

RECORD OF
THE UNIVERSITY
OF NORTH CAROLINA
AT CHAPEL HILL

October 2, 1970

Number 755

The Undergraduate Bulletin



Under the Honor System you are on your honor not to cheat, steal or lie; and if you see another student doing so, you are on your honor to report him to the appropriate student council

Under the Campus Code you are bound on your responsibility as a gentleman to conduct yourself as such at all times, and further to see to it, insofar as possible, that your fellow students do likewise.

RECORD OF THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL

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THE UNIVERSITY OF NORTH CAROLINA

(Six Component Institutions)

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By the act of the General Assembly of 1931 the University of North Carolina at Chapel Hill, the North Carolina College for Women at Greensboro, and the North Carolina State College of Agriculture and Engineering at Raleigh were merged into The University of North Carolina.

By the act of the General Assembly of 1963 effective July 1, 1963, The University of North Carolina comprised: The University of North Carolina at Chapel Hill, The University of North Carolina at Greensboro and North Carolina State of The University of North Carolina at Raleigh.

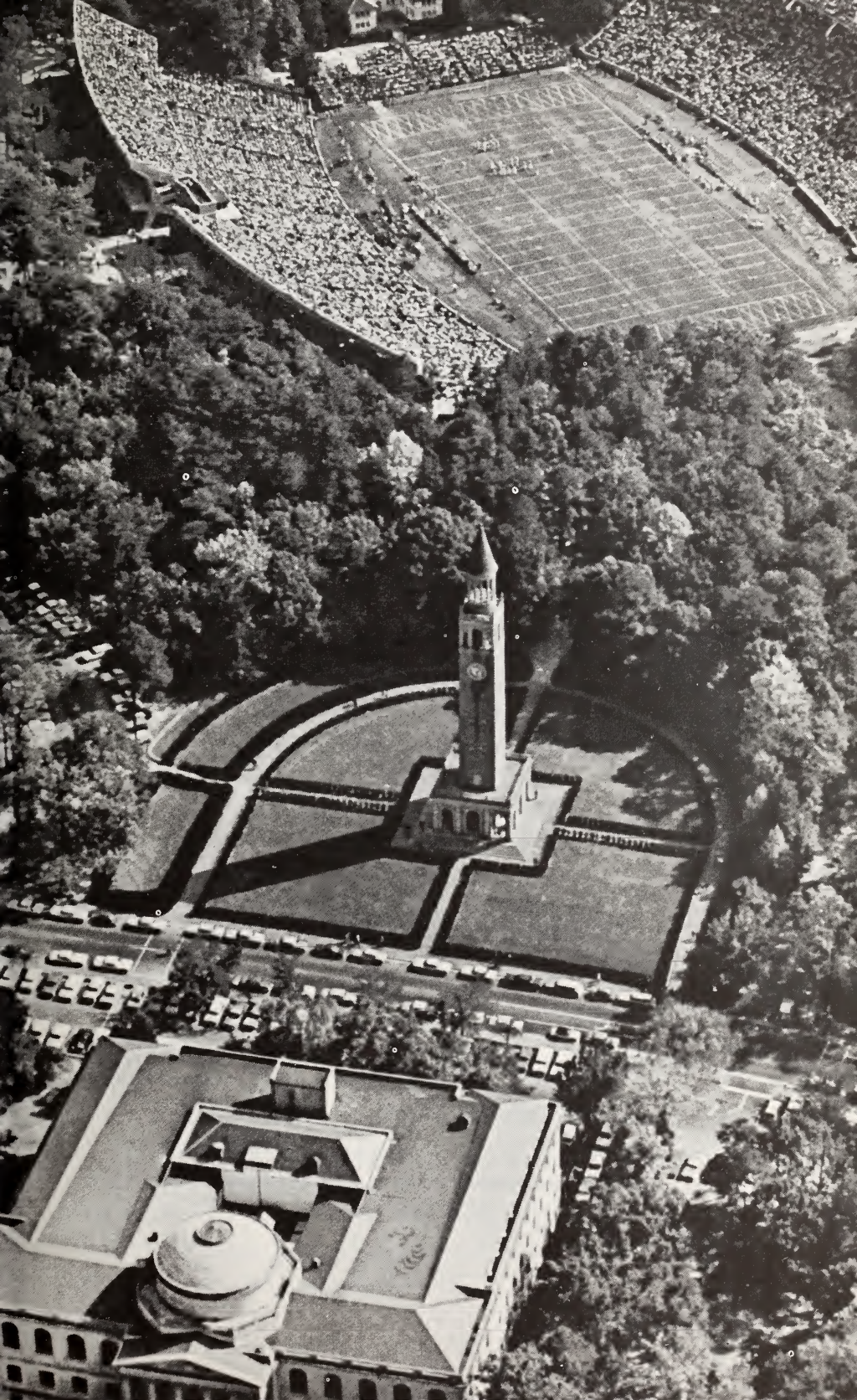
By the act of the General Assembly of 1965 effective July 1, 1965, The University of North Carolina comprised: The University of North Carolina at Chapel Hill, The University of North Carolina at Charlotte, The University of North Carolina at Greensboro, and North Carolina State University at Raleigh.

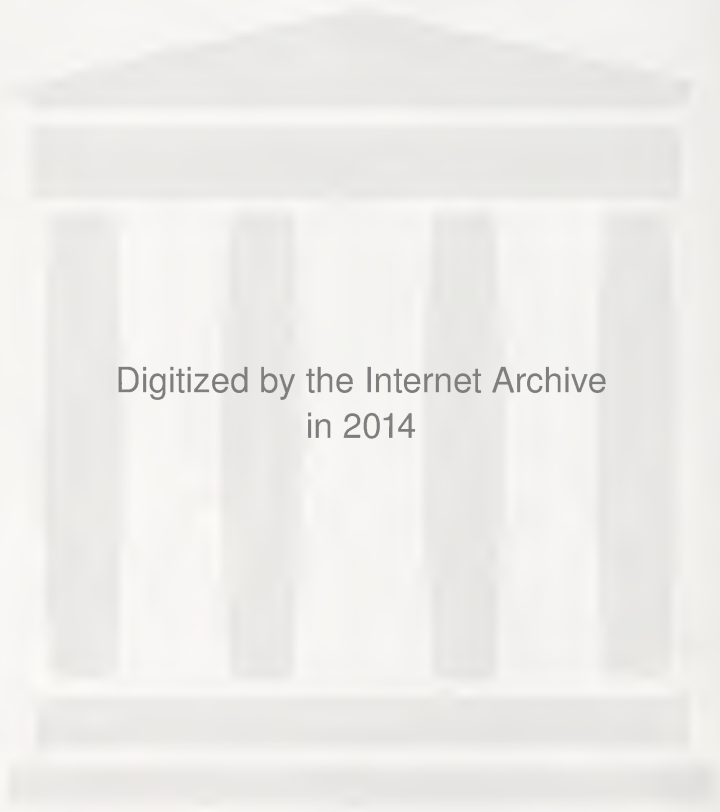
By the act of the General Assembly of 1969 effective July 1, 1969, The University of North Carolina comprises: The University of North Carolina at Chapel Hill, The University of North Carolina at Asheville, The University of North Carolina at Charlotte, The University of North Carolina at Greensboro, The University of North Carolina at Wilmington, and North Carolina State University at Raleigh.

Each institution has its own faculty and student body, and each is headed by a chancellor as its chief administrative officer. Unified general policy and appropriate allocation of function are effected by a single Board of Trustees and by the President with other administrative officers of The University. The general administration offices are located in Chapel Hill.

Members of the Board of Trustees are elected by the Legislature, and the Governor of North Carolina is chairman ex officio.

The chancellors of the component institutions are responsible to the President as the principal executive officer of The University of North Carolina.





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OCTOBER 2, 1970

NUMBER 755

RECORD OF THE
UNIVERSITY OF NORTH CAROLINA
AT CHAPEL HILL

THE ONE HUNDRED AND
SEVENTY-SIXTH SESSION



THE UNDERGRADUATE BULLETIN

THE UNIVERSITY OF NORTH CAROLINA PRESS
CHAPEL HILL, N. C.

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Student Financial Aid

Summer Session Catalogue

Department of City and Regional Planning Catalogue

Department of Music Catalogue

Department of Statistics Catalogue

School of Business Administration Catalogue

Graduate School of Business Administration Catalogue

School of Dentistry Catalogue

School of Education Catalogue

School of Journalism Catalogue

School of Law Catalogue

School of Library Science Catalogue

School of Medicine Catalogue

School of Nursing Catalogue

School of Pharmacy Catalogue

School of Public Health Catalogue

School of Social Work Catalogue

Division of Physical Therapy Catalogue

The Graduate School Catalogue

Research: A record of Scholarship and Publication

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Map of the Campus of the University at Chapel Hill	<i>folded in back cover</i>

UNIVERSITY CALENDAR

1970-1971

FALL SEMESTER, 1970

September 11, Friday	Fall Semester opens.
September 11, Friday Noon	Residence halls open.
September 12, Saturday, 8:30 A.M.	Orientation and placement for all freshman and transfer students.
September 14, Monday	Registration for freshmen only.
September 15-16, Tuesday-Wednesday	Registration for upperclassmen. Pre-registered students pick up schedules.
September 17, Thursday, 8:00 A.M.	Classes begin.
October 12, Monday	University Day.
November 25, Wednesday, 1:00 P.M.	Instruction ends for Thanksgiving recess.
November 30, Monday, 8:00 A.M.	Instruction resumed.
December 18, Friday, 5:00 P.M.	Instruction ends for Christmas recess.
January 4, 1971, Monday, 8:00 A.M.	Instruction resumed.
January 14, Thursday	Last day of classes for Fall Semester.
January 15-17, Friday-Sunday	Reading days.
January 18, Monday	Fall Semester final examinations begin.
January 27, Wednesday, 6:00 P.M.	Fall Semester final examinations end and semester closes.

SPRING SEMESTER, 1971

January 27, Wednesday	Spring Semester opens.
January 27, Wednesday, 1:00 P.M.	Residence halls open.
January 28, Thursday, 9:00 A.M.	Orientation and placement of all new freshmen and transfer students.

January 29, Friday, 8:30-4:30 P.M.	Registration.
February 1, Monday, 8:00 A.M.	Classes begin.
March 26, Friday, 6:00 P.M.	Instruction ends for Spring recess.
April 5, Monday, 8:00 A.M.	Instruction resumed.
May 13, Thursday	Last day of classes for Spring Semester.
May 14-16, Friday-Sunday	Reading days.
May 17, Monday, 8:30 A.M.	Spring Semester examinations begin.
May 26, Wednesday, 6:00 P.M.	Spring Semester examinations end.
May 29-31, Saturday-Monday	Commencement and Graduation.

SUMMER SESSION, 1971

First Term

June 7, Monday	Registration
June 12, Saturday	Regular classes in all departments.
June 26, Saturday	Regular classes in all departments.
July 9, Friday	Last day of classes.
July 12-13, Monday-Tuesday	Final examinations.

Second Term

July 15, Thursday	Registration.
July 16, Friday	First day of classes.
July 17, Saturday	Regular classes in all departments.
August 20, Friday	Last day of classes.
August 23-24, Monday, Tuesday	Final examinations.

CALENDAR FOR 1970

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THE UNIVERSITY OF NORTH CAROLINA

AT CHAPEL HILL

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For convenient reference the deans of the Graduate and graduate professional schools are listed.

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INTRODUCTION

PURPOSE

The purpose of this bulletin is to supply to the prospective student general information about The University of North Carolina at Chapel Hill, and procedures for submitting an application for admission; to provide for the accepted candidate the information which he needs in regard to matriculation and registration; and finally, to give the undergraduate the information which he needs as he adapts himself to the University and works toward a degree in the field of his major. For some highly specialized curricula the student may be referred to other publications for detailed statements of opportunities and requirements.

OTHER OFFICIAL INFORMATIONAL PUBLICATIONS

The content of this bulletin is supplemented by other official informational publications. The list of publications is shown on page 6. Individual publications will be mentioned from time to time as seems relevant.

VISITS TO THE CAMPUS

Visitors are always welcome. An information desk in the lobby of South Building is manned continuously. Here will be found a copy of the *Student Faculty Directory* (with names, home and office addresses, and telephone numbers of faculty, clerical and administrative staff members, and home and local addresses of students) and an attendant who will be glad to assist the visitor. Similar information is available at the Frank Porter Graham Student Union Building.

Through the courtesy of the Carolina Women's Court and the Alpha Phi Omega Service Fraternity a guide service is made available to visitors. For further information one should apply at the Information Desk in South Building.

Ample overnight accommodations are available (except on football weekends, commencement, and other special occasions) at the Carolina Inn (owned and operated by the University) or in the numerous motels in the Chapel Hill-Durham vicinity.

Offices of the University are usually open 8:00 a.m. to 5:00 p.m. Mondays through Fridays but are generally not opened on Saturdays.



THE OLD WELL.

CORRESPONDING WITH AND TELEPHONING THE UNIVERSITY

Most of the business that the candidate for admission has with the University will be transacted through the Office of the Director of Undergraduate Admissions, 101 Vance Hall. After a candidate has been formally accepted, he may need to communicate with the Director of Housing, Bynum Hall. A student with a problem about his program of study should get in touch with his academic dean (for all freshmen except in nursing and dental hygiene, this is the Associate Dean of the General College). The Director of Student Aid, 300 Vance Hall, has general charge of scholarships, grants, self-help work, and loans.

A more complete directory will be found on page 328.

Long distance telephone calls to any place or person in the University's Division of Academic Affairs can be completed through the University operator in Chapel Hill (area code 919, telephone number 933-2211).

HISTORICAL SKETCH

The University of North Carolina at Chapel Hill, the first state university to accept and to graduate students, was authorized by the state constitution of 1776, chartered in 1789, and opened its doors in 1795 with two professors and an enrollment which reached forty by the end of the year. Growth in the period before the Civil War was slow but steady and was characterized by broadening of the curriculum, increase in the size of the faculty and student body, expansion of the physical plant, and development of a tradition of public service among graduates. By 1861 there was a student body of more than 400 and one alumnus, James K. Polk, had been elected President of the United States.

Surviving the Civil War despite the heavy loss of students and faculty to military service, the University succumbed to the vicissitudes of Reconstruction and did not complete the session of 1870-71. Reopened in 1875, it resumed and continued its slow and steady growth. By the outbreak of World War I there was a student body of nearly 1,000. The 1920's were a period of rapid growth in plant (dormitories, classroom buildings, and laboratories), student body, and faculty. Enrollment had reached 3,000 by 1930.

Though its growth was temporarily halted by the onset of the Depression, the University was able to use New Deal relief measures to expand further the physical plant. Three women's dormitories, Lenoir Cafeteria, and Woollen Gymnasium were erected in the 1930's. By the time the United States entered World War II there were more than 4,000 students. The declining civilian enrollment during the war was compensated for by the extensive use of the University facilities (plant and faculty) by the government in its military and naval training programs.

The post-war period has been one of rapid expansion. The mushroom growth caused by the influx of World War II and Korean veterans under the G.I. bills had scarcely subsided when the tidal wave of war babies was sighted. This period has also witnessed an expansion of physical facilities (a new medical school, a teaching hospital, three modern buildings for the School of Business Administration, buildings for Public Health, Dentistry, Pharmacy, and Modern Languages and greatly increased dormitory accommodations), an enlargement of functions as represented by programs in Dentistry, Nursing, and Public Health, and the coming of many new faculty members. Presently the University has an enrollment of more than 15,000 students,

of whom over 10,000 are undergraduates and over 4,000 are in the graduate and professional schools. There are approximately 730 full-time faculty members and 500 instructors and assistants. The campus contains more than 135 buildings.

For administrative purposes the University is organized into two great sectors: the Division of Academic Affairs which contains the *General College*, the *College of Arts and Sciences*, the *School of Business Administration*, the *School of Education*, the *School of Journalism*, the Graduate School, the School of Law, the School of Library Science, and the School of Social Work; and the Division of Health Affairs which contains the School of Medicine, the School of Dentistry, the *School of Pharmacy*, the School of Public Health, and the *School of Nursing*. This bulletin is concerned primarily with undergraduates enrolled in the schools whose names are printed in italics above.

From an early period emphasis has been placed in the principle of personal honor in conduct and on the concept of student autonomy in the management of student affairs. These two ideas permeate undergraduate activity at The University of North Carolina at Chapel Hill. In combination with the aim of academic excellence they constitute the guidelines of undergraduate life.

SOUTH BUILDING



UNDERGRADUATE ADMISSIONS

Students of all races are equally welcome in the University of North Carolina. Persons of all racial backgrounds may apply for and accept admission, confident that the policy and regular practice of the institution will protect them from discrimination. The Office of Undergraduate Admissions will assist interested students in any way possible as they plan for their continued education. Applications from non-residents are also encouraged although (due to a fifteen per cent quota limit on out-of-state students) non-resident candidates must present excellent qualifications in order to be competitive for the limited number of places that can be allocated to out-of-state students.

ADMISSION REQUIREMENTS

A candidate for admission should have reached the age of sixteen by the date of the first enrollment. In addition, the University asks that a candidate present evidence of physical and mental well being sufficient to cope with the pressures of University life.

SPECIFIC ITEMS NECESSARY FOR CONSIDERATION AS A CANDIDATE

Freshman Admission

A completed application to include:

- a. High School transcript.
- b. Scholastic Aptitude Test scores.
- c. Recommendation from the current or last attended schools. (In the case of a candidate in a new school for the first time, a second recommendation from previous schooling is suggested).
- d. Application fee.
- e. Any additional items requested in the application materials or by the Office of Undergraduate Admissions.

Transfer Admission

A completed application to include:

- a. College transcript from each college attended including summer school.
- b. Confidential rating sheet from each college attended including summer school.
- c. Transcript showing high school units if not listed in college transcript.
- d. Application fee.
- e. Any additional items requested in the application materials.

WHEN TO APPLY

The University will consider applications from North Carolinians and children of alumni until the classes have been filled. However, all candidates are encouraged to apply early in the year prior to their intended enrollment; applications received by January are given first consideration. Non-resident applications are due by January 1st of the year prior to the date of intended enrollment.

The University will consider any candidate at any time provided that places in the incoming class are open.

HIGH SCHOOL COURSE REQUIREMENTS

The University suggests that a student present for admission as strong a college preparatory program from high school as possible. The University encourages prospective students to enroll in as many academic courses as the school program will allow.

A student should present the following minimum course requirements from high school (including the 9th grade): 4 units of English; 3 units of college preparatory mathematics (2 algebra and one geometry); 2 units of the same foreign language; 1 unit in laboratory science (chemistry is preferred for Nursing candidates); 1 unit of social science (preferably United States History); and enough elective units for a total of sixteen. Candidates from senior high schools (the last three years) may present 12 total units for admission. Candidates unable to meet the specific course requirements, particularly in mathematics or foreign language, may be admitted with a deficiency, which should be removed prior to enrolling for the first regular term.

COLLEGE ENTRANCE EXAMINATION BOARD TESTING

The University asks that all freshman candidates present scores on the Scholastic Aptitude Test in order to be considered for admission. This test should be taken during the junior year for Early Decision candidates and during the fall (November or December testings) of the senior year. The University recommends a senior testing since the resulting scores are used for course placement.

CEEB ADVANCED PLACEMENT TEST

The University recognizes satisfactory scores (usually a 3 or better) on the Advanced Placement test for placement and degree credit. Students taking AP tests should have the test booklets and score reports sent to the University for consideration for credit and placement.

Information about any CEEB test and applications for a specific test may be received by writing the Educational Testing Service, Box 592, Princeton, New Jersey 08540 or Box 1025, Berkeley, California 94701. Applicants are urged to apply for test dates six to eight weeks in advance of the actual test date.

FOREIGN STUDENTS

Foreign students should sit for the Scholastic Aptitude Test (SAT) and Testing of English as a Foreign Language (TOEFL). In most cases, consideration of a foreign student cannot be accomplished without the results of these tests.

CEEb TEST DATES FOR 1970-71

SATURDAY, November 7, 1970 SAT only

SATURDAY, December 5, 1970 SAT and Achievement Tests

SATURDAY, January 9, 1971 SAT and Achievement Tests

SATURDAY, February 2, 1971 Achievements only

SATURDAY, March 6, 1971 SAT and Achievement Tests

SATURDAY, April 17, 1971 SAT only

SATURDAY, May 1, 1971 Achievements only

SATURDAY, July 10, 1971 SAT and Achievement Tests

FRESHMAN EARLY DECISION

Students who have decided that the University is their first choice college are urged to apply for Early Decision. By applying early in the fall of the final high school year, a student may have a decision reached on his application which, if affirmative, will eliminate the necessity for multiple applications. To apply for Early Decision, a candidate should accomplish the following steps.

1. Submit a completed application by the first of November.
2. Return the Early Decision Agreement saying that the University is the Candidate's first choice, and if admitted, the candidate will enroll.

