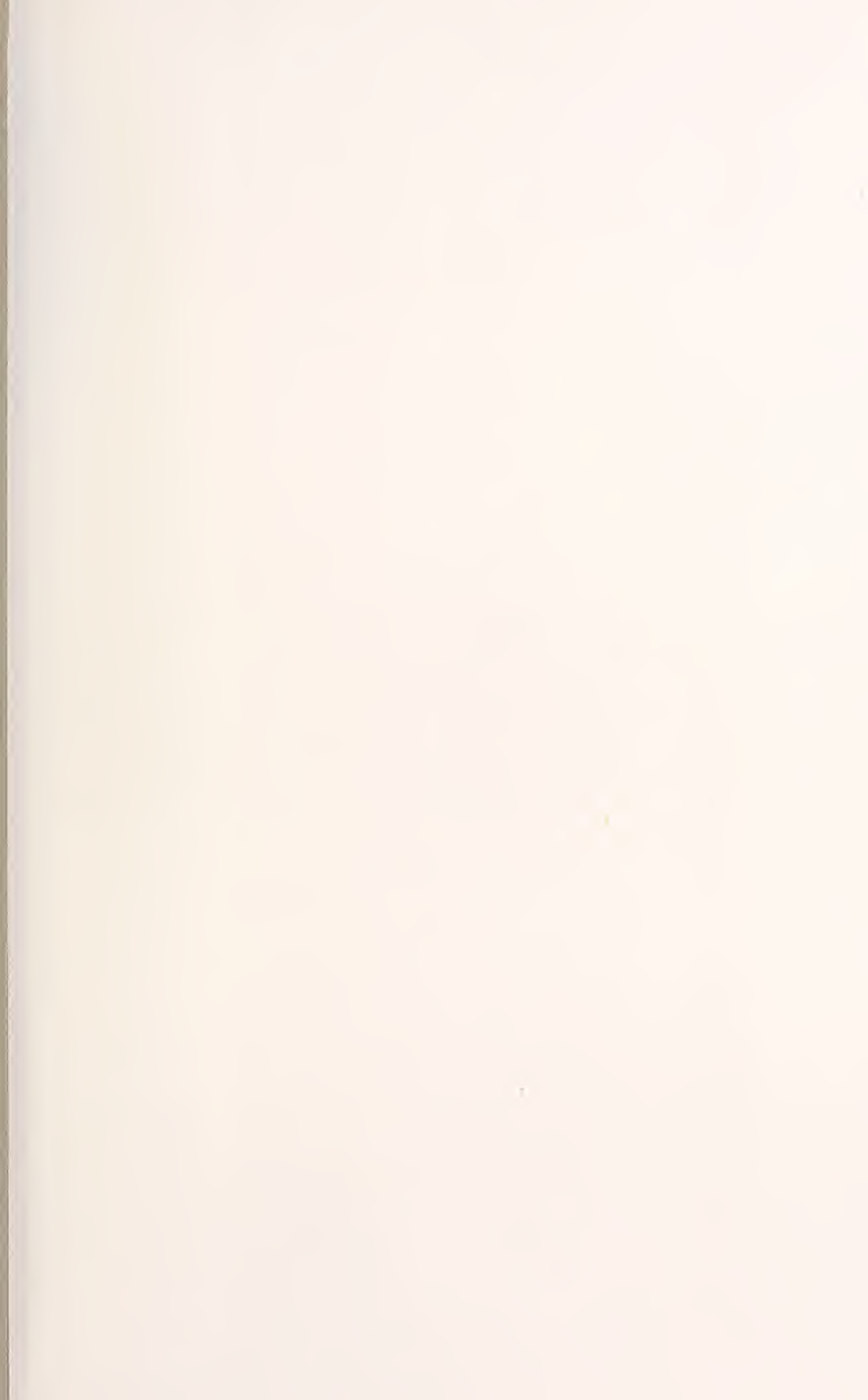
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