The University will notify Early Decision Candidates during the first week in December. An accepted student should confirm his place at the University by sending the \$25.00 enrollment deposited by December 15th. Early acceptances, as are all acceptances, are contingent upon the satisfactory completion of the final high school year.

TRANSFER CANDIDATES

Each year the University enrolls a significant number of transfer students. Students who have completed or who will

complete two years of college prior to their intended enrollment are encouraged to apply. Candidates for the School of Pharmacy may apply after one year.

Students should present an over "C" (2.0 on a 4.0 system) average on all courses attempted outside the consolidated University and be eligible to return to all previously attended institutions in order to meet transfer eligibility. Transfers from other branches of the University system may be admitted with less than a 2.0 average if they meet continued residence requirements and spaces are available. Transfer candidates are categorized by class based on the acceptability of transfer credit. Less than 24 semester hours of transfer credit for freshman; 24 to 51 for sophomore standing; 52 to 84 for junior standing, and 84 plus for senior standing. Transfers with less than sophomore standing have to meet both freshman and transfer eligibility requirements.

TRANSFER OF CREDIT

The University will transfer for degree credit courses from other accredited institutions when the the student earns a satisfactory grade, usually a "C" or its equivalent, and when the University offers a similar course. Course work from non-accredited institutions is usually granted provisional credit; however, each case is handled individually. Transfer credit for meeting specific course requirements is granted for the lowest passing grade; however, credit hours for the lowest passing grade do not transfer (this policy is not applicable for Consolidated University institutions). When a question arises concerning the transfer of credit, the University will be guided in its decision by the publication *Report of Credit Given by Educational Institutions* published by the American Association of Collegiate Registrars and Admission Officers.

Any student may challenge any University course by requesting a validating examination. Satisfactory performance on a validating examination will earn degree credit.

Students seeking transfer to the University should seek assistance in course planning at other institutions from the Office of Undergraduate Admissions to insure the transfer of course work. The University encourages prior course planning for transfer students.

The University will accept sixty-four semester hours of transfer credit (plus physical education activity credit) from a two year institution.

Transfer students who entered college initially with a high school deficiency are still required to satisfy freshman entrance

requirements. When courses are taken in college to remove a high school deficiency, these courses are not granted degree credit.

SCHEDULE FOR THE ADMISSIONS PROCESS

The Office of Undergraduate Admissions will acknowledge the receipt of a formal application when it is received. Notification of items necessary to complete the application is sent when the application is processed shortly after its receipt. Letters signifying the action taken on an application are sent as soon as possible with all applicants notified by mid-April.

CONFIRMATION OF ACCEPTANCE

A student accepted by the University expresses his intent to enroll by sending a non-refundable enrollment deposit of \$25.00 by the first of May or within two weeks of the date of the admission letter if admitted after April 15th. Students on scholarships are required to inform the admissions office of their intent to enroll if they do not send the necessary deposit. The deposit is applied towards the tuition and fee payment due at the beginning of the term.

An accepted student who does not intend to enroll should cancel his admission by writing to the Office of Admissions and informing the University of his plans. An early cancellation may allow the University to admit an additional qualified student.

ADMISSION OF FOREIGN STUDENTS

Students living in foreign countries are considered for admission on the same basis as native candidates. A foreign student should present College Entrance Examination Board, Scholastic Aptitude Test results, as well as his transcripts from previous schooling. Foreign students may also submit the Testing of English as a Foreign Language (TOEFL) examination in support of their application.

The University will issue the necessary visa documentation to those students who are formally admitted to the University. A foreign student should not leave his native country intending to enroll at the University until a formal letter of admission and appropriate visa documents have been received.

Questions concerning foreign student life on this campus should be referred to the Foreign Student Adviser, Carr Building, University of North Carolina, Chapel Hill, North Carolina 27514.

ADMISSION TO OTHER CREDIT PROGRAMS

CORRESPONDENCE COURSES

Application for registration and study by correspondence is made to the Bureau of Correspondence Instruction, Abernethy Hall. A student may earn thirty semester hours of correspondence credit toward a degree at The University of North Carolina at Chapel Hill, provided they are taken below the senior year, which must be taken in residence. A student found academically ineligible to continue in resident study in the University at Chapel Hill may restore his eligibility through correspondence study or through the Summer Session of the University at Chapel Hill. A student academically ineligible for admission as a regular transfer student from another institution may not count toward eligibility work taken by correspondence or in the summer session. Only *bona fide* residents of Chapel Hill may take correspondence courses while residing in Chapel Hill without special permission of their deans. Students attending classes may not enroll in correspondence course at the same time without obtaining the written consent of their deans. Those already enrolled in correspondence courses when entering the University must consider their courses temporarily discontinued until they are no longer in residence, at which time the courses may be resumed.

ADMISSION TO EVENING DIVISION

Application for study in the Evening Division of the University is made to the Director, Abernethy Hall. Only those certified as academically eligible by the Director of Undergraduate Admissions for admission to the University may count toward graduation from the University credits earned in the Evening Division. Thus, a student who has become academically ineligible may not restore his eligibility by taking Evening College courses.

READMISSION

Any student who was not in residence at the end of the preceding semester must apply for permission to re-enter through the Director of Undergraduate Admissions. Only a student who was in good standing at the end of the last semester he completed, or was in good standing when he officially withdrew while a semester was in progress, can reasonably expect his readmission to be granted. Eligibility for continued residence may be earned if the student completes sufficient work in the University's summer session, or through correspondence courses taken at The University of North Carolina at Chapel Hill with

grades which will enable him to attain the required quality-point average. Restoration of eligibility by work done at another institution is not permitted. A student who fails to qualify for readmission or continued residence in one college or school of the University may not be readmitted to enroll in another college or school of the University. A student withdrawn from the University because of illness must first be cleared by the Student Health Service before readmission is granted. Any student suspended by an honor council of the student body must first be restored to good standing by the suspending council through the Office of Student Affairs before he will be readmitted. In all instances of readmission, the student must be academically eligible under the quality-point average requirement in effect since June 1, 1960. *It must be understood that readmission is not automatic.*

ADMISSION AS SUMMER SESSION VISITOR

An application for summer study by a student not planning to be regularly enrolled in the University should be sent to the Director of the Summer Session. If admitted, he will be classified as a summer session visitor. A student in residence at the University will pre-register or register for a summer session through his academic dean or adviser, and a separate application need not be made to the Director of the Summer Session. A student needing work in the summer session to restore academic eligibility in this University must apply to the Director of Undergraduate Admissions, 101 Vance Hall, and will be registered for the summer term as a visitor.

INTRA-UNIVERSITY TRANSFER

Transfer from one school or college to another within the University at Chapel Hill is possible with the approval of both academic deans concerned.

FURTHER INFORMATION

For additional information and services related to the admission of freshmen and transfer students, write to: Director of Undergraduate Admissions, 101 Vance Hall, The University of North Carolina at Chapel Hill, Chapel Hill, N. C. 27514.

ORIENTATION AND MATRICULATION

FRESHMAN REGISTRATION

On arrival in September, freshmen are assigned to orientation teams, each under the direction of an experienced upper-classman who, for about two days, introduces the freshmen to the many facets of undergraduate life in Chapel Hill. During this period, freshmen take the University's standard placement tests in mathematics and in foreign language and are given physical examinations by University Infirmary physicians. The orientation period includes a meeting of the entire freshman class for an official welcome by the Dean of the General College after which each General College adviser meets privately for an extended period with his own group of freshmen. This meeting is followed by scheduled individual conferences in which each freshman, in consultation with his General College adviser, makes final decisions as to his course registrations. Program planning for each student is individually agreed upon in light of all the adviser's information on the student, including results of the tests mentioned above, and in the light of the adviser's experience as a teaching member of the University faculty.

For the first week of classes, each adviser is available full-time in the General College except when he is teaching, and confers individually with those students who find it necessary or desirable to make changes in class schedules, in view of the student's indicated level of preparation ability, long-range plan, and outside commitments such as self-help work.

Throughout, a deliberate effort is made by each adviser to lay proper emphasis upon the paramount importance of the academic aspects of the college educational experience and upon the University's insistence that every student's academic achievement can be consistent with his capacities.

ACADEMIC ORGANIZATION

THE GENERAL COLLEGE

RAYMOND HOWARD DAWSON, Ph.D., *Dean*

JOHN KENDALL NELSON, Ph.D., *Associate Dean*

MARK IRWIN APPLEBAUM, Ph.D., SAMUEL GILL BARNES, Ph.D., JAMES ROY CALDWELL, Ph.D., JOEL J. CARTER, Ph.D., MELVIN ARTHUR CHAMBERS, Ph.D., CHARLES E. COUGHLIN, Ph.D., WALTER ROBERT FALLOW, Jr., Ph.D., DONALD CHARLES JICHA, Ph.D., LILLIAN YOUNGS LEHMAN, Ph.D., EDWARD JAMES LUDWIG, Ph.D., RICHARD HILL ROBINSON, JR., LL.B., THOMAS ADOLPH STEIN, Ph.D., WILLIAM RINGGOLD STRAUGHN, Ph.D., LUTHER RAYMOND TAFF, Ph.D., WILLIAM CURTIS WEST, Ph.D., JAMES ANDREW WILDE, Ph.D., WHITTEN PHILIP WINDHAM, M.S., *Advisers*

All freshmen and sophomores, except those in the schools of Nursing and Pharmacy¹ and in the Dental Hygiene curriculum, are enrolled in the General College. Some of these students will have entered the University with definite academic or professional goals in mind; from the various programs offered in General College, such a student will probably choose one which leads to the degree of Bachelor of Arts (with a major in any one of about thirty academic departments, professional schools, and special curricula) or to the degree of Bachelor of Science in any one of more than a dozen specified academic and professional areas. He may choose a program which best qualifies him for admission to an advanced professional school, or his ultimate educational goal may be reached after one or more years of graduate study.

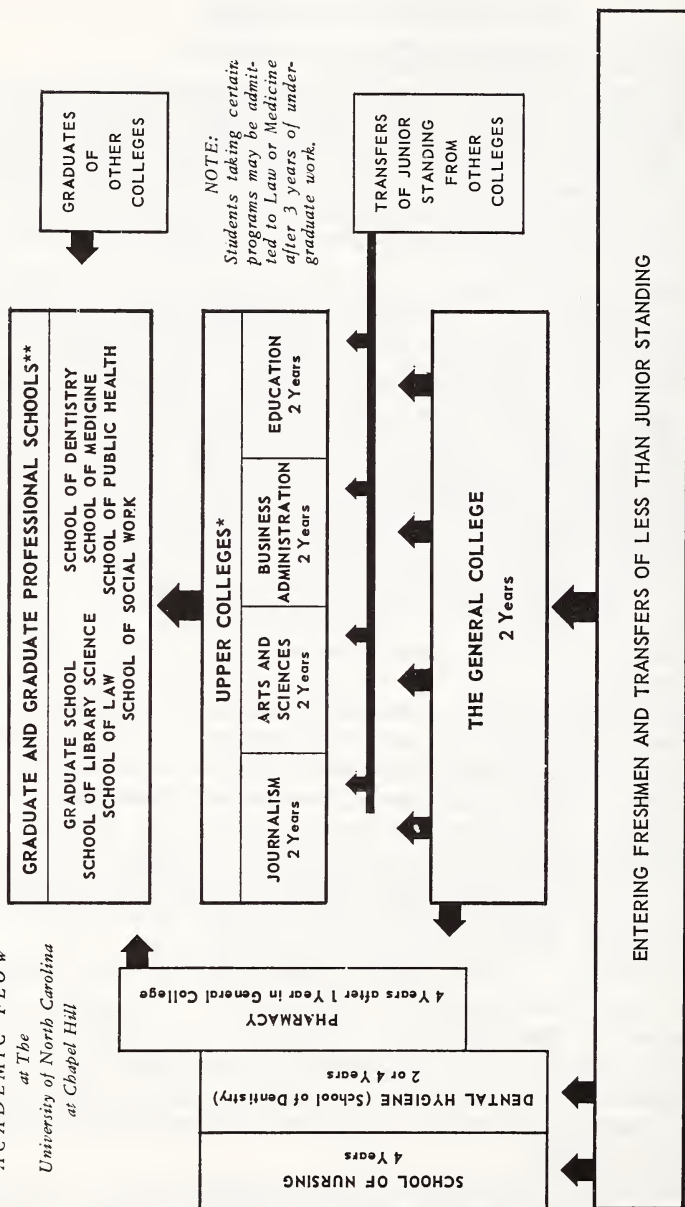
Many students, on the other hand, enter the University with only tentative plans for long-range programs. For this large group, as well as for those whose original plans are changed by circumstances or shift of interests, the General College provides a basic pattern of required courses and electives designed to introduce every student to concepts, modes of thought, and methods of the various academic disciplines, to encourage an intelligent choice of a degree program, and to facilitate changes in program, usually without loss of time or credit.

Each student in the General College receives the personal assistance and encouragement of his adviser (a regular, full-time member of the University faculty) in selecting courses, maintaining required scholastic standards, and planning a complete educational program. Every effort is made to place each student in classes appropriate to his level of pre-college preparation and achievement.

A student will be transferred to an upper college during or immediately after his fourth semester provided he has a quality-

1. A student entering the five-year program of the School of Pharmacy is enrolled in the General College during his first year at the University.

ACADEMIC FLOW
at The
University of North Carolina
at Chapel Hill



*The junior and senior years of the Physical Therapy curriculum are administered by the School of Medicine.

**Admission may be granted if the student meets the requirements of and is accepted by the individual school.

point average on all work taken at the University of 1.50 or higher. A student may be transferred at his request at the end of his first year provided he has a quality-point average of 3.0 or higher and his transfer is approved by the college of his choice.

**THE GENERAL COLLEGE PROGRAM: BASIC REQUIREMENTS
AND CREDITS FOR ENTERING UNDERGRADUATES**

The Faculty Council in January 1970 gave final approval to a new General College curriculum. A faculty-student committee for over a year previously had given careful consideration to the question of what ought to be the general education experience of an undergraduate entering the University of North Carolina at this time. Its proposals, as adopted by the Faculty Council, are described below. The new program is effective for all undergraduates entering the University after June 1, 1970; undergraduates previously enrolled may elect to follow the new curriculum or may continue under the old curriculum.

All General College students are required to complete in their freshman and sophomore years a program of twenty selected courses as well as the required courses in physical education (two semesters). The twenty courses are distributed as follows:

I. ENGLISH COMPOSITION (English 1 and 2).

One or both of these courses may be exempted with credit on the basis of scores made on the verbal section of the College Board Examination. Students will take these courses in their first two semesters. English C *will not* satisfy the English composition requirements.

II. FOREIGN LANGUAGE *or* MATHEMATICAL SCIENCE (two to four courses).

Each student may choose to meet either the requirement in foreign language *or* the requirement in mathematical science as described below. Students should note, however, that in some Bachelor of Science programs described below they will be expected to satisfy requirements in both areas. In exercising this choice students are urged to give careful consideration not only to their previous experience and their immediate interests but also to their future academic and vocational goals.

All students, furthermore, will be asked to take a language placement test. Those who do place beyond Language 1 and 2 will take one or both of those courses, for credit, as indicated by the placement examination.

FOREIGN LANGUAGE (three to four courses).

1. The student with two or more units of high school credit in a foreign language will meet the requirement by completing courses through 4 and one course beyond 4 in a language in which he has two or more units of high school credit or 1, 2, 3, 4, in a language other than one in which he has two or more units of high school credit.

2. If the student is placed in Language 4 or higher, he will receive placement credit without grade for 3, or 3 or 4, but not more.

3. Students lacking two or more units of high school credit in a language may take the placement examination in that language if they have acquired proficiency through other means. If thus placed in Language 3, the high school deficiency will be deemed removed. If placed higher than Language 3, then in addition to deficiency-removal, credit will be awarded for 3, or 3 and 4, but not more.

4. A foreign student may not receive credit for courses 1, 2, 3, 4 (nor for any other conservation or composition courses) in his native language. He may, however, receive credit for literature and civilization courses in that language.

MATHEMATICAL SCIENCE (two courses).

1. To satisfy this option the student will pass two courses to be chosen from:

Mathematics 1, 2 or 21, 22 or 15-31

Computer and Information Science 16, 17, 18, 19

Statistics 11, 12

Philosophy 21, 51

Appropriate exemptions with credit will be provided.

III. DIVISIONAL ELECTIVES (eight courses).

The student will choose eight Divisional Electives distributed as follows:

SOCIAL SCIENCES: three courses in at least *two* departments to be selected from the Divisional Electives listed below:

Anthropology 26, 41, 42, 55

Economics 31, 32

Geography 48, 51, 52

History 11, 12, 13, 21, 22, 23, 24, 25, 27, 28, 30, 31, 41, 42, 44, 45, 46, 47, 48, 49

Philosophy 25

Political Science 41, 51, 52, 54, 55, 56, 60, 63, 64

Psychology 28

Sociology 51, 52, 53, 54, 55

HUMANITIES AND FINE ARTS: three courses in at least two departments to be chosen from the Divisional Electives listed below (courses taken to satisfy the foreign language option may not be included among these three electives) :

Art 30, 35, 36, 37, 38, 39, 44, 46, 49
 Chinese 50
 Classical Archaeology 40
 Classics 30, 33, 34
 Comparative Literature 21, 22, 30, 70, 74
 Dramatic Art 10, 15, 51, 59, 80, 81, 82
 English 20, 21, 22, 23, 24, 25, 26, 28, 29
 French 3, 4, 21, 52, 53, 60, 61, 70, 71, 72, 73, 74, 75, 80, 81, 82
 German 3, 4, 21, 22, 24
 Greek 3, 4, 21, 22
 Italian 3, 4, 21, 70, 82
 Latin 3, 4, 21, 22
 Music 11, 21, 22, 31, 32, 41, 42, 43, 81, 83, 84
 Philosophy 20, 22, 52
 RTVMP 42, 45
 Religion 26, 31, 32, 39, 45
 Russian 3, 4, 70, 72, 74
 Spanish, 3, 4, 21, 22, 52, 53, 71, 72, 73, 80, 81, 82, 85, 86
 Speech 37, 41

NATURAL SCIENCES: two courses, at least one of which is to be a four-hour laboratory course, to be chosen from among the following Divisional Electives :

Astronomy 31, 31L
 Biology 21, 22
 Botany 10, 11, 55
 Chemistry 11X, 11, 11L, 12, 12L, 21, 21L
 Geography 38
 Geology 11, 18, 41, 42
 Physics 20, 21, 24, 25, 26, 27
 Psychology 26
 Zoology 10, 11, 41

IV. COLLEGE ELECTIVES (six to eight courses).

The student will choose six to eight courses from the list of approved College Electives (see page). Not more than four courses may be taken in a single department.

V. PHYSICAL EDUCATION (two semesters, with exemption by testing).

MATTERS OF SPECIAL INTEREST AND IMPORTANCE

The Freshman Seminars. Beginning in the Fall Semester of 1970, a program of freshman seminars will be made available on a regular basis. The program will afford the first-year undergraduate with the opportunity to study a specific topic or problem in the stimulating environment of a small group (enrollment

in such seminar is limited to fifteen students) under the guidance of a full-time faculty member. Before each pre-registration and registration period, a list of the seminar topics and instructors for the forthcoming semester will be issued. Freshmen will be permitted to enroll in one seminar during their first two semesters. The seminar will be credited as a College Elective.

The Freshman and Sophomore Honors Program. For exceptionally well qualified students in the General College, a program of honors study is provided under the direction of the Faculty Council on Honors. This program is invitational and highly selective. To the Freshman Honors Program the Council each year appoints about one hundred entering students of superior ability, preparation, and motivation. These students will be given the opportunity to select one or several special honors courses or seminars (designated by the letter *H* following the course number) each semester. These students will also be placed in advanced sections (designated by the letter *A* following the course number) of courses in fields in which they have strong ability and preparation. The advanced sections are taught by carefully selected instructors of the sponsoring departments. Drill in fundamentals is left largely to the individual students in these sections, and major emphasis is given to critical reading, thinking, and writing and on individual research projects. Members of the freshman honors group are expected to maintain a 3.00 (B) average; students in the regular General College program who have achieved high academic standing (generally 3.50 average) may be invited to join the honors group during the year.

All those who successfully complete the Freshman Honors Program, and other students who demonstrate outstanding ability, are invited to participate in the Sophomore Honors Program. The Sophomore program consists of special seminars in the humanities and fine arts, natural sciences, and the social sciences. Successful completion of each phase of the General College program of honors study is entered on the student's record, along with other academic distinctions.

Advanced Sections. Several departments provide advanced sections (designated by the letter *A* following the course number) in the courses offered to students in the General College. Except for those reserved for students in the honors programs, these advanced sections are open to all students in the General College who maintain a B average, or who have demonstrated outstanding ability in some particular field or fields of study. Eligible students are encouraged to register for advanced sections

so that they can benefit from the more challenging programs of study.

Credit by Examination. Any student may earn credit for a course by successful completion of an "advanced standing" examination in that course administered by the department concerned, *provided* that advance approval to take the examination has been granted by the department concerned and by the student's dean. Credit so earned will be not contingent upon completion of further work in the subject.

Credit by CEEB Advanced Placement Examination. A score of 3 or higher on any advanced placement examination of the College Entrance Examination Board will entitle the student for the comparable university course as determined by the Director of Undergraduate Admissions in consultation with the Chairman of the appropriate department. Such credit will not be contingent upon the completion of further work in the subject.

GENERAL COLLEGE REQUIREMENTS OF UNDERGRADUATE DEGREE PROGRAMS

Listed below are the General College requirements for the various undergraduate degree programs listed in alphabetical order. In each case there is a reference to a subsequent page in this *Bulletin* or to a separate catalogue where a statement of the four-year requirements for that degree will be found. Particular notice should be taken that (1) Bachelor of Science degree programs in the Natural Sciences require both mathematics and a foreign language and the choice of the language is, in some instances, restricted, (2) Bachelor of Fine Arts, Bachelor of Music, and Bachelor of Music Education programs vary somewhat from the basic pattern of General College requirements.

Bachelor of Arts

(See also page 42.)

English 1, 2; foreign language 3, 4, and one course beyond 4 (or 1, 2, 3, 4 in a language in which the student does not have two units of high school credit) *or* two courses in mathematical science; three Social Science Divisional Electives; three Humanities and Fine Arts Divisional Electives; two Natural Science Divisional Electives, one of which must be a laboratory course; six to eight College Electives; two semesters of required physical education. (See departmental listings in "Academic Departments" for major requirements in the College of Arts and Sciences for the Bachelor of Arts degree.)

Bachelor of Arts and Laws

(For complete program see page 52.)

Bachelor of Arts in Biology

(See also page 45, 159.)

English 1, 2; three Social Science Divisional Electives; three Humanities and Fine Arts Divisional Electives; two courses in freshman mathematics; Biology 21, 22; Chemistry 11, 11L, 21, 21L; six College Electives; two semesters of required physical education.

Bachelor of Arts in Education (Elementary)

(See also Catalogue of the School of Education)

English 1, 2; Mathematics 17, 18; three Social Science Divisional Electives; three Humanities and Fine Arts Divisional Electives; two Natural Science Divisional Electives (Psychology 26 may not be included among the Natural Science Divisional Electives); eight College Electives; History 21, 22, and Music 41 are to be included among the electives chosen; two semesters of required physical education.

Bachelor of Arts in Education (Secondary)

(See also Catalogue of the School of Education)

English 1, 2; foreign language 3, 4, and one course beyond 4 (or 1, 2, 3, 4) *or* two courses in mathematical science; three Social Science Divisional Electives; three Humanities and Fine Arts Divisional Electives; two Natural Science Divisional Electives; six to eight College Electives. Two semesters of required physical education.

Bachelor of Arts in Journalism

(See also Catalogue of the School of Journalism)

Same General College requirements as for Bachelor of Arts (page 33), except that Political Science 41 and an introductory course in two of the following three departments are to be included among the electives chosen: economics, psychology, and sociology.

Bachelor of Fine Arts (in Art)

(See also page 48, 151.)

English 1, 2; foreign language 3, 4, and one course beyond 4 (or 1, 2, 3, 4) *or* two courses in the mathematical sciences; two or three Humanities and Fine Arts Divisional Electives; two or three Social Science Divisional Electives; two Natural Science Divisional Electives; Art History 38 and one course from sequence 30, 35, 36, 37, 39; Studio Art 44, 46, 49 and either

63a and 63b or 64a and 64b or 65a and 65b, and either 66a or 68a; sufficient additional College Electives to provide a total of twenty courses; two semesters of required physical education.

Bachelor of Fine Arts (in Dramatic Art)

(See also page 48, 192.)

English 1, 2; foreign language 3, 4, and one course beyond 4 (or 1, 2, 3, 4) or two courses in the mathematical sciences; two or three Humanities and Fine Arts Divisional Electives; two or three Social Science Divisional Electives; two Natural Science Divisional Electives; Dramatic Art 40, 41, 44, 45, 56, 57, 64a-b; those who elect the acting area for concentration will take in addition Art 54a-b, 55, 62, 63; those who elect the design-technical area will take in addition Dramatic Art 55, 62, 63, 64c and 100, 168; those who elect the directing area for concentration will take in addition Dramatic Art 54a, 55, 62, 63, 64c, and 100; sufficient College Electives to provide a total of sixty-one hours; two semesters of required physical education.

Bachelor of Music

(See also page 49, 250.)

English 1, 2; foreign languages 3, 4, and one course beyond 4 (or 1, 2, 3, 4) or two courses in the mathematical sciences; two or three Humanities and Fine Arts Divisional Electives; two or three Social Science Divisional Electives; two Natural Science Divisional Electives; Music 11, 31, 32, 50, 51, 52, 53; four semesters of Applied Music, including Musical Ensemble; sufficient College Electives to provide a total of sixty-one hours; two semesters of required physical education.

Bachelor of Music Education

(See also page 250.)

Same basic requirements as for Bachelor of Music (above.)

Bachelor of Science in Biology

(See also page 159.)

English 1, 2; French or German 3, 4 (or 1, 2, 3, 4); Mathematics 31, 32; Chemistry 11, 11L; 21, 21L; Physics 24, 25; Biology 21, 22 or Zoology 11 and Botany 11; three Humanities and Fine Arts Divisional Electives; three Social Science Divisional Electives; two College Electives; two semesters of required physical education.

Bachelor of Science in Business Administration

(See also page 164.)

English 1, 2; Mathematics 21, 22; three Social Science Divisional Electives; three Humanities and Fine Arts Divisional

Electives; two Natural Science Divisional Electives; Business Administration 71, 73 (majors in Accounting 71, 72); six College Electives; among the courses chosen for elective credit are to be Political Science 41, Economics 31, 32, 70; two semesters of required physical education.

Bachelor of Science in Chemistry

(See also page 170.)

English 1, 2; German or Russian 3, 4 (or 1, 2, 3, 4); Mathematics 31, 32, 33, 34; one Social Science Divisional Elective; two Humanities and Fine Arts Divisional Electives (one English course is recommended); Chemistry 11, 11L, 21, 21L, 41, 41L, 42, 42L, 61, and 62; Physics 26, 27; two semesters of required physical education.

Bachelor of Science in Dental Auxiliary Teacher Education

(See also page 79.)

English 1, 2; two courses in mathematical sciences; three Humanities and Fine Arts Divisional Electives; three Social Science Divisional Electives; Zoology 11 or Physics 20 or Botany 11; Psychology 26; Chemistry 11, 11L, 12, 12L (or 11, 11L, 21, 21L); Six College Electives (students should take Education 41 and Speech 37 or 44); two semesters of required physical education.

Bachelor of Science in Dentistry

(For complete program see page 52.)

Bachelor of Science in Geology

(See also page 223.)

English 1, 2; modern foreign language 3, 4 (or 1, 2, 3, 4); Mathematics 31, 32; two Humanities and Fine Arts Divisional Electives; two Social Science Divisional Electives; Geology 11 or 41, 42, 101, 110, 111; Chemistry 11, 11L, 21, 21L; two College Electives; (English 33 is recommended); two semesters of required physical education.

Bachelor of Science in Health Education

(See also page 60.)

English 1, 2; modern foreign language 3, 4, and one course beyond 4 (or 1, 2, 3, 4); two courses in mathematical sciences; three Humanities and Fine Arts Divisional Electives; three Social Science Divisional Electives; Chemistry 11, 11L, 21, 21L; Botany 11 or Physics 20; four College Electives; Political Science 41, Anthropology 41 or Education 41, Psychology 26 or Sociology

52 or 62 should be included among the electives selected; two semesters of required physical education.

Bachelor of Science in Industrial Relations

(For complete program see page 48.)

Bachelor of Science in Mathematics

(See also page 243.)

English 1, 2; French, German, or Russian 3, 4, and one course beyond 4 (or 1, 2, 3, 4); Mathematics 31, 32, 33, 34; Computer and Information Science 16; three Humanities and Fine Arts Divisional Electives; three Social Science Divisional Electives; Physics 26, 27 (or 24, 25); two College Electives; two semesters of required physical education.

Bachelor of Science in Mathematical Sciences

Students will choose one of the following options as his program of concentration: Applied Mathematics, Statistics, Computer Science, or Decision Methods. The General College program is identical with the Bachelor of Science in Mathematics except for the following: (1) Applied Mathematics students will take Physics 26, 27, 28; (2) Statistics students may take 26, 27 or 24, 25; (3) Computer Science students will take Physics 26, 27; (4) Decision Methods students will take Physics 26, 27 or 24, 25 or Economics 31, 32.

Bachelor of Science in Medical Technology

(For complete program see page 52.)

Bachelor of Science in Medicine

(For complete program see page 52.)

Bachelor of Science in Nursing

(For complete program see page 70.)

Bachelor of Science in Pharmacy

(See also page 74.)

English 1, 2; two Social Science Divisional Electives; Mathematics 15-31; Chemistry 11, 11L, 21, 21L, Biology 21, 22 or Zoology 11, 41; two semesters of required physical education.

Note that the second year of this curriculum is taken after admission to the School of Pharmacy.

Bachelor of Science in Physical Therapy

(See also Catalogue of the School of Medicine.)

English 1, 22; Mathematics 15-31; three Social Science Divisional Electives; three Humanities and Fine Arts Divisional

Electives; Chemistry 11, 11L, 12, 12L (or 11, 11L, 21, 21L); Zoology 11, 41; Physics 24; Psychology 26; four College Electives; two semesters of required physical education.

Bachelor of Science in Physics

(See also page 272.)

English 1, 2; French, German, or Russian 3, 4 (or 1, 2, 3, 4); Mathematics 31, 32, 33, 34; Computer and Information Science 16 (a course in English composition may be substituted); two Social Science Divisional Electives; two Humanities and Fine Arts Divisional Electives; Chemistry 11, 11L, 21, 21L (or 11, 11L, 12, 12L); Physics 26, 27, 28², 61³; one General College Elective; two semesters of required physical education.

Bachelor of Science in Science Teaching

(See also page 61.)

English 1, 2; two courses in mathematical science; three Social Science Divisional Electives; three Humanities and Fine Arts Divisional Electives; Chemistry 11, 11L, 21, 21L (or 11, 11L, 12, 12L); two other Natural Science Divisional Electives; five to six College Electives; included among electives selected should be those specified for the major in General Science, Biology, Chemistry, or Physics; two semesters of required physical education.

Note that requirements may differ for major in General Science, in Biology, in Chemistry, or in Physics.

Bachelor of Science in Zoology

(See also page 321.)

English 1, 2; French or German 3, 4 (or 1, 2, 3, 4); Mathematics 31, 32; two Humanities and Fine Arts Divisional Electives; two Social Science Divisional Electives; Chemistry 11, 11L, 21, 21L, 61, 62; Physics 24, 25 (or 26, 27) Zoology 11 and one Zoology elective; two College Electives; two semesters of required physical education.

COLLEGE ELECTIVES

These are approved courses recommended by the departments and curriculum programs for students choosing College Electives at the freshman-sophomore level. Well qualified students are not limited to this list in choosing electives but may enroll in other courses open to undergraduates with the consent of the course instructor and the General College adviser.

Freshman seminars are counted as College Electives. A separate list of

2. With the approval of the students' adviser, Physics 24, 25, 54, 55 may be substituted for Physics 26, 27, 28.

3. Students having no grade less than B in any prior physics or mathematics course may elect to substitute another course for Physics 61.

topics and instructors is drawn up each semester; the seminars are not included in the following list.

Anthropology 26, 41, 42, 55
Art 30, 35, 36, 37, 38, 39, 44, 46, 49, 61
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Botany 10, 11, 44, 45, 51, 52, 53, 54, 55
Business Administration 71
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Classical Archaeology 40
Classics 30, 33, 34, 51, 75, 76
Comparative Literature 21, 22, 30, 70, 74
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Economics 31, 32, 70
Education 41
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75, 80, 81, 82
Geography 38, 48, 51, 52
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49, 51, 52, 53, 65, 68, 69, 75, 77, 80, 81, 85
Italian 1-2, 3, 4, 14, 15, 21, 50, 57, 70, 82
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Physical Education 41, 42, 77
Physics 20, 21, 24, 25, 26, 27, 28, 36, 37, 52, 54, 55, 58, 61
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Portuguese 1-2, 3, 4, 14, 15
Psychology 26, 27, 28, 30
RTVMP 42, 45, 58
Religion 26, 31, 32, 39, 45
Russian 1-2, 3, 4, 21, 31, 32, 70, 72, 74
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Spanish 1-2, 3, 4, 11, 14, 15, 21, 22, 41, 50, 51, 52, 53, 71, 72, 73, 80, 81, 82,
85, 86
Speech 37, 40, 41, 44, 45, 50, 54, 56
Statistics 11, 12
Zoology 10, 11, 20, 41

THE COLLEGE OF ARTS AND SCIENCES

RAYMOND HOWARD DAWSON, Ph.D., *Dean*

FRANK MARION DUFFEY, Ph.D., *Associate Dean*

ANCEL CLYDE MEWBORN, Ph.D., *Associate Dean for Honors*

GORDON BAYLOR CLEVELAND, Ph.D., *Assistant Dean*

WILLIAM J. POWERS, Ph.D., *Assistant Dean*

WILLIAM MARION HARDY, M.A., CHARLES TOWNSEND LUDINGTON, JR., Ph.D., LEE

GRANT PEDERSEN, Ph.D., RAYMOND HOWARD PULLEY, Ph.D., *Advisers*

The College of Arts and Sciences offers work on the junior-senior level for completing programs of study leading to the Bachelor of Arts degree and to more specialized Bachelor of Science, Bachelor of Music, and Bachelor of Fine Arts degrees. Additional special curricula lead to professional study in law, dentistry, medicine, and medical technology; the degree of Bachelor of Science in Applied Mathematics, Biology, and Industrial Relations; and the degree of Bachelor of Arts with majors in American Studies, Afro-American Studies, African Studies, Biology, and International Studies.

ADMISSION AND CHOICE OF MAJOR

Students enter the College by transfer from the General College or by admission to advanced standing in the University. (See "The Admissions Process.") In either case, an acceptable pattern of courses must be met. A student transferring from another institution not offering some courses of a particular pattern must include these courses in his junior-senior program. The half-credit rule for freshman courses taken during the junior year and for sophomore courses taken during the senior year does not apply to the removal of such deficiencies by transfer students who register for the needed courses as soon as possible.

In the choice of a major field or special program, the student entering the College will have the assistance of one of the advisers in the Dean's office. If one of the regular degree programs is selected, advisers in the department of the major subject will assist in the selection of courses. Final responsibility for the acceptability of the selection and for full compliance with all published regulations and requirements of the College rests with the student.

Choice of a major subject for one of the regular degree programs places the student in one of the four divisions of the College: the Fine Arts, the Humanities, the Natural Sciences, and the Social Sciences. Departments in the same division as the department of the student's major are "allied"; those in the other divisions are "non-divisional," except that humanities

courses are allied to majors in the fine arts and fine arts courses are allied to majors in the humanities. Some departments' courses carry major credit in more than one division, and a limited number of courses offered in some of the professional schools are accepted for degree programs in the College of Arts and Sciences.

THE DIVISION OF THE FINE ARTS

WILTON E. MASON, Ph.D., *Chairman*

RUSSELL B. GRAVES, Ph.D., *Secretary*

Departments: Art, Dramatic Art, Music, Radio, Television, and Motion Pictures.

(Note: Courses in the humanities are allied to major programs in the fine arts.)

THE DIVISION OF THE HUMANITIES

GEORGE A. KENNEDY, Ph.D., *Chairman*

GEORGE B. DANIEL, Ph.D., *Secretary*

Departments: Classics, English, Germanic Languages, History, Linguistics and Non-Western Languages, Philosophy, Religion, Romance Languages, Slavic Languages.

Special Curricula: Comparative Literature, African Studies, Afro-American Studies, American Studies.

Allied Courses in Schools: Journalisms 53, 56, 58, 60, 73, 111.

(Note: Courses in the fine arts are allied to major programs in the humanities.)

THE DIVISION OF THE NATURAL SCIENCES

EUGEN MERZBACHER, Ph.D., *Chairman*

NED K. SCOTT, Ph.D., *Secretary*

Departments: Botany, Chemistry, Geography, Geology, Information Science, Mathematics, Philosophy, Physics, Psychology, Statistics, Zoology.

Special Curricula: Biology, Bachelor of Science programs in Dentistry, Medicine, Medical Technology, Applied Mathematics, and Biology.

Allied Courses in Schools: Listed in Part IV of the General Catalogue, under certain departments in the Division of Health Affairs.

(Note: Geography 38, 115, 117 are natural science courses.)

THE DIVISION OF THE SOCIAL SCIENCES

GEORGE V. TAYLOR, Ph.D. *Chairman*JOHN J. HÖNIGMANN, Ph.D., *Secretary*

Departments: Anthropology, Economics, Geography, History, Philosophy, Physical Education, Political Science, Psychology, Sociology.

Special Curricula: Industrial Relations, International Studies, African Studies, Afro-American Studies, American Studies.

Allied Courses in Schools: Business Administration 160 and 71 or 74. Certain others business administration courses may be counted for degree credit only by students majoring in economics (three only), psychology (four from 130, 150, 158, 159, 196, 197), sociology (150), and industrial relations (71, 150, and one other). Education 41, 71 (and others which may be taken only by some industrial relations majors). Journalism 146, 151, 154, 161, 165, 175, 184, 191 (170, 172 for RTVMP majors). Library Science 105, 107, 122, 123.

(Note: Geography courses except 38, 115, 117 are social science courses.)

REQUIREMENTS FOR DEGREES

Candidates for all degrees must establish eligibility as defined under "Regulations."

Bachelor of Arts

1. A minimum of forty full (three-hour) courses or equivalent. Exceptions may be made in individual cases for students who take more than the minimum requirement of courses in the natural sciences. Students enrolled in the Air Force or Naval ROTC must normally take more than the minimum number of courses. (See "Aerospace Studies" and "Naval Science.")

2. The freshman-sophomore pattern of courses required by the General College, plus a junior-senior distribution of 6 to 8 full courses in the major department, 5 to 8 courses in allied departments, and 5 to 8 courses in nondivisional departments. Courses in departments listed in more than one division (History, Philosophy, Psychology) may not be counted as both allied and nondivisional in the same program. Courses crosslisted with the major may not count as electives. Only four upper-college electives may be taken in a single subject.

3. A satisfactory major as prescribed in headnotes to department descriptions of courses. A student must earn 18 hours of C or higher (not a C average) in the major. A student who

transfers major credits must earn a grade of *C* or higher on at least three-fourths of the major courses in University residence. Transfer students must take at least half their major requirements in University residence.

4. From 120 to 122 semester hours (depending on credit value of required science courses), not counting required physical education.

With the approval of the Advisory Board of the appropriate division and the Administrative Board of the College, a program at variance from the regular divisional arrangement may be undertaken.

A student may earn the A.B. degree with a double major by taking at least three courses more than the minimum required for the usual A.B. and by meeting all major requirements in the two disciplines selected.

Bachelor of Arts with a Major in African Studies

GENERAL COLLEGE: All General College requirements must be met; a modern foreign language is required. African/Afro-American Studies 40 must be included among the College Electives. Additional recommended electives are Anthropology 41, Sociology 51, Political Science 52, Economics 31, 32, and Geography 38.

THIRD AND FOURTH YEARS: A minimum of twenty full semester courses (60 semester hours) selected in accordance with the following distribution:

CORE REQUIREMENT: African Studies 60, 70, and five to six courses to be selected from the following: Anthropology 26, 126; History 27, 28, 68, 104; Geography 168; Linguistics 171; Political Science 59, 60, 130. Majors in this curriculum must earn 18 hours of 'C' or higher (not a "C" average) in the Core courses.

SOCIAL SCIENCE ELECTIVES: Four to seven of the following courses (at least three of which must be from those in bold face): Anthropology 42, 99, **120**, 133, 167; Economics **163**; Geography **153**, 152; History 68, **69**, 101, 105, 165; Political Science 59, 148; Psychology 142; Sociology **175**.

HUMANITIES ELECTIVES: Four to seven of the following courses (at least three of which must be from those in bold face): Arabic 103-104, 111-112, 121-122, 131, 132, 141-142; Art 35, 171; Classics 91; Comparative Literature **95**; Linguistics **170**; Music **81**; Religion 93; Speech **192**; Spanish **95**; Swahili 121, 122, 131, 132; English 47, 48, 96, 148; (Folklore 185) 184; and Religion 91, 138.

CONCENTRATION REQUIREMENT: Core courses and electives must include at least six courses from a single discipline.

Bachelor of Arts with a Major in Afro-American Studies

GENERAL COLLEGE: All General College requirements must be met. African/Afro-American Studies 40 must be included among the College Electives. Additional recommended electives are Anthropology 41, Sociology 51, Political Science 41, Psychology 26, 28, and Economics 31, 32.

THIRD AND FOURTH YEARS: A minimum of twenty full semester courses (60 semester hours) selected in accordance with the following distribution:

CORE REQUIREMENT: Afro-American Studies 60, 70 and five to six courses to be selected from the following: Anthropology 133; English 84, 184; History 69, 165; Linguistics 170; Political Science 171 (Sociology 163); Psychology 142; Sociology 53.

Majors in this curriculum must earn 18 hours of "C" or higher (not a "C" average) in the Core courses.

SOCIAL SCIENCE ELECTIVES: Four to seven of the following courses (at least three of which must be from those in bold face): Anthropology 42, **120**; Economics 122; Geography 161, 152, 153, 168; History 27, 28, 68, 104, 105, 163, 164; Journalism 111, 146; Political Science 59, 60, 95, 130, 157; Sociology 91, **134**, 168, **173**, 199.

HUMANITIES ELECTIVES: Four to seven of the following courses (at least three of which must be from those in bold face): Art 171; Comparative Literature 95; English 46, 47, 48, 49, **96**, 147, 185; Linguistics 171; Music 81; RTVMP 98; Religion 32, 91, 93, 135, 138; Spanish 95; Speech 192; and Swahili 121, 122, 131, 132.

CONCENTRATION REQUIREMENT: Core courses and electives must include at least six courses from a single discipline.

Bachelor of Arts with a Major in American Studies

GENERAL COLLEGE: All General College requirements must be met. In addition, American Studies 40 (Introduction to American Studies) must be included, normally to be taken during the student's fourth semester, among the College Electives. Majors are urged to take History 21, 22 in their sophomore year. Other courses recommended as Divisional and College Electives include: Anthropology 41, Art 30, Economics 31, 32, English 23,

25, 26, Geography 48, Music 41, Philosophy 20, Political Science 41, 42, Religion 32, Sociology 51, 52.

THIRD AND FOURTH YEARS: A minimum of twenty full semester courses (60 semester hours) selected in accordance with the following distribution:

CORE REQUIREMENT (eight courses): Three from among Anthropology 121; History 145, 146, 149; Political Science 162; Sociology 168; and three from among Afro-American Studies 40; Art 171; English 81, 82; Music 135; Religion 135; American Studies 60 (American Studies Junior Seminar), 80 (American Studies Senior Seminar). American Studies 40 (Introduction to American Studies) must be taken in the junior year is not completed as a part of the General College requirements.

MAJOR REQUIREMENTS: Six to eight of the following courses, with at least two courses to be chosen from each of the three groups, and not more than four in one department. (Note that some of these courses have prerequisites.)

GROUP A: Afro-American Studies 40, Art 11, 172, Dramatic Art 31, English 42, 81, 82, 83, 84, 94, 95, 147, 188, Journalism 111, Music 81, 135, 104, Philosophy 159, 142, RTVMP 45, Religion 75, 91, 135, 138, Sociology 54, Speech 187, 188

GROUP B: Anthropology 121, 122, 135, 167, City and Regional Planning 106, 160, Economics 122, 195, 197, Geography 151, 157, Journalism 165, Philosophy 107, 109, Political Science 41, 42, 51, 75, 132, 138, 156, 171, 180, 181, Psychology 133, 134, Religion 170, Sociology 51, 52, 75, 102, 120, 163, 168, 169, 173, 181

GROUP C: Economics 135, 193, Education 143, Geography 154, History 21, 22, 75, 110, 111, 112, 113, 114, 143, 145, 146, 149, 163, 164, 165, 167, 168, Political Science 63, 145, 155, 162, 165, 166, Religion 93, Sociology 152

ELECTIVES: Five to six courses chosen from the natural sciences or courses in other divisions with major emphasis on a foreign civilization. Core courses and major courses may not be elected in this category.

Bachelor of Arts with a Major in Biology

(For details, see Curriculum in Biology in departmental listings, page 159.)

Bachelor of Arts with a Major in International Studies

GENERAL COLLEGE: All General College requirements must be met; a modern foreign language is required. The following

courses are recommended: Anthropology 41; Economics 31, 32; Geography 38; Political Science 41; Sociology 51.

THIRD AND FOURTH YEARS: A minimum of twenty full semester courses must be selected in accordance with the following distributions:

DISCIPLINARY CORE (five courses): Every major shall elect one of the following disciplinary fields:

Anthropology: (prerequisite — Anthropology 41.) Four courses to be selected from: 120, 121, 123, 135, 136, 167. The fifth course may come from the foregoing or from 126, 129, 131, 132, 133, 137, 138, 149.

Economics: (prerequisites — Economics 31, 32.) Economics 131, 132 and either 161 or 163 are required. Remaining courses are to be selected from 70, 135 or 136 (not both), 185, 195.

Geography: (prerequisite — Geography 38.) Five courses to be selected from 115, 132, 151, 152, 153, 156, 171, 183, 190.

History: Courses are to be selected from at least four fields: History of Ideas (81, 125, 126, 145, 146); Economic History (167, 168, 176); History of Science (150, 151, 152); Diplomatic History (85, 144, 172); Constitutional-Legal (142, 147, 148); Geographic Areas (Western Europe, 48, 49, 133, 134, 135, 136, 141, 123; United States, 21, 22, 163, 164; Russia-Eastern Europe, 31, 181, 182, 183, 188, 189; Latin America, 46, 47, 171, 173, 174, 177, 178, 179; East Asia, 24, 80, 193; Near East, 190, 191; Africa, 69, 155.) Relevant pro-seminars (History 90) may be substituted with approval of the International Studies Adviser.

Political Science: (prerequisite — Political Science 41.) Political Science 86 is required. The remaining four courses are to be selected from at least three fields: American government and politics (70, 75, 180); Public Administration (101, 144, 156); International Organization and Politics (88, 149, 150); Foreign and Comparative Politics (140, 143, 145, 87 or 147, 148); Political Theory (60, 161, 164, 165, 166).

Sociology: (prerequisite — Sociology 51.) Five courses are to be selected from 70, 75, 85, 102, 105, 120, 134, 161, 166, 168, 170, 186, 188.

INTERDISCIPLINARY CONCENTRATION (eight courses): The eight courses are to be distributed among at least three disciplines within a single area of concentration.

Western Europe: History 49, 123, 126, 135, 136, 141, 159;

Political Science 52, 121, 122, 125, 163; Economics 136, 195; Philosophy 20, 58, 60, 104, 153, 154, 155, 156, 158.

Slavic Europe: History 31, 181, 182, 183, 188, 189; Political Science 55, 123, 143, 163; Economics 195; Geography 165; Philosophy 104.

East Asia: History 23, 80, 81, 192, 193; Political Science 53, 124, 140; Economics 163, 195; Geography 166, 167; Philosophy 104; Anthropology 129, 138.

Latin America: History 47, 171, 172, 173, 174, 176, 177, 179; Political Science 56, 126, 127, 147, 167; Anthropology 127, 131, 132, 133; Economics 163; Geography 159, 160.

South and West Asia and Africa: History 67, 68, 69, 155, 159, 190, 191; Political Science 130, 148; Economics 163; Geography 168; Anthropology 55, 126, 137, 149.

Global: (Students will select courses from at least four disciplines.) Anthropology 136, 167, 184; City and Regional Planning 160; Economics 111, 161, 163, 195; Geography 115, 152, 153, 155; History 85, 144, 159, 172; Computer and Information Science 18, 120; Journalism 146; Linguistics 100, 101; Political Science 86, 123, 145, 149, 150, 165, 170.

NON-DIVISIONAL ELECTIVES: Seven courses including two foreign language courses beyond the General College requirement. With the adviser's approval two courses in a modern foreign language other than the language submitted in fulfillment of General College requirements may be elected.

HONORS: Students who wish to read for honors in International Studies should consult the curriculum adviser in the College of Arts and Sciences early in their junior year. Honors candidates will substitute International Studies 90 and 91 (three hours each) for two courses in the concentration.

Bachelor of Science

Four-year programs leading to the degree of Bachelor of Science provide for specialization in a particular science, necessary instruction in related fields of science, and a minimal requirement of work in English, foreign language, and other non-scientific fields.

This degree is awarded in eight fields: Applied Mathematics, Biology, Chemistry, Geology, Mathematics, Physics, Statistics, and Zoology. Junior-senior requirements for each degree are

stated in the headnote to the course descriptions of the respective department.

Bachelor of Science in Applied Mathematics

GENERAL COLLEGE: All General College requirements must be met; the following courses should be included: Mathematics 31, 32, 33, 34; Computer Science 16; Physics 26, 27, 28; French, German, or Russian 3, 4, 31 or 1, 2, 3, 4.

THIRD AND FOURTH YEARS: Mathematics 121, 122 (or 126, 127, 123, 124; Computer Science 151-152; Physics 191-192 (Mathematics 173 may replace Physics 191); Statistics 101-102. Four of the upper-college electives must be chosen from outside the Division of Natural Sciences.

In addition, students must take sufficient electives to achieve totals of 40 courses and at least 121 hours, or 39 courses and at least 122 hours, or 38 courses and at least 123 hours.

Bachelor of Science in Biology

(For details, see Curriculum in Biology in departmental listings, page 155.)

Bachelor of Science in Industrial Relations

GENERAL COLLEGE: All General College requirements must be met. Political Science 41, Psychology 26, two courses in mathematics, Economics 31, 32 (with grade of C or higher), and Sociology 51 must be included.

CORE REQUIREMENTS: Business Administration 71 or 74, 150 and one additional economics or business administration course; Economics 191, 192 (or 193); Psychology 133 or Sociology 133; History 168 (or Economics 135); one statistics course (Economics 70 or Psychology 130 or Sociology 103 or Computer Science 100).

MAJOR REQUIREMENT: Five courses selected with advice and approval of the College adviser, from one of the following fields: education, history, political science, psychology, sociology. Courses in the major must be passed with grade C or higher.

ELECTIVES: Seven courses in the natural sciences, the fine arts, and the humanities. (History courses may not be elected if the major is in history.)

Bachelor of Fine Arts

Four-year programs leading to the degree of Bachelor of Fine Arts provide, for qualified students, pre-professional train-

ing in the performing and creative aspects of the arts. Approximately one-half the program will be in the field of the major, the other half in the liberal arts and sciences.

This degree is awarded in Art and in Dramatic Art. Junior-senior requirements for the degree are stated in the headnote to the course descriptions of these departments.

Bachelor of Music

The four-year program leading to the degree of Bachelor of Music emphasizes training and achievement in the performance or composition of music. Approximately one-half the program will be in music, the other half in the liberal arts and sciences.

Junior-senior requirements for the degree are stated in the headnote to the course descriptions of the Department of Music.

DEGREES WITH HONORS

Programs providing an opportunity for honors study for qualified students are offered in all four divisions of the College. The honors programs are supervised by the individual departments. Though they are not completely uniform in the various disciplines, all have these general procedures and requirements:

1. Application for honors work: Students may be admitted to departmental honors programs on application to the departmental honors adviser in their major. Application should be made at the end of the sophomore year or as early as possible during the junior year, though exceptional cases may be approved at the beginning of the senior year. Detailed information concerning application should be obtained from the department honors adviser.

2. Requirements for eligibility: In general, an over-all grade average of B is required for admission to honors work, though exceptions may be made by the departments in unusual circumstances, with the approval of the Associate Dean for Honors.

3. Nature and purpose of honors study: These programs are provided for students whose work in the University has demonstrated a very high level of scholastic ability and achievement and who desire to pursue an intensive, individualized program of study in their major discipline. The honors student is usually exempt from one or more of the regular major courses, may participate in seminars, and will be expected to undertake special reading programs and independent research. This independ-

ent research and reading will be directed toward the preparation of an honors essay or some other individual project. In every instance, study for honors will require academic excellence. A written comprehensive examination or an oral examination, or both, are required during the second semester of the senior year. When the student has fulfilled all of those requirements, the department will recommend to the Dean of the College of Arts and Sciences that the degree be designated "with honors," or "with highest honors." A minimum over-all average of *B* is ordinarily required for the honors degree, and the degree with highest honors is conferred in recognition of extraordinary achievement in the work of the honors program and predominantly excellent course grades in the major.

4. Honors in Writing: The Departments of Dramatic Art, English, and Radio, Television, and Motion Pictures have programs leading to a degree with honors in writing.

5. Opportunities for independent study outside the framework of departmental honors programs are available. Qualified students should consult the Associate Dean for Honors.

SPECIAL TOPICS COURSES AND DIRECTED READINGS COURSES

Course numbers not restricted to honors students are provided by many departments for students interested in individual directed readings or seminars on special topics. The intention of these courses is to provide a vehicle for experimental ideas and special interests of the students and faculty. Undergraduates with ideas for the use of one of these course numbers should talk with a faculty member or the chairman of the appropriate department. Departments will cooperate, to the limit of their staff resources, with sound proposals presented sufficiently early to be included in the departmental planning of course offerings (planning for the next academic year is normally completed by March).

Anthropology 99: Special Topics for Majors (3)

Art 176: Topics in the History of Medieval Art (3)

Botany 95: Directed Reading (2-4)

Botany 96: Special Topics (2-3)

Classics 51: Topics in Classical Studies (3)

Comp Lit 95: Special Topics in Comparative Literature (3)

Dramatic Art 192: Special Studies for majors (3)

English 27: Studies in Literature (3)

English 46: Studies in Drama (3)

English 47: Studies in Fiction (3)

English 48: Studies in Poetry (3)

English 49: Studies in Literary Topics (3)
 English 96: Directed Readings in Literature (3)
 Folklore 199: Directed Readings in Folklore (3)
 French 95: Directed Readings and Special Topics in French (3)
 French 96: Seminar in French Literature (3)
 Geology 100: Special Topics in Geology (3)
 History 90: Topics in History (3)
 History 91: Independent Study in History (3)
 Italian 95: Special Topics in Italian (3)
 Linguistics 115: Topics in Linguistics (3)
 Mathematics 90: Undergraduate Seminar in Mathematics (3)
 Mathematics 95: Special Topics in Mathematics (3)
 Mathematics 98: Undergraduate Seminar in Mathematics (3)
 Mathematics 99: Undergraduate Seminar in Mathematics (3)
 Music 98: Special Studies for Undergraduates (3)
 Music 159: Studies in Music History (3)
 Philosophy 97: Advanced Colloquium for Philosophy Majors (3)
 Philosophy 99: Directed Readings (3)
 Physics 91, 92: Research and Special Topics for Seniors (2 each)
 Physics 93: Senior Seminar (2)
 Political Science 95: Undergraduate Seminar (3)
 Political Science 99: Independent Study in Political Science
 Portuguese 95: Special Topics in Portuguese (3)
 Psychology 151: Original Problems in Psychology (3)
 Religion 90: Topics in the Study of Religion (3)
 Sociology 91: Advanced Research Methods (3)
 Sociology 92: Independent Study and Reading (3)
 Sociology 199: Sociological Analysis: Special Topics (3)
 Spanish 95: Directed Readings and Special Topics in Spanish (3)
 Spanish 96: Seminar in Spanish Literature (3)
 Zoology 94: Special Topics (1-3)

SPECIAL PRE-PROFESSIONAL PROGRAMS

Students preparing for the study of law, medicine, or dentistry should consider carefully the admission policies stated in the current special catalogue of the chosen professional school.

Three types of such preparation are available in the General College and the College of Arts and Sciences: (1) regular four-year program leading to a bachelor's degree; (2) three-year non-degree program planned to meet the admission requirements of a particular school; (3) special three-year program with bachelor's degree awarded after first year of professional study.

Only students who expect to complete at least their third year of academic work (10 courses or equivalent) and their first year of professional study at the University are eligible for the special

three-year programs outlined below. Each student selecting one of these programs must assume individual responsibility for securing admission to the School of Law, the School of Medicine, or the School of Dentistry. Satisfactory completion of the stated quantity of academic work does not assure admission to the professional school.

Bachelor of Arts and Laws

GENERAL COLLEGE: All General College requirements must be met. These must include Political Science 41 and one additional political science course; Psychology 26; Economics 31, 32.

THIRD YEAR: History 21, 22 (or 44, 45); Speech 37; English 30 or some other English course; seven additional courses.

Bachelor of Science in Medicine¹ or in Dentistry

GENERAL COLLEGE: English 1, 2; Chem. 11-11L, 21-21L, 41-41L, 42-42L, 61, 62; Botany 11; two courses in mathematics; three social science Divisional Electives; three humanities-fine arts Divisional Electives; three College Electives; required physical education.

THIRD YEAR: Physics 24, 25; Zoology 11, 41; Psychology 26; four non-divisional electives.

Bachelor of Science in Medical Technology

The School of Medicine offers jointly with the College of Arts and Sciences two programs leading to the Bachelor of Science in Medical Technology.

The first of these programs consists of a four-year collegiate curriculum followed by a year of practical experience and training in a hospital to qualify the student for an examination offered by the Registry of Medical Technologists of the American Society of Clinical Pathologists. Although the fourth year must be taken in the College of Arts and Sciences, the additional year of medical training does not necessarily have to be taken at the Memorial Hospital of The University of North Carolina at Chapel Hill, and the successful completion of the collegiate portion of the program does not guarantee admission to training in the hospital.

At least eighteen semester hours of grade *C* or higher are required from the following: Chemistry courses numbered above

1. A few students with superior academic credentials may qualify for a B.S. in Medicine Degree. Eligibility for this degree is dependent upon (a) admission to the School of Medicine, (b) completion of at least the last year of premedical work at the University of North Carolina, Chapel Hill, and (c) evidence of a satisfactory performance in the first year of the School of Medicine. This program is not intended to indicate the minimum requirements for admission nor to represent an especially desirable premedical curriculum.

21, zoology courses numbered above 42, bacteriology and pathology courses.

In the second of these programs the student takes a prescribed curriculum for two years in the General College (or its equivalent elsewhere) and one year in the College of Arts and Sciences of the University. The fourth year consists of a twelve-month course in medical technology in the School of Medicine; both the third and four years must be taken in the University. The completion of the first three years of this program does not assure admission to the twelve-month course in medical technology in the School of Medicine. Only the most promising applicants can be chosen to fill the limited number of vacancies in the medical technology course. The schedules of academic work for both programs follow:

GENERAL COLLEGE: English 1, 2; Chemistry 11-11L, 21-21L, 41-41L, 42-42L, 61, 62; Biology 21, 22 or Botany 11 and Zoology 11; two courses in mathematics; two social science Divisional Electives; two humanities-fine arts Divisional Electives; three College Electives; required physical education.

THIRD YEAR: Bacteriology 51 or 55; two courses from Bacteriology 132, 161, Zoology 103, 104, 105, 110, 117, Biochemistry 100, Public Health 134, Botany 11, Physics 24, 25; six additional courses, including three non-science electives.

FOUR-YEAR ACADEMIC PROGRAM: All the requirements for the three-year program; Physics 24, 25; non-science courses representing nine hours; unrestricted electives representing fifteen semester hours. Students in both three-year and four-year programs must take a minimum of 16 semester hours in the biological sciences.

THE SCHOOL OF BUSINESS ADMINISTRATION

MAURICE WENTWORTH LEE, Ph.D., *Dean*

CLAUDE SWANSON GEORGE, JR., Ph.D., *Associate Dean*

DAVID MCFARLAND, Ph.D., *Chairman of the Department of Economics*

GENERAL STATEMENT

Although courses of instruction in economics and in certain business subjects had been offered for many years in the University at Chapel Hill, not until 1919 was a comprehensive, well-organized business curriculum established. In that year the General Assembly, in conformity with the recommendation of the President of the Board of Trustees, enacted the legislation which resulted in the organization of the School of Commerce. The name of the School was changed in 1950 to the School of Business Administration. The School occupies a place in the University organization coordinate with other professional schools and the College of Arts and Sciences.

In 1923 the School was admitted to membership in the American Association of Collegiate Schools of Business, an organization dedicated to the promotion of high standards in professional education for business. Membership is based on the number and caliber of the faculty; the thoroughness of the academic program offered; the content and breadth of the curriculum, both in general education and in business; the financial support of the School; and the physical facilities provided for carrying on the work. The undergraduate course of study, leading to the degree of Bachelor of Science in Business Administration, covers a period of four years, except in accounting which is a four and one-half year program. It is designed to give a foundation of general education in the natural sciences, the humanities, and the social sciences, as well as to supply a professional background to those who intend to engage in business administration.

For those desiring work at a more advanced level in business administration, the Graduate School of Business Administration offers courses leading to the degrees of Master of Business Administration and Doctor of Philosophy.

PURPOSE AND POLICY

The continuing economic development of the South has produced an imperative need for trained businessmen. The School of Business Administration, in a large sense, is the expression of the University's desire to serve this need. Substantial support

has been accorded the School by both the University and the state as a whole. The School has been provided with a well qualified instructional staff. The school is housed in a quadrangle of three modern buildings offering outstanding classroom and laboratory facilities.

The teaching policy of the School assumes that effective education for business responsibility should consist not only of development of understanding of the principles and methodology which govern the organization and administration of individual business enterprises, but also of an understanding of the problems and the larger relationships of the economy as a whole. In his attempt to master the more specialized aspects of business, the student is not permitted to lose sight of social and other cultural values. Instead, the curriculum in business administration is founded upon the realization that an effective career of business leadership must be based upon a broad cultural foundation. The exacting demands which face the modern business executive requires that he possess more than a high degree of professional competence in technical and specialized aspects of business administration. He must also have a broad grasp of general business fundamentals and must have a full awareness of the economic, social and human forces which form the background against which his business career will be pursued. In short, the effective business executive must, first of all, be a responsible, informed, and perceptive citizen.

For these reasons, the program in business administration has been carefully formulated to maintain a balance between the equally important needs of general education and of professional education for business responsibility. Whenever possible, therefore, the plan is followed of presenting the subject matter of the various courses from the point of view of the administrator, always bearing in mind that his field of interest includes the broad external relationships as well as the internal administration of his business. Adherence to this point of view enables the student to consider the problems and practices of business in a broad perspective.

The program leading to the degree of Bachelor of Science in Business Administration has been carefully coordinated with the required two-year program of the General College, described on page 35. The undergraduate program in business administration places further emphasis upon intellectual breadth by requiring that each student take a core of six courses in fundamental business subjects, supplemented by appropriate elective courses in areas outside business administration.

THE SCHOOL OF EDUCATION

NORTON LEWIS BEACH, Ed.D., *Dean*

NEAL H. TRACY, Ed., *Associate Dean*

ROY E. HARKIN, Ph.D., *Associate Dean*

GENERAL STATEMENT

Undergraduate students who wish to prepare for teaching in the elementary school or in the secondary school will be admitted to the School of Education in accordance with the procedure stipulated by the School of Education. Transfer of junior standing from other institutions will be admitted as stipulated under "The Admissions Process," pages 21-33.

Each student will select courses in his major field of concentration to meet the requirements for graduation from the University and will take courses in education to meet teacher certification requirements.

Curricula which meet the requirements of the State Board of Education for certificates to teach in the public schools of the various states are administered by the School of Education in cooperation with the academic departments of the University. Majors are offered and certificate requirements are met in art, elementary education, English, foreign language (French, German, Latin, Spanish), health education and physical education, science (earth science, biology, chemistry, physics), mathematics, music, distributive education, speech, special education, junior high school and social studies (economics, history, political science, geography, sociology).

DEGREES OFFERED

The following degrees are awarded to students completing undergraduate programs of study in the School of Education: Bachelor of Arts in Education (Secondary); Bachelor of Arts in Education (Elementary); Bachelor of Music Education; Bachelor of Science in Science Teaching (Secondary); Bachelor of Science in Health Education. Freshman-sophomore requirements for these programs are stated under "The General College."

GRADUATION REQUIREMENTS

In addition to the general University requirements for graduation stated in "Regulations" of this bulletin, a student who secures a degree in the School of Education must meet each of the following:

1. A minimum of 124 semester hours credit.
2. A minimum of forty courses twenty of which should be of junior-senior standing.

3. The freshman-sophomore pattern of courses required by the General College and a distribution of courses in the junior and senior years that meets the requirements for the student's particular major pattern as described below.

4. A satisfactory teaching major in elementary education, in junior high school education, or in teaching one of the subject areas at the secondary school level.

5. A grade of *C* or better on all professional course work in the School of Education and on at least 18 semester hours of work in the major teaching field.

PROFESSIONAL PROGRAM

The professional program designed to meet the certification requirements has been organized around three areas of study—*The School, The Pupil, and Teaching (The Practicum)*. The content of the courses, which of necessity cuts across these areas, has been organized to eliminate unnecessary duplication. The materials used and the activities engaged in through these courses offer a variety of individual and collective experiences. Schools are visited, classrooms are used for observation of student growth, teachers are interviewed for professional development, and community activities are observed.

The following professional courses are listed in this bulletin for credit toward graduation:

Elementary Students:

Ed. 41. EDUCATION IN AMERICAN SOCIETY (3). (*The School*).

Ed. 52. MATERIALS AND METHODS IN THE LANGUAGE ARTS (3).

Ed. 71. EDUCATIONAL PSYCHOLOGY (3). (*The Pupil*).

Ed. 72a. ADOLESCENT GROWTH AND DEVELOPMENT (3). (*The Pupil*).

Ed. 61. THEORY AND PRACTICE OF TEACHING IN THE ELEMENTARY SCHOOL. (6). (*The School, Methods and Materials, Practicum*).

Ed. 62. STUDENT TEACHING IN ELEMENTARY SCHOOL. (6).

Special Education Students:

Ed. 41. EDUCATION IN AMERICAN SOCIETY (3). (*The School*).

Ed. 52. MATERIALS AND METHODS IN THE LANGUAGE ARTS (3).

Ed. 71. EDUCATIONAL PSYCHOLOGY (3). (*The Pupil*).

Ed. 72a. CHILD GROWTH AND DEVELOPMENT (3). (*The Pupil*).

Ed. 65. THEORY AND PRACTICE OF TEACHING THE MENTALLY RETARDED IN THE ELEMENTARY SCHOOL (6). (*The School, Methods and Materials, Practicum*).

Ed. 66. STUDENT TEACHING IN ELEMENTARY SCHOOL (6).

Secondary Students:

Ed. 41. EDUCATION IN AMERICAN SOCIETY (3). (*The School*).

Ed. 71. EDUCATIONAL PSYCHOLOGY (3). (*The Pupil*).

Ed. 72b. ADOLESCENT GROWTH AND DEVELOPMENT (3). (*The Pupil*).

—APPROPRIATE COURSES IN THEORY AND PRACTICE OF TEACHING. (*The School, Methods and Materials, Practicum*) (12).

Program in Secondary Education

In addition to the professional courses from the field of education outlined above, all students in the program of secondary education will meet the requirements in the fields of their specialization by following the programs outlined below. The requirements for each of the certificate areas recognized by the North Carolina State Department of Public Instruction are included below. Similar certification requirements exist in other states, but students planning to teach outside of North Carolina should consult with their advisers in the School of Education with regard to specific requirements.

ART

Students who choose art as their major teaching field are required to have a minimum of thirty-nine semester hours in art. The specific courses are as follows: Art 30, 44, 46, 49, 61, 63A, 63B, 84, 153, and one other Art History course, plus any three other art courses, one of which shall be at the one hundred level.

Students are encouraged to take up to 6 hours of craft study at Penland during summer sessions. The Art Department of UNC Chapel Hill does not concentrate on crafts and future teachers will strongly benefit from experiences at Penland. Arrangements have been made for this credit to transfer as part of the requirements in Art.

DISTRIBUTIVE EDUCATION

Students who choose distributive education as their teaching field will take the following courses or alternates which are approved by their adviser:

Economics 31, 32; Business Administration 91, 160, 165; Geography 152; three courses from the following group: Business Administration 71, 72, 130, 150, 161, 162, 166, 180, Economics 81; one course from the following: Art 61, English 32, Psychology 26, Sociology 51, Speech 40.

ENGLISH

Students who choose English as their teaching field will take the following:

English 1-2, 21, 30, 36, 58, and 81 or 82; Speech 40 or 41; one of the following: English 52, 54, 60, 64, 66; one of the following: English 72, 73, 78; two electives in literature (one of these may be taken during the freshman or sophomore year).

FRENCH

Students who choose French as their major teaching field should take, in addition to French 3-4 and 21, the following:

French 50, 51, 52, 53, 60, 61, 145.

GERMAN

Students who choose German as a major teaching field should take, in addition to German 3, 4, and 21, the following:

German 22, 31, 32, 90, 145.

Three courses in German literature approved by the adviser.

HEALTH AND PHYSICAL EDUCATION

Students who choose health and physical education as their teaching field will take the following:

Physical Education 75, 76, 77, 78, 79, 86, 87, 88, 89.

In addition, men will take Physical Education 65, 66, 67; women will take Physical Education 55, 56, 57.

HEALTH EDUCATION

Students who choose health education as their teaching field will take the following:

Anthropology 41; Bacteriology 51 or 151; Zoology 11, Psychology 26; Sociology 51 and 52 or 62; Education 176 or Public Health 135; Public Health 18, 19, 110a, 110b.

LATIN

Students who choose Latin as their major teaching field will take the following:

Latin, 3-4, 21, 71, 81, 82.

Four of the following: Latin 51, 52, 53, 54, 55, 56, 57, 58, 59.

MATHEMATICS

Students who choose mathematics as their teaching field will take the following:

Mathematics 31, 32, 33, 34; Mathematics 134, or 136; Mathematics 117 or 131.

In addition to the above, at least three courses in Mathematics numbered 120 or above must be taken. Probability, geometry, and advanced calculus are recommended.

MUSIC

Students who choose music as their teaching field will take the following courses or their equivalents. Several of these courses are ordinarily taken during the student's first two years of college work.

Music 11, 31, 32, 50, 51, 52, 53, 54, 55, 56, 57, and 68; one music elective; (Music) Education 120; Applied Music as follows: Major, 4-7 semesters with satisfactory performance standard; Minors, as required; Ensemble, 7 semesters.

NATURAL SCIENCE

Students who choose science as their teaching field will, upon completion of the prescribed program, be awarded the B. S. in Science Teaching degree. All science courses taken while the student is in the General College may count toward the college degree requirements. Students who choose this program are encouraged to complete at least four science courses while in the General College.

Students who choose the B.S. in Science Teaching degree program must complete foundation courses and must select one science teaching field as a major:

Foundation Courses: Botany 11; Chemistry 11, 21-21L; Geology 11 or 41; Mathematics 15 and 31; Physics 24-25; and Zoology 11.

In addition to the above foundation courses or their equivalents, the student will select one of the following major programs:

Biology: Bacteriology 51, Chemistry 41-41L, 61, 2 electives in Botany, and 2 electives in Zoology.

Chemistry: 41-41L, 42-42L, 51, 61-62; 2 electives in Chemistry; Astronomy 31 or Physics elective.

Physics: Astronomy 31, Mathematics 32; Physics 54, 55, 58, 101, and one elective in Physics.

Earth Science: Geology 42, 101, 110, 111, and one Geology elective; Astronomy 31; Geography 38.

SOCIAL STUDIES

Students who choose social studies as their teaching field must have the following courses or their equivalents:

Modern Civilization 1-2.

History 21, 22

Four additional history courses numbered above 50 with two from the area of European or world history and two from the area of American history.

The following courses or alternates approved by their adviser in the School of Education:

Political Science 41 and 86 or 88.

Sociology 51 and Sociology 70 or 75 or 122 or Anthropology 135 or 136.

Economics 31 and 32

Geography 152 or 153 and one of the following: 154, 157, 158, 159, 162, 175, 181, 182.

SPANISH

Students who choose Spanish as their teaching field will take the following:

Spanish 3-4, 21, 50, 51, 52, 71, 72, 145, and one Spanish elective numbered above 50.

SPEECH

Students who choose speech as their teaching field will take the following courses or alternates which have been approved by their adviser:

Speech 40, 41, 44, 183

Speech 45 or 54 or 87

Speech 50 or 140 or 170

Dramatic Art 31 or 51 or 63

RTVMP 60 or 40 or Speech 141

Any combination of additional courses in speech, dramatic art and RTVMP to make a minimum total of 30 semester hours.

**Program for Students Planning to Become Early
Childhood or Intermediate Teachers**

Graduation with a degree in early childhood or intermediate education requires at least 40 courses and 120 semester hours of credit, not including required physical education. Upon successful completion of these requirements, the candidate is granted a class "A" teacher's certificate. The distribution of these required semester hours is shown below for each of the respective areas of study.

The course of study for each of the two programs is designed to prepare teachers for different grade level responsibilities: the early childhood program for teachers in kindergarten through grade three; the intermediate program for teachers in grades four through nine. The programs are distinctive in nature both in reference to the specific focus of the respective courses and in the state department requirements for certification.

The approved courses of study for the Early Childhood and the Intermediate programs are presented below.

EARLY CHILDHOOD CERTIFICATE

Kindergarten — Grade 3

General Education and Subject Matter Preparation

a. Language Arts	15
English 1 and 2 — Basic Grammar and Composition	6
Library Science 93 — Children's Literature	3
Literature	3
Speech 191 — Speech Development in the Child	3
or	
Speech 192 — Speech of the Culturally Disadvantaged (Speech training for prospective teachers where indicated)	3
b. Social Sciences	21
History 21 — American History	3
History 22 (or other contemporary American History)	3
Geography (one course)	3

Political Science 41 — Introduction to Government in U.S.	3
Anthropology 41 — General Anthropology (or its equivalent)	3
Sociology 161 — The Family	3
Psychology 26 — General Psychology	3
c. Natural Science	7
1 Biological Science (Psychology not counted here)	4 or 3
1 Physical Science	4 or 3
(One must be a laboratory science)	
d. Mathematics	6
Math 17	3
Math 18	3
e. Arts	12
Art 45	3
Art 30 (or other art appreciation)	3
Music 4	3
Music 41 (or other music appreciation)	3
f. Health and Physical Education	8
P.E. 83a	3
P.E. 84	3
P.E. (2 service courses)	2

Professional Education

Education 41
Education 52
Education 71
Education 72a
Education 61
Education 62

Total Number of Credit Hours Required

69 General Education
24 Professional Education
12 Recommended Electives*
15 Electives

120 Hours

*Recommended electives: Psychology 26, Psychology 126, Education 135, Education 180.

INTERMEDIATE CERTIFICATE

Grades 4-9

The North Carolina guide lines for certification require that all students obtaining an Intermediate Certificate have a General Education program and at least one area of concentration in a content or academic area as The Language Arts, Mathematics, Science, or the Social Studies. A second area of concentration is recommended. The second area may be selected from the other remaining content fields or in areas as Library Science, Reading, Special Education, Art, Music, or Physical Education.

General Education and Area of Concentration

Column 1: appropriate general education for all students

Column 2: minimum number of academic hours required in the concentration area, including hours in column 1.

<i>Areas of Study</i>	<i>Column 1</i>	<i>Column 2</i>
I. Language Arts	15	<i>Concentration: Any 5</i> 30
<i>General Education</i>		
Eng. 1, 2		courses may be selected
1 Literature course		from English, Speech, or
Lib. Science 93		Dramatic Arts with a
Education 52		minimum of 2 literature
-----		courses and English 36 or
Speech training where		38. Students may want to
indicated		consider a focus on the
		literature of American or
		non-American cultures.
II. Social Sciences	18	<i>Concentration: Any 5</i> 33
<i>General Education</i>		
1 Contemporary Am.		courses may be selected
History such as		from the departments of
Hist. 22, 114, 115,		history, Political Science,
or 146		Sociology, Anthropolgy,
1 non-American history		Economics or Geography, with
Pol. Sci. 41		a minimum of 2 history courses,
2 courses in or combined		one to be Hist. 21. These
from Sociology, Eco-		courses may all be within one
nomics, Anthropology,		department or a combination
Geography		from 2 or more departments.
Psychology 26		Students may want to focus on
		American or non-American cul-
		tures.
III. Natural Sciences	7-8	<i>Concentration: Any 5</i> 22-23
<i>General Education</i>		
1 Biological Science		courses or a total of 15 hours
(Psychology not		selected from the departments
counted here)		of Astronomy, Botany, Geology,
1 Physical Science		Chemistry, Physics, or Zoology.
One must be a lab science		Students may want to select a
		combination of science courses
		which would focus on the inter-
		relationships between the
		physical and biological com-
		ponents of the environment.
IV. Mathematics	6	<i>Concentration: Any 5</i> 21
<i>General Education</i>		
Math 17		courses from the department
Math 18		of Mathematics. The fol-
		lowing courses are recom-
		ended: Math 31, 32, 33,
		117, 134.
V. Fine Arts	6	<i>Concentration: Any 5</i> 18
<i>General Education</i>		
Any 2 courses in the		courses or a total of 15
Arts		hours from the department
		of Art or Music.
VI. Health and P. E.	8	<i>Concentration: P.E. 77, 86,</i> 20
<i>General Education</i>		
P.E. 83 — Intermediate		and two courses from P.E.
Grades		55, 56, 57 (for women) or
P.E. 84 — Intermediate		65, 66, 67 (for men). Science
Grades		requirement for this area is
P.E. 2 Service Courses		taken care of in the General
		Education requirement for
		Science.

<i>Professional Education:</i>		21 hours
Education 41	3	
Education 71	3	
Education 72	3	
Education 61	6	
Education 62	6	

Total Number of Hours Required

57 General Education
15 Concentration in Content Areas
21 Professional Education
27 Electives and/or second Area of Concentration

120 Hours

Recommended electives: Education 135, Education 180.

Some of the required courses listed in the above early childhood or intermediate program should be completed during the first and second year of the college program.

Prior to the senior year the early childhood or intermediate education major will have courses entitled "Education in American Society," "Educational Psychology," and "Materials and Methods in the Language Arts." The latter course, the "Language Arts," should be taken the semester immediately preceding enrollment in the student teaching block.

One full semester of the senior year is devoted to professional courses. In the first part of the semester the student will register for courses entitled "Child Growth and Development," and "Theory and Practice of Teaching in the Elementary School." These courses are organized into a block of time which requires an entire morning. Afternoon laboratories are arranged for the courses when appropriate.

During the last part of the semester the student is assigned to a classroom in a public school for full-time observation and student teaching. The student teaching is considered an extension of the methods course and is carried out under close supervision by one of the staff members who worked with the student in the first part of the semester.

This program qualifies the graduate for certification in North Carolina and in most other states. In instances when the student knows that he will teach in another state he should refer to the requirements listed by the State Department of Education of that state for guidance.

PROGRAM IN SPECIAL EDUCATION

The School of Education offers an undergraduate program of study leading to a major in special education of the mentally retarded and to North Carolina state certification as a public school teacher of special education.

The specialized courses in the undergraduate program con-

stitute thirty (30) units of concentration within the senior year. Completion of the General College requirements (freshman and sophomore years) enables students to be admitted to the School of Education. When students decide to major in special education, they are assigned a faculty adviser from the special education staff. Ordinarily, however, special education majors will be advised to complete, by the end of the junior year, all the subject-matter requirements outside the School of Education which are described under the Program in Elementary Education. In addition, they will be expected to take, during the junior year, Education 41 (Education in American Society) and Education 71 (Education Psychology). Graduation requirements (124 semester hours, minimum of forty courses) are the same as for other students in the School of Education. Summer courses, prior to or immediately following the senior year program, may be utilized when necessary to fulfill requirements, except that Education 41 and Education 71 must be taken before beginning the senior year.

Throughout the entire program, special education majors will receive frequent opportunities and encouragement to observe, visit, and work with exceptional children in clinic, child development center, institutional, and public school settings.

During the fall semester, seniors are required to take the following three-unit courses:

Education 180. INTRODUCTION TO EXCEPTIONAL CHILDREN

Education 185. PSYCHOLOGY OF MENTAL RETARDATION

Education 176. MENTAL HYGIENE IN TEACHING

Education 52. MATERIALS & METHODS IN THE LANGUAGE ARTS

Elective in

Special Ed. Ordinarily Psychology 276. Problems of Maladjustment Among Children.

The spring semester for senior students is organized as a student teaching block, with two distinct phases of eight weeks each. During the first phase the students register for Education 72a (Child Growth and Development, three hours) and Education 65 (Methods and Materials of Teaching Mentally Retarded Children, six hours). Guided observation and limited participation, which was begun during the fall semester, is intensified during this period. During the second phase of the spring semester, students are full-time student teachers under the direction of both University faculty and the local participating teacher. Student teaching placement is ordinarily made within a fifty-mile radius of Chapel Hill.

State and federal scholarships, fellowships, and traineeships are available to both graduate and undergraduate students. Contact the Special Education Program, 121 Peabody Hall, for further details.

THE SCHOOL OF JOURNALISM

JOHN BERRY ADAMS, Ph.D., *Dean*

GENERAL STATEMENT

The School of Journalism, founded as a department in 1924 and changed to School status in 1950, offers a two-year course leading to the A.B. in Journalism.

The School is accredited by the American Council on Education for Journalism, which approves its News-Editorial sequence, the only curriculum offered.

Students who have completed two years of liberal arts courses are admitted provided they have met the requirements of the General College. Because of the nature of class and laboratory assignments, students should be able to type with reasonable accuracy and speed.

The School also offers a major in journalism, leading to the A.M. degree in the Graduate School, and a graduate minor for candidates for the A.M. and Ph.D. degrees in English, history, political science, psychology, sociology and other departments by arrangement. In addition, the School is the administrative center for an interdepartmental program leading to the Ph.D. degree with a major in Mass Communication Research.

The undergraduate academic program of the School of Journalism, including the two years of liberal arts required for admission, is designed to provide students with (1) a basic liberal education, (2) an understanding of the responsibilities of a free press in a democratic society, and (3) a fundamental knowledge of journalistic techniques.

Students are encouraged to acquire a background in the humanities, the social sciences, and the natural sciences while preparing for journalism careers. The program of the School prepares students for editorial and advertising positions on newspapers and magazines, for radio and television news writing posts, and for a variety of other positions demanding skill and judgment in preparing communication addressed to the public.

Candidates for the A.B. in Journalism are required to take eight courses in journalism. In addition, they must take: (1) Political Science 41; (2) introductory courses in two of the following fields: economics, psychology, or sociology; (3) two advanced courses in American or North Carolina history; and (4) two advanced courses in one of the following fields: economics, political science, sociology, or psychology. Political Science 41

and the introductory courses in the other social sciences should be taken in the General College or in the case of transfer students in the sophomore year on other campuses. If not taken in the sophomore year, these courses must be taken in the junior year.

Journalism staff members are available to advise pre-journalism students concerning elective courses in the General College. Students planning to transfer from other institutions are urged to note General College requirements and meet them in their institutions.

The School of Journalism Foundation of North Carolina, Inc., was established in 1949 to promote the advancement of professional education for journalism at the School of Journalism. Income from the Journalism Foundation endowment is expended for that purpose at the discretion of the Dean. Major expenditures have been for undergraduate scholarships, graduate assistantships, and subscriptions to newspapers and magazines.

Journalism and pre-journalism students interested in extra-curricular activities are encouraged by the School of Journalism to work on *The Daily Tar Heel*, student newspaper, and on *The UNC Journalist*, the School's laboratory newspaper.

For further information, write to the Dean of the School of Journalism for the separate journalism bulletin.

THE SUMMER SESSION

DONALD GENTRY TARBET, Ed.D., *Director*

GENERAL STATEMENT

One of the earliest summer schools in America was established at The University of North Carolina at Chapel Hill in 1877. Eighteen sessions were held during the next thirty years. The Summer Session has operated annually since 1907 and has come to be an integral part of the academic organization of the University.

Curricula and courses that are offered during the Summer Session in all departments, schools, and colleges are identical with those of the fall and spring semesters. With a few exceptions, students may make progress toward fulfilling requirements for all undergraduate and graduate degrees offered by the University. All academic matters and all matters involving student activities in the summer are under the direction of the deans and departmental chairmen who handle these areas in the fall and spring semesters.

The Summer Session is divided into two terms of approximately six weeks each. Students who want to accelerate may graduate in three years by year-round study.

ADMISSIONS

The summer program is planned especially to meet the needs of the following groups: (1) graduates of accredited high schools who are entering the freshman class, (2) undergraduate and graduate students who are meeting degree requirements at this institution, (3) undergraduate and graduate visiting students who desire to take courses for transfer to other institutions, (4) teachers and administrators who desire to meet state certification regulations, and (5) other students who have special educational objectives and are not applicants for credit toward a degree.

Persons who desire to be admitted or readmitted in the Summer Session as regular undergraduate students should write to the Director of Admissions and as regular graduate students to the Dean of the Graduate School. Those who desire a copy of the Summer Session catalogue or other information and those who desire to enroll in the summer as visiting students should write to the Director of the Summer Session, 102 Peabody Hall, The University of North Carolina at Chapel Hill.

A University (at Chapel Hill) student needing work in the summer session to restore academic eligibility, must apply to the Director of Undergraduate Admissions, 101 Vance Hall.

THE SCHOOL OF NURSING

LUCY HOUGHTON CONANT, B.A., M.N., R.N., M.P.H., Ph.D., *Dean*

As a school in the Division of Health Sciences, the School of Nursing benefits from the contributions of personnel and facilities in various divisions and schools of the University. Teaching, research, and library facilities are used cooperatively to provide students with a broad general education, as well as preparation in professional nursing. Both undergraduate and graduate students in nursing take courses taught in other departments and schools in the University. The physical facilities of the University campus are available for use by students in the School of Nursing.

The School of Nursing is accredited by the North Carolina Board of Nursing and the Collegiate Board of Review of the National League for Nursing.

THE UNDERGRADUATE PROGRAM

The School of Nursing offers a program of study designed to provide well-organized learning experiences leading to the graduation of students who have acquired the necessary knowledge, skill, and understanding to function effectively as professional nurses in all areas of nursing. The curriculum, leading to the degree Bachelor of Science in Nursing, includes two years of lower division courses and two years plus two terms of one summer session in the School of Nursing. Applicants for admission as junior transfer students will be considered with 51 semester hours of transferable credits. It is preferable that the candidate for transfer has successfully completed a general education for the first two years comparable to that outlined in the curriculum description.

CURRICULUM

The lower division requirements include 20 courses which are offered to students in the General College. The courses may be taken at any college or university and must be approved by the Admissions Office of the University of North Carolina at Chapel Hill as being comparable to the courses offered on this campus.

Course	Number of Semesters	Number of Semester Hour Credits
English 1, 2	2	6
Mathematical Science	2	6
Physical Education	2	2

Language 1, 2	2	6
Social Sciences*	3	9
Two courses must be in Anthropology and/or Sociology.		
Humanities and Fine Arts*	3	9
Natural Sciences		
Chemistry 11 and 12, or		
Biochemistry 7 and 8	2	8
Zoology 11 and 41**	2	8
Psychology	1	3
Electives	3	9

The upper division requirements include:

Physiology 91	1	5
Bacteriology 55	1	4
Nursing	12	52
Upper division Sociology	1	3
Upper division Psychology	1	3
Electives	2	6

THE NURSING COMPONENT

All nursing courses are offered at the upper division level. The classroom and clinical experiences present an integrated approach to nursing in which the student moves from the simple to the more complex nursing activities and from practice with individuals to practice with families and groups. The nursing courses include concepts from each specialty area: medical-surgical, maternal-child, psychiatric, and public health nursing but no one course can be identified as a specialty course.

THE FRESHMAN

High school graduates may enter the School of Nursing as freshmen or may enter the General College and transfer into the School of Nursing in their junior year on this campus. The entrance requirements of the General College must be met including the taking of the aptitude tests of the College Entrance Examination Board and satisfactory high school work in:

- English (4 units)
- College Preparatory Math (3 units)
- Foreign Language (2 units)
- Social Science (1 unit)
- Electives (5 units)

*The three courses must be in at least two departments.

**Zoology 41 includes vertebrate anatomy and physiology and uses A. C. Guyton's *Functions of the Human Body* as a text.

The credentials of the applicant are first approved by the Director of the University Office of Admissions and then by the School of Nursing Admissions Committee. Applicants may be invited for interviews in the School of Nursing. In the selection of students consideration is given to such interviews as well as application information, pre-entrance tests, health record, scholastic records, personal references, and apparent qualification for the study of professional nursing.

THE JUNIOR TRANSFER

The applicant should contact the School of Nursing about the possibility of transfer from a junior or community college or a four year institution at the earliest opportunity so that credits and time will not be lost. While applicants are encouraged to complete a course of study comparable to the curriculum description for the first two years to qualify for transfer, freshmen and sophomores at other schools may preregister for admission to the School of Nursing. Final entrance is dependent on University admission and successful completion of required courses. The student is advised to write the Office of Admissions and request information on courses which will transfer to the nursing program and satisfy curriculum requirements. Substitutions and postponements for courses are possible; however, the University's policies on transfer students will be maintained. Applicants for admission as junior transfer students will be considered with 51 semester hours of transferable credits.

THE REGISTERED NURSE

The registered nurse, graduated from an approved diploma or associate degree nursing program, is encouraged to enroll in the baccalaureate nursing program at the University of North Carolina at Chapel Hill. The nurse, registered in North Carolina or another state, will have essentially the same academic requirements for receiving the Bachelor of Science in Nursing degree as other students.

The R.N. is encouraged to enter the program at either the freshman or sophomore level in order to plan a course of study which will promote completing the requirements in as short a time span as possible. Exemption examinations in nursing courses going up to, but not including, the second semester senior courses are offered to the nurse after admission. In the General College some exemption examinations are offered departmentally. Length of time for program completion depends on the academic situation of the individual student. Those registered nurses

with questions regarding their academic situation should contact the School of Nursing.

Note: The faculty of the School of Nursing also wishes to broaden its student group to include Negroes and other minority group members, men, and mature individuals seeking a new career.

FINANCIAL AID

Students entering as freshmen to the University, transfer students enrolling in the School of Nursing as juniors, or registered nurses seeking the baccalaureate degree at the University of North Carolina at Chapel Hill may apply for the James M. Johnston Scholarships and Awards in Nursing Education. Johnston Scholars in nursing are of high potential to nursing and demonstrate scholastic merit. Johnston Awards in Nursing are based on financial need and merit.

Other scholarships and loan funds for deserving students are made available by private and other funds in the School of Nursing. Interest in financial aid should be indicated when the student applies for entrance to the School of Nursing.

THE SCHOOL OF PHARMACY

GEORGE PHILIP HAGER, Ph.D., *Dean*

LEROY D. WERLEY, JR., M.H.A., *Assistant Dean, Student Affairs*

DAVID R. WORK, J.D., *Assistant Dean, Fiscal Affairs*

GENERAL STATEMENT

The School of Pharmacy was established as an academic unit of the University of North Carolina in 1897 in response to urgent requests from the pharmacists of North Carolina. After many years in Howell Hall (named in honor of the School's first dean, Edward Vernon Howell), the School now occupies a modern, well-equipped building, Beard Hall (dedicated in 1960 and named in honor of the School's second dean, John Grover Beard). The School of Pharmacy is located in a medical center on the Chapel Hill campus and, with the Schools of Medicine, Dentistry, Public Health, and Nursing, it is a unit of the University's Division of Health Sciences.

The School benefits from the excellent resources, both on and off the campus, that are required for a center of excellence for pharmaceutical education, research and service.

In its educational program, emphasis is given to the curriculum required for the Bachelor of Science in Pharmacy degree (B.S. in Pharm.). A five-year curriculum for this degree became mandatory in all schools of pharmacy starting in 1960 through actions taken by the American Association of Colleges of Pharmacy and the National Association of Boards of Pharmacy. This curriculum is designed and administered in accordance with the current and changing demands for pharmaceutical services in communities and institutions. The School's undergraduate pharmacy curriculum is up-to-date. It is broad and deep with respect to general education, training in the basic sciences and the pharmaceutical sciences, and professional principles and practices. It is administered with the flexibility necessary to accommodate the varying aspirations of individual students and, at the same time, with adequate rigidity to qualify the students as candidates for licensure as Registered Pharmacists and in every way for the important and expanding role of the pharmacist as a health professional. The graduate of the B.S. in Pharm. degree curriculum is qualified and motivated for the practice of clinical pharmacy (community pharmacy and institutional pharmacy), for professional and technical careers in industry and government, and for further study leading to advanced degrees in the pharmaceutical sciences and related physical, biological, and biomedical sciences.

The School offers the M.S. and Ph.D. degree candidates and postdoctoral participants coursework and research training and experience in the pharmaceutical sciences, especially pharmacy (biopharmaceutics, physical pharmacy, and hospital pharmacy) and medicinal chemistry.

The School also engages in the continuing education of pharmacists and pharmaceutical scientists and technologists, supporting their efforts to an expanding and dynamic science and technology.

The faculty, staff and students of the School of Pharmacy are actively involved in research and other scholarly pursuits in the professional, scientific and technological aspects of pharmacy. Through their work they contribute to the knowledge characteristic of the pharmaceutical sciences, the recording and communication thereof, and its application in the educational and service phases of the School's programs.

In the third, or service, phase of the School's three-fold mission, the faculty and staff promote the disciplines and support the missions of the pharmacist in clinical practice and the pharmaceutical scientist in industry, government, or elsewhere. This is done particularly by motivating and providing for continuing education at all levels, by innovating and contributing to the development of expanding pharmaceutical services, by engaging in the exploratory research that leads to new and improved pharmaceutical services and new drug products, and in the practical application of the results of their work by the profession and the industry, by contributing to good relations of the pharmacy profession and the pharmaceutical industry with the public and with other health professionals and, in general, by initiating and assisting the programs that will be beneficial to the pharmaceutical services required by a modern society.

The School of Pharmacy was admitted to membership in the American Association of Colleges of Pharmacy in 1917. This organization was formed for the promotion of sound educational programs and productive research and scholarly efforts in pharmacy and the pharmaceutical sciences. It maintains high standards for membership based on the quality of the faculty of its member institutions and the excellence of their instructional programs and their resources for education and research.

The School of Pharmacy of the University of North Carolina is accredited by the American Council on Pharmaceutical Education. The School is also accredited by all State examining boards.

Students are admitted to a four-year program of professional studies in the School of Pharmacy upon completion of at least one year (the pre-pharmacy year) of collegiate work in the General College of the University of North Carolina or in any accredited liberal arts college (1-4 program). Students who present two or more years of accredited college work (including the required courses) before admission to the School of Pharmacy usually can complete their professional training in three years (2-3 program). As of January 1, 1938, the American Association of Colleges of Pharmacy stipulated for its member schools that students transferring from a college other than another school of pharmacy must spend a minimum of three years in the School of Pharmacy for the B.S. in Pharm. degree. Each application for admission must be approved by the Director of Undergraduate Admissions of the University. Applications should be filed as early as possible, preferably before February 1st of the calendar year in which the student desires admission. Applications received later in the year will be given every consideration within the limits imposed by the number of students admitted at an earlier date.

For students who transfer to the School of Pharmacy from another accredited School of Pharmacy, the minimum residence required for the degree is one academic year, that is, two semesters within a twelve-month period. Such students must complete at least thirty semester hours while in residence in the School of Pharmacy.

Graduate degrees offered through the School of Pharmacy are administered by the Graduate School of The University of North Carolina at Chapel Hill. These degrees include the Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) in pharmacy and medicinal chemistry.

The School of Pharmacy is considering a postbaccalaureate professional education and training program leading to an advanced professional degree in the fall of 1970 or 1971. This program will involve professionally oriented courses in different specialty areas.

For further information, please write to the dean of the School of Pharmacy and refer to the special catalogue of the School.

DIVISION OF PHYSICAL THERAPY

MARGARET LEE MOORE, B.S., M.S., R.P.T., *Director*

BACHELOR OF SCIENCE IN PHYSICAL THERAPY

The School of Medicine of the University grants the degree of Bachelor of Science in Physical Therapy to the student who satisfactorily completes the program of study. The program is designed to be completed in four calendar years. During the first two years the student completes a prescribed curriculum in the General College of the University or may complete his work at another accredited college or university. Students wishing to transfer to the Chapel Hill campus should maintain a close liaison with the staff of the Division of Physical Therapy to assure proper planning of courses. The third and fourth years consisting of courses in the Division of Physical Therapy of the School of Medicine, must be completed at the University in Chapel Hill.

Registration in the first two years on the Chapel Hill campus or elsewhere does not automatically assure the student of a place in the junior class. As enrollment in the last two years is limited, students will be accepted on a competitive basis and selections will be based on scholastic standing and upon character and personal fitness, as well as a sincere interest in physical therapy as a professional career. Final selection of students for the third and fourth years is made by the Committee on Admissions. The sequence of courses in the last two years cannot be altered and must begin in the fall. The schedule of academic work includes:

GENERAL COLLEGE: English 1, 2; Foreign Language 1, 2, satisfied at admission or after enrollment; Mathematics 15-31, or 1, 2; Social Sciences, three courses in two Departments; Humanities and Fine Arts, three courses in two Departments; Chemistry 1, 12, or 21; Zoology 11, 41; Physics 24; Psychology 26, one additional recommended; Physical Education, two semesters; Electives, four are possible. Twenty courses must be completed.

CURRICULUM IN PHYSICAL THERAPY: Junior and Senior Years (Semester System): Gross Anatomy; Histology; Neuroanatomy; Physiology; Pathology; Fundamentals of Patient Care; Physical Agents I, II; Professional Communications; Professional and Community Relations; Organization and Administration; Human Growth and Development; Medical Science; Psychiatry and Community Health; Functional Anatomy; Therapeutic Exercise I, II; Physical Evaluation I, II; Program Planning; Clinical Education I, II, III, IV.

THE CURRICULUM FOR DENTAL HYGIENE

ROGER E. BARTON, D.D.S., *DIRECTOR, Dental Auxiliary Programs*

CERTIFICATE IN DENTAL HYGIENE BACHELOR OF SCIENCE IN DENTAL HYGIENE

The School of Dentistry offers a two-year and a four-year program in dental hygiene. These curricula provide comprehensive educational experiences to qualify individuals for the practice of dental hygiene in accordance with the laws, regulations, and ethics pertaining to such practice.

Upon satisfactory completion of the prescribed two-year curriculum the student is granted a Certificate in Dental Hygiene, and is eligible for licensure examinations on the state and national level.

Students may be admitted into the two-year program directly from high school or as college transfers, provided they meet the entrance requirements of the University, and of the Curriculum for Dental Hygiene. Acceptable scores on the Dental Hygiene Aptitude Tests must be presented. Residents of North Carolina receive preferential consideration for admission.

A Bachelor of Science in Dental Hygiene is granted to those students who satisfactorily complete requirements of the four-year curriculum. The length of this program is determined on an individual basis. General college course work may be completed prior to or following enrollment in the two-year program. Students wishing to transfer to the Chapel Hill campus should maintain a close liaison with the staff of the Curriculum for Dental Hygiene to assure proper planning of courses.

Dental Hygiene certificate or associate degree graduates from other accredited institutions are considered for entrance into the degree program. Non-residents may qualify for admission as postprofessional degree candidates.

Enrollment is limited and students are accepted on a competitive basis. Selections are based on scholastic standing, character, personal fitness, sincere interest in and aptitude for dental hygiene as a professional career. The schedule of academic work in the certificate curriculum includes:

LIBERAL ARTS AND BASIC SCIENCES: English 1, 2, 37 or 44; Psychology 26(or equivalent); Sociology 51; Anatomy 41; Biochemistry 7, 8, 21; Bacteriology 55.

CURRICULUM FOR DENTAL HYGIENE: General Physiology; Dental Materials and Techniques; Dental Anatomy-Physiology; Pre-clinical and Clinical Dental Hygiene (four courses); Dental Histopathology (two courses); Dental Pharmacology; and Community Dentistry (two courses).

DENTAL AUXILIARY TEACHER EDUCATION

ROGER E. BARTON, D.D.S., *Director, Dental Auxiliary Programs*

BACHELOR OF SCIENCE PROGRAM

The School of Dentistry offers a Bachelor of Science Degree in Dental Auxiliary Teacher Education in cooperation with the College of Arts and Sciences and the School of Education. The prescribed curriculum includes courses in liberal arts, biological sciences, dental sciences, and education providing a comprehensive educational experience to qualify dental hygienists, dental assistants and dental laboratory technicians for careers in teaching in dental auxiliary education programs.

Graduate dental hygienists, certified dental assistants, and dental laboratory technicians from accredited institutions are eligible for admission to D.A.T.E. provided they meet the entrance requirements of the University. Dental hygienists may apply for transfer credit for dental hygiene courses completed in another accredited institution. Dental hygienists completing the UNC Curriculum for Dental Hygiene Certificate Program should consult with the Director of D.A.T.E. regarding course requirements for the D.A.T.E. degree. UNC, B.S. dental hygiene graduates may qualify as special students and should consult with the Director of the D.A.T.E. program regarding course requirements and selection. Dental laboratory technicians are eligible for consideration as D.A.T.E. students. In addition to the General College and Professional courses, advanced courses in Dental Materials and Removable and Fixed Prosthodontics will be substituted for some of the Dental Hygiene courses for students in this classification.

Priority for admission will be given to students qualifying as freshmen or as juniors. Enrollment is limited and students are accepted on a competitive basis. Selections are based upon scholastic standing, character, personal fitness, and a demonstrated interest in teaching in a dental auxiliary education program.

The curriculum is divided into two separate segments. Following the completion of the general college segment, students will pursue prescribed courses in dental auxiliary education, biological and dental sciences, and education. Included in the educational block of courses is a practice teaching assignment in a dental auxiliary program approved by the School of Dentistry and the School of Education.

A Bachelor of Science in Dental Auxiliary Teacher Educa-

tion is granted to those who satisfactorily complete the requirements of the curriculum. The length of this program is determined on an individual basis. General College courses may be completed prior to admission. Students wishing to transfer to the Chapel Hill campus should maintain a close liaison with the Director of D.A.T.E. to assure proper planning of courses. See page 36 for the General College Requirements.

CURRICULUM FOR D.A.T.E.: Anatomy 41; Physiology, DH21; Microbiology 55; Biochemistry 21 (Nutrition); Dental Anatomy and Dental Physiology, DH11; Dental Histopathology, DH23 and DH33; Dental Pharmacology, DH43; Community Dentistry, DH42; Advanced Dental Materials, DATE 10; Advanced Dental Radiology, DATE 25; Clinical Practice, DATE 36; Intro. to Administration, DATE 46; Education 50, 97 (or equivalent, Ed 41, 71, 135 and 173); Education 98 (Practice Teaching); three electives (approved upper division courses in Arts and Sciences, Education and Public Health).

Applicants for the D.A.T.E. program are required to submit their scores on the Scholastic Aptitude Tests (SAT) of the College Entrance Examination Board. Information on testing dates and procedures can be obtained by writing to: College Entrance Examination Board, Box 592, Princeton, New Jersey 08540.

Questions concerning the professional segment of the program may be directed to: Director, Dental Auxiliary Programs, School of Dentistry, University of North Carolina, Chapel Hill, N. C. 27514.

For further information concerning admissions, please contact: Office of Undergraduate Admissions, 101 Vance Hall, University of North Carolina, Chapel Hill, N. C. 27514.

FACILITIES AND SERVICES

Though the University of North Carolina at Chapel Hill is feeling the pressure of a rapidly increasing volume of students, every effort is made to keep physical and instruction facilities in line with the high standards to which the University aspires. Classrooms and laboratories, frequently taxed to capacity and over-flowing, are being supplemented by additions and new facilities with the most modern and up-to-date equipment.

In the **Louis Round Wilson Library**, the **Robert B. House Undergraduate Library**, and in departmental and school libraries are more than a million and a half volumes, and books which are in wide use are available in quantity. The Undergraduate Library, with its open shelves, makes books easily accessible to students. A comonet and friendly staff does much to facilitate the use of books and other materials.

The elegantly appointed **William Hayes Ackland Memorial Art Center** not only provides accommodations for the Department of Art and houses a rapidly growing collection of art treasures, but it also has galleries for the display of temporary and visiting exhibitions.

The **Research Laboratory of Anthropology** in Person Hall serves as the repository of more than a million items and is considered to be one of the primary sources for archaological research in the South.

The **Morehead Building** contains the sixth Zeiss Planetarium installation of the Western Hemisphere, the first one in the world to be owned and operated by a university and the first one in the United States to be modernized with post-World War II improvements. A realistic reproduction of the sky of thousands of years past or hence as seen from any position on earth is produced on the sixty-eight-foot perforated stainless steel dome of the chamber. Astronaut John Glenn visited the Planetarium with his colleagues in preparation for his epochal orbiting the earth. Spectacular productions given in the Planetarium since its formal opening in 1949 have been witnessed by more than a million visitors, many of whom have been North Carolina school children who come to the campus by the thousands in the spring of each year.

The **Carolina Playmakers** is a nationally known dramatic organization founded by the late Frederick H. Koch in 1918. The purpose of the organization is: (1) to provide a practical theatre laboratory for the students in the Department of Dramatic Art, established in 1936; and (2) provide a Community Theatre



THE ROBERT B. HOUSE UNDERGRADUATE LIBRARY

Program for Chapel Hill and for the campus. Membership in the Playmakers is open to any student in the University, and to any citizen of the community. Acting roles are assigned by open competitive tryouts, and technical and managerial positions are filled by personal interview.

The **Computation Center** of the University of Chapel Hill is equipped with an IBM System/360, Model 30. The facilities and personnel of the Center are available to assist instruction and research throughout the University. An undergraduate non-credit course in the use of an algebraic language, NUIT, is also available under the sponsorship of the Department of Mathematics.

The **Communication Center** is administered by the faculty of the Department of Radio, Television, and Motion Pictures. It functions as a production and research laboratory of the Department and offers services in radio, television, motion pictures, and photography to the campus and the state.

Since 1946 a Production Laboratory in radio has been operated by the Department as a teaching and service function. It has originated numerous programs for the National Association of Education Broadcasters radio network, for the National Broadcasting Company and for other commercial networks and stations.

Since 1952, a non-commercial educational radio station, WUNC (FM), licensed by the Federal Communications Commission to The University of North Carolina at Chapel Hill, has been operated as a training and service agency. The staff is composed of students participating under faculty supervision. In addition to programs originating in Chapel Hill, the station broadcasts features of the British Broadcasting Corporation, the French Broadcasting System, and other United States and foreign production agencies.

In 1960 a Television Laboratory was formed for purposes of student instruction, program experimentation and development, and research. The laboratory is responsible for the planning of new television services in Chapel Hill, for television drama originating from the Chapel Hill campus, and for closed circuit television. The staff also experiments with and does research in various types of programs with intent to contribute to the field of television and the training of advanced television students.

WUNC-TV, Channel 4 educational television station, is licensed to the consolidated University of North Carolina. These facilities, under the direction of experienced faculty members, offer many opportunities for students to acquaint themselves with various aspects of the rapidly developing media of communication.

The **Extension Division** provides in various ways for those who want University instruction but are not able to attend conventional classes. The Division's Bureau of Correspondence Instruction has more than 2,000 students, many of whom are in foreign countries, enrolled in Extension courses which carry University credits. The Division also offers off-campus classes usually taught by University personnel, as well as Saturday and evening classes in Chapel Hill. As helpful as correspondence, off-campus, Saturday, and evening classes are to many who do not find it convenient or possible to enrol for regular classes, most students find that academic work is more satisfactorily done in regular classes.

The **Physical Education Plant** of the University is outstanding and is one of the reasons that the University was selected for a Navy Pre-flight School in World War II. Facilities include

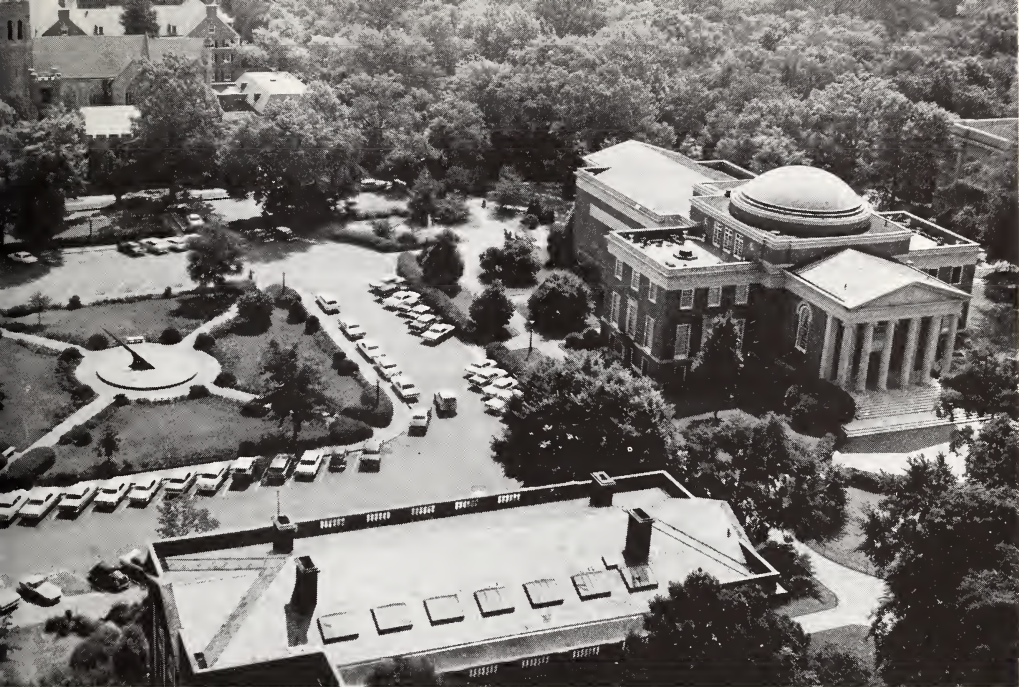
a large gymnasium, a new plant, known as Carmichael Auditorium, seating more than 8,500 in which Varsity Basketball is played, an indoor and an outdoor pool, a baseball field with bleachers, a football stadium which will seat more than 45,000 spectators, and many athletic fields.

Physical education and athletics play an important role in undergraduate activity. Formal courses in physical education are required of freshmen and sophomores. Varsity teams compete with those of comparable institutions and sometimes achieve national ratings. Intramural teams are numerous and competition among residence halls, fraternities, and sororities is spirited. Intramural activities reach a climax on such occasions as the annual Grail-Mural Sports Jamboree in which a number of teams, each representing a fraternity or a residence hall, compete in handball, badminton, table tennis, half-court basketball, swimming, foul shooting, archery, and other events with awards for individual winners and plaques for the team winner.

The **Summer Session** is an integral part of the University, offering courses that are given in regular semesters. There are two terms of six weeks each: the first extending from early June until the middle of July; and the second, from the middle of July until late August. Instruction is by regular staff members and by visiting professors. A student can take two courses in each term, and sometimes three courses with special permission of his dean. With the Summer Session the University operates on a year-round basis; a student may enter in June or July (as well as in September or February) with full assurance of being able to get a program that will count toward graduation; and by attending two full summers and taking an extra course in each of two semesters, a student may graduate in slightly less than three years. A bulletin may be obtained from the Director of the Summer Session, 102 Peabody Hall.

The **Dean of Student Affairs** has offices in South Building. He has general responsibility for the supervision of facilities and the maintenance of services which have been established for the purpose of helping a student adapt himself to the University and take maximum advantage of the opportunities offered. In the performance of his duties he is aided by the Dean of Women and the Dean of Men, with their assistants, whose offices are in the basement of Steele Building. A number of these facilities and services is listed below.

The **University's Guidance and Testing Center** located in Peabody Hall was established in 1937 primarily for the purpose of administering and scoring tests and for test research. Its



THE MOREHEAD PLANETARIUM

activities were greatly expanded beginning in 1945, as the result of a contract with the Veterans' Administration to provide vocational guidance for veterans. Since that time, more than 10,000 veterans, many of them partially disabled, have been tested and counseled. As the result of a decision by the University to extend these same services without charge to students, vocational counseling of University students has become one of the major functions of the University Testing Service. More than 6,000 University students have received a comprehensive battery of tests and a series of interviews with vocational counselors on the Testing Service staff. The vocational guidance program for students has been especially designed to be of maximum assistance to those students who have been unable to select a suitable academic major, who are uncertain about their vocational choice, or who are encountering academic difficulties.

The **Reading Program** offers a non-credit course in the improvement of reading and studying efficiency, open to any student interested in improving these skills. Applications can be made at any time during the regular academic year at the Reading Program Office, Room 106, Peabody Hall. The course begins with individual diagnosis of reading and study habits and continues until each student reaches the desired level of improvement, some attending for a minimum to ten weeks and others remain-

ing one or more semesters. The course is essentially laboratory in nature with each individual concentrating on those reading or studying skills he wants or needs to improve. The Reading Program cooperates with schools and departments of the University in administering scoring, and interpreting diagnostic reading tests. The staff is also available to help students who have specific problems in reading and studying and who are unable to enroll in the regular program. Both the Testing Service and the Reading Program are located in Peabody Hall.

The Director of Records and Registration, 105 Hanes, serves as registrar for **Selective Service**.

The **Adviser to International Students**, Carr Hall, as the title implies, helps students from other countries make good adjustments in their new academic environment. Passports, visas, immigration regulations, jobs, grants, language difficulties are only a few of the subjects on which he gives counsel.

The **Placement Service** helps students and alumni to find permanent employment and coordinates all campus recruitment and the placement of graduate students. The professional schools assist directly in the placement of their graduates. Registration with the Placement Service assures a complete and permanent personnel file including a summary of college activities and confidential ratings from faculty members, which is available to employers upon request.

In addition, student-employer interviews are arranged on the campus throughout the year, and occupational information and company literature are available for student use. The Placement Service also makes available information regarding post-graduate scholarships and temporary summer employment.

In order to provide medical attention for the student, the University employs nine full-time physicians and maintains a well-appointed infirmary, with a modern X-ray unit under the direction of a full-time technician, and with a laboratory for diagnostic purposes under the direction of two full-time technicians. The infirmary is under the immediate supervision of the **Director of the Student Health Service** and is provided with seventeen experienced nurses who are under the general supervision of a head nurse. At the discretion of his attending physician a student may be admitted to its wards, and for such services as may be rendered by the staff no charges are made. But the student will be required to pay for any additional service (consultation, special nurses, and operations), recommended by the attending physician and approved by the parent or guardian.

North Carolina Memorial Hospital, which is the teaching hospital of the School of Medicine, offers the most modern facil-

ities for diagnosis and treatment. To this hospital are brought or referred patients from all parts of the state. Its facilities are available to students of the University when needed but its charges are not covered by regular University fees.

The **Student Insurance Plan** is the result of efforts by the University to provide University students with a low rate insurance policy. This policy is designed to protect students against extraordinary expenses resulting from serious accidents or surgery requiring medical care beyond that provided by the Student Health Service. The low rate is possible because the policy is a group insurance plan.

The plan is available to all students attending the University on a full-time basis. Coverage is for one year, September 1, or any date thereafter, until September 1 of the following year. Protection is in effect during vacation periods and benefits are paid in addition to other coverage that the student might have.

The policy provides up to \$1,000 medical expense for each accident and covers the cost of:

1. Medical and surgical treatment by a physician;
2. Hospital confinement and special nurses;
3. Miscellaneous hospital expenses, such as operating room, anesthetic, medicines, drugs, and laboratory tests;
4. Service rendered by the University infirmary or Health Service for which the student is normally charged;
5. Dental treatment made necessary by injuries to sound natural teeth (limited to \$250).
6. Psychiatric care benefit (while hospital confined) up to \$25.00 per day for a maximum benefit period of 15 days for hospital room and board when insured student is confined for psychiatric treatment.

The plan also provides an accidental death and dismemberment benefit and a graded surgical schedule which ranges from \$10.00 to \$250.

A special letter describing current coverage and annual premium rate will be sent to each new student in August.

Communications in regard to insurance should be addressed to the Dean of Men, 01 Steele Building.

The **Office of the Director of Student Aid**, 300 Vance Hall, coordinates the efforts of the University to help undergraduates solve their financial problems through jobs, scholarships, and loans. (See page 135, and the separate booklet *Financial Aid for Students*, put out by this office.)



THE FRANK PORTER GRAHAM STUDENT UNION BUILDING

The **Housing Office** in Bynum Hall has charge of the rentals of all University housing open to students, men and women.

The **Alumni Association** though not under formal University control, keeps records of the activities of graduates and former students, of whom there are about 60,000 living and 12,000 deceased. Offices are in Carolina Inn.

The **Frank Porter Graham Student Union Building** is the location of the offices of the major student organizations on campus. Among them are Student Government and its many committees, the Daily Tar Heel, the Yackety Yack, Orientation and **The Carolina Union Board**.

The Carolina Union Board is composed of ten students who plan and carry out the Union's social-cultural programs which are provided for the entire student body. They include the president and secretary as well as the chairmen of the eight standing committees: Current Affairs, Display, Drama, Films, Gallery, Music,

Publicity and Social. Each chairman is responsible for selecting his own committee and present a well-rounded program within his specific area.

The Board functions as a group in selecting the "big name" entertainment on campus ending with Jubilee, the annual spring weekend. Planning and presenting the Union program provides a valuable experience for those students involved. Board members are selected through open interviews in the spring while committee members are selected in the early fall.

The Union building provides many facilities for the use of students. There are lounges with comfortable furniture and many hometown newspapers; a music listening and reading room with a record collection and magazines and books for browsing; gallery lounges which feature art exhibits throughout the year; bowling lanes, billiards room and games lounge for chess, checkers and cards; lockers for student use; a photo lab, a snack bar and a barber shop. The desk maintains a student locator service, a listing of the major events occurring on campus and copies of the Tar Heel and the monthly Union calendar.

The Central Reservations Office, also located in the Union building, serves student organizations by providing meeting space both in the Union and in other buildings throughout the campus. Within the Union, there are eleven meeting rooms and the Great Hall which is used for lectures, films, banquets, dances and receptions.

CULTURAL AND RELIGIOUS ACTIVITIES

The Carolina Union participates in providing opportunities for cultural enrichment in several ways. First of all in the area of serious music, the Carolina Union cooperates with the Chapel Hill Concert Series and thereby makes it possible for students to attend, free of admission charge, performances by outstanding solo artists, ensembles, and orchestras.

The Department of Music sponsors the Tuesday Evening Series, bringing more musical artistry to the campus by presenting outstanding local and regional musicians as well as artists of national repute and, of course, recitals by graduating seniors. The Carolina Union occasionally provides financial support to this series. Student musical organizations such as Glee Club, orchestra, and band have headquarters in the Department of Music.

The English Club brings poets and writers of distinction to the campus several times during each year, and the Carolina Union assists in this activity.

The Carolina Symposium and the Festival of Arts produced on alternate years respectively are several days exploration of vital topics by distinguished speakers from far and near. Planned and presented by the respective committees of Student Government, these programs, too, receive financial support from the Carolina Union.

The Carolina Union Music, Drama and Film Committees make direct contributions to the cultural life on the University campus, providing opportunities for participation and planning as well as for spectators.

Exhibitions at the Ackland Art Museum and Morehead Planetarium, the Carolina Playmakers, the Chapel Hill Film Society, and the host of speakers, workshops, and clinics sponsored by academic departments all make their contribution to cultural opportunity in abundance for the campus community and the town as well.

The Y.M.C.A. and the Y.W.C.A. are non-sectarian religious organizations which function and give students opportunities to work in many areas of University life. With headquarters in the Y Building fronting on Y Court, these groups constitute a center and a dynamo of student activities, which emphasize and emanate from religious, ethical, social, intellectual, and political concerns of the University community.

LIST OF CHURCHES

BAPTIST

University Baptist Church
South Columbia Street
Olin T. Binkley Memorial Baptist Church
712 Willow Drive

CHRISTIAN SCIENCE

First Church of Christ, Scientist
835 Pittsboro Road

COMMUNITY CHURCH

The Community Church
Purefoy Road

EPISCOPAL

Chapel of the Cross
304 East Franklin Street
Church of the Holy Family
200 Hayes Road

JEWISH

Hillel House Foundation
210 West Cameron Avenue

LUTHERAN

Holy Trinity Lutheran Church
Corner East Rosemary Street and Pickard Lane

METHODIST

University Methodist Church
East Franklin Street
Aldersgate Methodist Church
Laurel Hill Road

PRESBYTERIAN

Presbyterian Church of Chapel Hill
East Franklin Street
Church of Reconciliation
110 Elliott Road

QUAKER

The Religious Society of Friends
Raleigh Road

ROMAN CATHOLIC

Chapel of Saint Thomas More
744 Gimghoul Road

UNITED CHURCH OF CHRIST

211 West Cameron Avenue

MINISTERS TO STUDENTS

Several of the religious groups maintain chaplains for work among the students of their faith in the University.

BAPTIST

To be filled by September 1970.

COMMUNITY CHURCH

Rev. James D. Riddle

EPISCOPAL CHURCH

Rev. Lex S. Mathews

JEWISH

Rabbi Howard L. Rabinowitz

LUTHERAN

Rev. Frank C. Perry

METHODIST

Rev. Robert L. Johnson

PRESBYTERIAN

Rev. Carl Culberson

ROMAN CATHOLIC

Rev. Albert J. Todd

UNITED CHURCH OF CHRIST

Rev. Phillips Washburn

STUDENT ACTIVITIES

THE CAROLINA WAY OF LIFE

Soon after his arrival in Chapel Hill the entering student will discover that tradition has left its mark upon Carolina. As the oldest state university in the country, the University has had ample time to develop a certain comfortable air of stability and solidarity. But the new student will discover that there is also a disquieting and unsettling atmosphere at this institution. Here teachers and students alike search vigorously for new concepts and ideas, pioneering in the various fields of academic endeavor.

The Carolina "way of life" consists of a mixture of vigorous—and rigorous—classroom, laboratory, library, and private study experiences, combined with a wide variety of student government activities, social events and other co-curricular or extra-curricular activities.

No single word can typify the University's way of life, but it is possible to say that the terms "academic excellence" and "freedom" may, to a considerable degree, summarize the meaning of the total Carolina experience.

If the entering student is laboring under the illusion that his life at this institution will be one big "party" after another or that he is headed toward a four-year "gentleman's finishing school" experience, we would strongly urge him to direct his efforts elsewhere. This institution demands of all its members, faculty and students alike, the highest level of academic performance and excellence. In the classroom the student will find that mediocre performance will bring him no recognition. The University seeks for and stresses superior performance. It prizes academic excellence, and the student will do the University and himself a disservice if he plans to come to "drift."

Freedom permeates the total University community. No semblance of thought-control is imposed upon any faculty member. Professors are free to investigate, to speculate, to pioneer, and to express their academic convictions. Similarly, freedom is extended to the student in residence. As a professor is free, so is the student, in almost every area of his life. A minimum number of rules and regulations exist with respect to his personal conduct. When he violates the expectations of the community with regard to his performance, he is subject to the control of his peers as well as to that of the administration or faculty. Such a mode of operation demands the utmost in individual self-possession or self-control. The University, through

its advocacy of the Honor System and through the authority it has delegated to student government, seeks to develop the essentials of self-control within its students.

The entering student is immediately faced with the problem of freedom. He is "on his own" to a large extent. No one will regulate his life with respect to when he sleeps or when he eats; no one will require him to go to church; no one will require him to study; and, no one will require him to stay in school. Many of the decisions with which he has received assistance during his previous years will now be entirely a matter of his own personal and private concern. He will be confronted with new ideas and concepts and will have the agonizing responsibility of deciding whether to accept or reject them.

Freedom is a necessary element in the education of man. This freedom must be accorded to the professor and to the student. At Carolina, every attempt is made to see that this situation exists. Only through the careful use of freedom can the truth really break through.

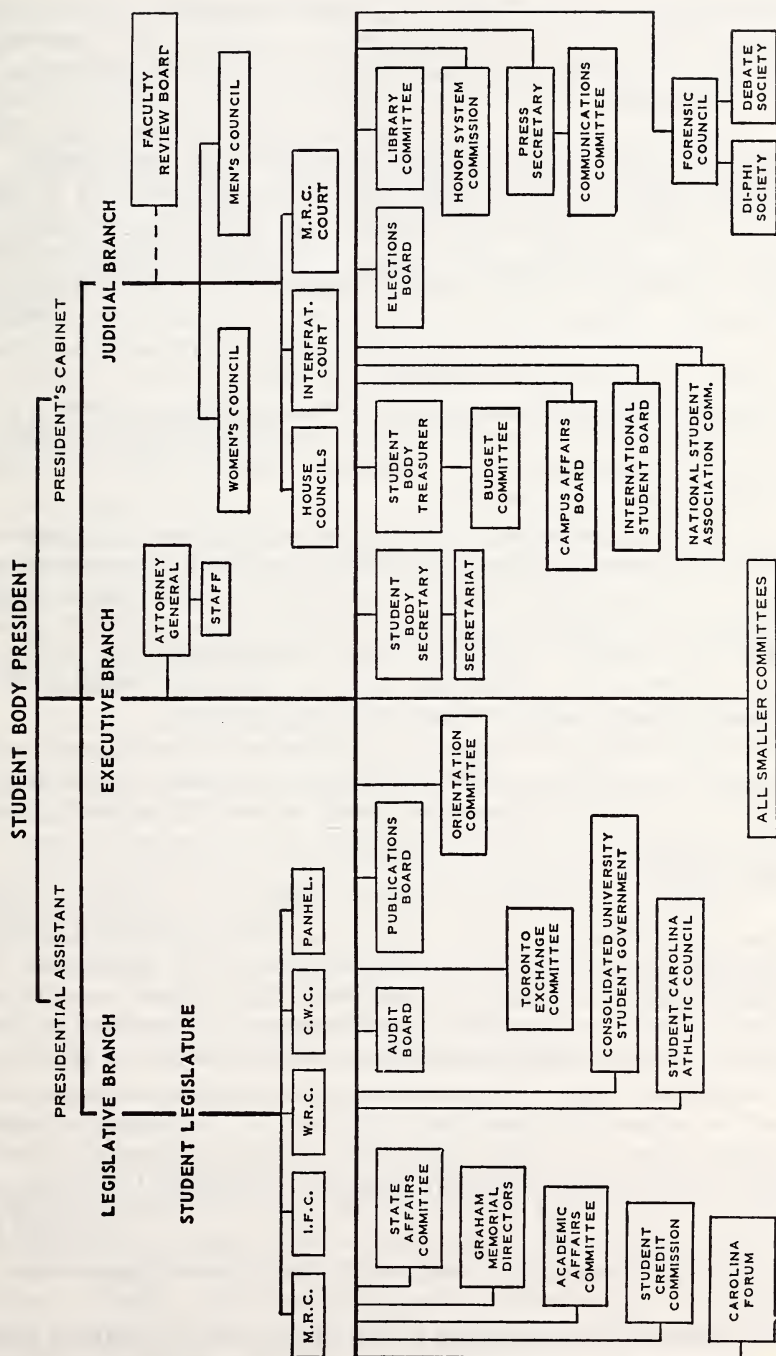
As the student makes an effort to understand the meaning of freedom, he may be tempted to confuse it with license. There will be people at the University who will be prepared to help him to see the difference between unencumbered activity without regard for the rights and privileges of others, and responsible action, in freedom.

The Carolina "way of life" demands of students and faculty alike the utmost in academic excellence and the development of an understanding of the meaning of freedom, so that the truth may be more fully comprehended.

STUDENT GOVERNMENT

The By-Laws of the Board of Trustees of the University invest in the Chancellor of the University "the duty . . . to exercise full authority in the regulation of student conduct and in matters of student discipline . . ." At the same time the Chancellor may delegate, and has delegated, authority to exercise disciplinary and administrative functions in student life to agencies of Student Government. Thus, within the context of this delegated authority and responsibility, the student body at the University has for decades been self-governing.

In a rather unique fashion, the University of North Carolina provides a free student government which enables the individual student and the student body as a whole to put many of the lessons learned in the classroom into practice. Student government provides an excellent laboratory for experimentation and learning. It is therefore considered a vital element in the total learning process of the University. It is considered an



integral part of the total University community, providing a channel for the University student to impress his views upon his fellow students and upon the faculty and administration of the University.

Almost from the beginning of the operation of this institution in 1795, students began to handle their own affairs. In the Dialectic and Philanthropic Debating Societies, the ancestor of the present student government was born. Every student at the University belonged to one or the other of these societies, and the organizations assumed responsibility for maintaining discipline. Thus, early in its history, the University began to move away from a strict monitor system and toward the present student self-government system. In 1875 the Honor System officially ended all vestiges of the monitor system; in 1904 a judicial body, the University Council, was established; in 1938 the Student Legislature was established; and in 1946, a written constitution was approved.

Roughly patterned after the federal system of government with its three branches, the Carolina student government consists of an executive branch, a legislative branch and a judicial branch. Heading the executive branch is the president of student government, assisted by the vice-president, the secretary, and the treasurer. Working directly with the president is his cabinet which consists of various campus leaders.

The legislative branch of government is unicameral (one house) and consists of 50 representatives elected by the student body. In addition to handling a vast amount of legislative work, it is responsible for the appropriation of a budget in excess of \$200,000.00.

The student judiciary consists of the Honor Court, the Men's Court, the Women's Court, and various other judicial and quasi-judicial organizations. Representatives to the Men's and Women's Courts are elected by students. These three councils have primary responsibility for the enforcement of student self-discipline as it is enunciated and promoted by the Honor System.

Certain other organizations of student government which will be more fully described elsewhere in this bulletin deserve mention here. The Men's Residence Council, composed of leaders from each of the residential colleges, coordinates the social, academic, and political activities of the more than 5,000 men living in the colleges. The importance of this organization cannot be over-emphasized, for it deals with the male student where he lives.

Operating as a general coordinating and law-making organization for the 28 fraternities is the Interfraternity Council.

Its role of providing leadership for the fraternities is extremely important.

Roughly paralleling the Interfraternity Council is the Panhellenic Council. The Association of Women Students works with residence hall and sorority life.

Widespread opportunity exists for all students, from freshman to graduate level, to participate in the Carolina student government. Approximately 600 official positions are available for interested students.

Listed below are the Student Government offices and organizations:

I. *Executive Branch*

A. Offices—*President, Vice-President, Secretary, Treasurer, Presidential Assistant.*

B. Organizations—

ORIENTATION COMMITTEE: Orients new students to the University during the week before fall, spring, and summer session classes begin.

PUBLICATIONS BOARD: Regulates the financing of the three student publications.

TORONTO EXCHANGE COMMITTEE: Selects, through special interviews, students to participate in the two yearly exchanges between The University of North Carolina at Chapel Hill and the University of Toronto, Ontario, Canada.

COMMUNICATIONS COMMITTEE: Informs the campus of the state of Student Government and its activities; publicizes and explains new programs.

ACADEMIC AFFAIRS COMMITTEE: Studies course and class procedures in order to make recommendations for the improvement of academics. Subcommittees: University Abroad, Orientation Reform, National Merit, and Humanities.

ELECTIONS BOARD: Administers all general and special campus elections.

CAMPUS AFFAIRS COMMITTEE: Works for a solution to local problems brought to the attention of Student Government and its agencies.

INTERNATIONAL STUDENT CENTER: Concerns itself with fostering a closer relationship between students and the international student community and sponsors various educational, social, and athletic activities.

SECRETARIAT: Supervises and carries out all secretarial work in the student government organization.

ATTORNEY GENERAL'S STAFF: Investigates Honor and Campus Code violations.

HONOR SYSTEM COMMISSION: Studies and makes recommendations pertaining to the campus Honor System.

BUDGET COMMITTEE: Proposes a tentative budget for the President of Student Government to present to the student legislative body.

STUDENT AUDIT BOARD: Supervises all actions of the Student Activities Fund Office.

STUDENT CREDIT COMMISSION: Works to improve credit relations between students and the Chapel Hill merchants.

STUDENT CAROLINA ATHLETIC COUNCIL: Coordinates athletic programming between student activities and athletic events.

CONSOLIDATED UNIVERSITY STUDENT COUNCIL: Composed of students of the greater University system; discusses common problems.

CAROLINA FORUM: Presents outstanding speakers each year to discuss topics of current interest.

STATE AFFAIRS COMMITTEE: Serves as an information group on student opinion when the University budget comes before the state's General Assembly.

CAROLINA UNION BOARD: Makes policies for the Student Union; appropriates the Union's budget.

CO-OP COMMITTEE: Considers the legal and financial problems involved in the forming of a cooperative for the students and faculty of Chapel Hill.

EDITORS ROUNDTABLE: Made up of the editors of the various residence hall newspapers and other experienced students. Considers the technical problems of residence hall newspapers and seeks to encourage more residence halls to have their own newspaper.

II. *Judicial Branch*

THE HONOR COURT: A coed body having original jurisdiction over all alleged Honor Code violations. It is composed of members from both the Men's and the Women's Courts.

THE MEN'S COURT AND THE WOMEN'S COURT: composed of

students, these bodies have original jurisdiction over alleged Campus Code offenses. The Women's Court also handles cases involving major violations of social rules and hears appeals from the decisions of the House Councils.

Other Student Judicial Bodies: *The Men's Residence Council Court, the Interfraternity Council Court, the Panhellenic Judicial Council, and House Councils (Women's Residence halls)* consider violations of residence and social rules within their jurisdiction.

THE ATTORNEY GENERAL'S STAFF: This agency is in charge of the investigation and presentation of cases before the various judicial bodies; it also advises and assists students accused of violations.

THE FACULTY-ADMINISTRATIVE-STUDENT JUDICIAL BOARD: This body, composed of two students, two faculty members and chaired by the Dean of Student Affairs, hears cases involving students who are emotionally disturbed, who have been involved in perversion, or whose offense or classification lead student government and administrative officials to conclude that it is not appropriate for the case to be tried by a student judicial body.

III. *Legislative Branch*

SPEAKER OF LEGISLATURE

CLERK, SERGEANT-AT-ARMS

THE MEN'S RESIDENTIAL COLLEGES

More than five thousand men students live on the campus in eight residential colleges. These colleges range in size from 450 to 1,000 people. Within each college are several houses.

Each house is organized politically and socially. An extensive program of social, intramural athletic, academic, and Student Government activities is provided. Every effort is made to provide each student with a significant and meaningful social experience so that he will be able readily to identify with a specific group rather than feeling "lost in the crowd." The residential college program is continuing to expand with more comprehensive programs envisioned for the future.

MEN'S RESIDENCE COUNCIL

No Student Government organization in the University plays a more important role than does the Men's Residence Council, which is representative of the eight residential colleges. The top elected officers of each college comprise the Men's Residence Council. The Council meets on a regular basis to coordinate the activities of the residential college system.

Working under the authority of the Men's Residence Council is the Men's Residence Council Court, which is the Student Government judicial authority which meets to consider alleged violations of the house rules of the residential colleges. Members of the Men's Residence Council Court are elected from the various residential colleges. This system places the responsibilities of good government upon the residents of the colleges themselves.

The Honor System is as pertinent to residential college life as it is to the broader life of the University. Students living in the houses of the residential colleges are obligated to report themselves or others should they commit or observe a violation of the Honor Code.

ASSOCIATION OF WOMEN STUDENTS

When a woman enrolls at the University in the fall of 1970 she automatically becomes a member of the Association of Women Students. The purpose of the Association is to provide a structure through which the needs and concerns of all women students can be met. AWS offers areas of study, all of which explore the status and expanding lives of women in society, and the organization welcomes any member to work through constructive channels to examine the education and potential of women.

The Executive Council of AWS this year replaces the Women's Residence Council (WRC) as the special governing body meeting the unique educational needs of women. It is composed of presidents and representatives from all of the women's residence halls, sororities, and town students.

IFC AND FRATERNITY LIFE

Approximately one-fifth of the undergraduate male student body is affiliated with the 24 social and 4 professional fraternities at the University. These organizations provide an opportunity for the student to identify with a small group for mutual benefit and support. In a fraternity the student can develop and practice a full social life. Each fraternity has a program of social, athletic, and self-governing activities.

Considerable stress is placed upon the importance of academic achievement, for fraternities are a part of the academic community. No person may join until he has achieved a C (2.0) average.

After being in residence for at least one regular semester, male freshmen students have an opportunity to participate in Fraternity Rush. This is a period of approximately one week during which fraternities entertain freshmen and other male students who are interested in affiliation. During the Orienta-

tion period, the actual rules and procedures will be outlined to any interested student.

Although the entering student is faced with many decisions, none is more important than the question of joining or not joining a social fraternity. This is a choice which should not be made as a result of snap judgment. Fraternities, with all of their advantages, require a significant amount of time of their members; they add, to a small extent, to the total cost of a student's education; and each has its particular standards of operation and codes of belief and conduct which should be carefully investigated prior to affiliation. For many students, participation in a social fraternity will be a decided asset; other students may decide that they are not quite ready to participate in such activities. Some students elect to wait until their sophomore year before actively attempting to join a fraternity; still others conclude that they do not wish to affiliate with a fraternity at all. Joining a fraternity is an individual decision, and being a member of such an organization is not a prerequisite to being successful in college life. It is one way to achieve success, but it demands a clear-headed decision at the beginning.

The fraternities on campus are: Alpha Kappa Psi, Alpha Tau Omega, Beta Theta Pi, Chi Phi, Chi Psi, Delta Kappa Epsilon, Delta Psi, Delta Sigma Pi, Delta Upsilon, Kappa Alpha, Kappa Psi, Kappa Sigma, Lambda Chi Alpha, Phi Delta Chi, Phi Delta Theta, Phi Gamma Delta, Phi Kappa Sigma, Phi Sigma Kappa, Pi Kappa Alpha, Pi Kappa Phi, Pi Lambda Phi, Sigma Alpha Epsilon, Sigma Chi, Sigma Nu, Sigma Phi Epsilon, Tau Epsilon Phi, Zeta Beta Tau, and Zeta Psi.

Operating as the executive, legislative, judicial, and coordinating body of the 28 fraternities is the Interfraternity Council. It is composed of the president and one representative from each chapter. The Interfraternity Council provides the collective leadership for the fraternity system and is one of the vital campus organizations. It establishes the rules and regulations for fraternity rushing and supervises the actual program. It plans and operates Greek Week.

In addition to prescribing and enforcing scholarship regulations, the IFC seeks to emphasize scholastic endeavor by annually providing the Andrew Bershak Fraternity Scholarship. Also, it encourages the maintenance of high academic standards by awarding a trophy each year to the fraternity which has most improved its scholastic average over the previous semester.

Each year the IFC awards a trophy to the outstanding fraternity on campus. The criteria upon which this award is based include scholastic standing, intramural participation, house im-

provement, Interfraternity Council participation, social activities and campus activities.

The Interfraternity Council Court rules in cases involving infractions by individual fraternity chapters of the rules and regulations as established by the Interfraternity Council.

THE PANGEHELLENIC COUNCIL AND SORORITY LIFE

The Pangehellenic Council is the governing body of the national sorority chapters represented on our campus: Alpha Delta Pi, Chi Omega, Delta Delta Delta, Kappa Alpha Theta, Kappa Delta, Kappa Kappa Gamma, Phi Mu, and Pi Beta Phi. Sigma Sigma Sigma colonized on the campus in the fall of 1969. The Council is composed of three members from each of these sororities, two members from the Stray Greek organization, and the Pangehellenic Adviser, a member of the Dean of Women's staff.

This Council serves its member organizations and the campus by legislating the various sorority activities, participating as corporate spokesman in those campus affairs which involve sororities, and by sponsoring and regulating sorority rush. The Pangehellenic Council also participates actively in community affairs through various charity projects and contributions.

Judicially, the Pangehellenic Council Court has original jurisdiction over all violations of social conduct committed by a sorority and over violations of the Pangehellenic rules committed by a sorority or an individual.

Those transfer students who have joined a national sorority which does not have a chapter at the University may participate in both the Pangehellenic Council's activities and in the Pangehellenic Court's membership through their representative organization on this campus, the Stray Greeks. In addition, the Stray Greek members have the opportunity to participate in many of the social and group activities of the individual sororities.

Any woman student of sophomore, junior, or senior standing who has an overall *C* (2.0) average, or any first semester transfer of comparable standing, is eligible to participate in sorority rush in the fall. Freshmen women are eligible for rush after one semester. By mutual choice the student may then become a pledge of a sorority, and, after one semester during which the pledge is required to maintain her *C* average, may be formally initiated into the sorority. Both active sorority members and pledges participate in planned social exchanges between sororities and fraternities, self-governed group meetings and discussions, athletic intramurals, and many other social and service projects of the individual sorority's choosing. All sororities maintain attractive houses close by the campus in which upper-class members of the sorority may reside and which provide a

pleasant, homelike atmosphere available to all members for their meals, entertaining, or private enjoyment.

Information concerning sorority expenses is available in the general information rush manual published each year by the Panhellenic Council and may be discussed individually with rush counselors during rush in the fall.

STUDENT PUBLICATIONS

The Daily Tar Heel: The student-operated daily newspaper that for seventy-three years has been independent of administrative or faculty control. *The Daily Tar Heel* affords the student an opportunity to write and to learn the internal workings of a newspaper enterprise. The *Tar Heel* gives coverage to campus events, as well as to events of the state, nation, and international scene. Any interested student may apply for a staff position.

The Yackety-Yack: The Carolina yearbook edited entirely by students. The "Yack" is a pictorial mirror of all events which occurred during the school year. All students interested in working on this yearbook should apply to the *Yackety-Yack* offices in the Carolina Union.

The Carolina Quarterly: An independent student literary magazine providing an outlet for young writers at the University, as well as elsewhere. *The Carolina Quarterly* has obtained a national reputation and is listed in *The Writer's Digest* and other magazine directories. *The Quarterly* invites all interested students to join the staff and thus associate themselves with a publication of important literary worth.

STUDENT EXTRACURRICULAR AND SOCIAL ORGANIZATIONS

Dramatics

THE CAROLINA PLAYMAKERS: Organized in 1918 for the purpose of furthering the art of creative writing and the production of dramas. It is now the laboratory division of the Department of Dramatic Art. All interested students are welcome to join and participate.

STUDENT THEATER WORKSHOP: Encourages dramatic appreciation and activity on campus.

Music

MARCHING TAR HEELS: Composed of over 100 members and recognized as one of the outstanding marching bands in the South.

CONCERT BAND: Composed of the more skilled musicians; spends its time in the study and performance of the best in concert music.

UNIVERSITY SYMPHONY ORCHESTRA: Composed of students, faculty, and townspeople dedicated to the performance of the best in music.

UNIVERSITY MIXED CHORUS: Composed of students devoted to the performance of choral music from all periods of history.

MEN'S GLEE CLUB: Offers two semesters of bi-weekly practices, joint and local concerts, several short tours and two longer tours through several states.

Forensics

DI-PHI: An organization resulting from a merger of the Dialectic and Philanthropic Societies, the two oldest campus debating societies.

THE DEBATE SQUAD: Independent student organization that represents the University in intercollegiate debating meets.

THE FORENSIC COUNCIL: The organization under student government which is responsible for administering all University forensic activities.

Radio-TV

WUNC-FM: The "Voice of the University" offering to students opportunities to participate in all phases of radio broadcasting.

WUNC-TV: One of the first university television systems; staffed professionally with student assistance; presents TV educational programs to North Carolina over a network of five stations.

Other

UNC OUTING CLUB: A student organization under the supervision of the Intramural Program; sponsors a wide range of outdoor activities.

YOUNG DEMOCRATIC CLUB: An organization which promotes interest in the Democratic party at the local level; encourages later membership in the national Democratic party.

YOUNG REPUBLICAN CLUB: A group which promotes interest in the Republican party activities at a local level; encourages future membership in the national Republican party.

UNIVERSITY ART LEAGUE: An organization made up of students interested in art; promotes art workshops and sidewalk art exhibits.

STUDENT NATIONAL EDUCATION ASSOCIATION: Represented by the Frank Porter Graham Chapter at the University; promotes interest in the professional teachers of America.

GERMAN CLUB: A group composed of thirteen fraternities with the purpose of bringing national talent to the campus for a concert three times a year; open to the membership of the thirteen member fraternities.

GORGON'S HEAD LODGE AND ORDER OF THE GIMGHOULS: Groups composed of selected members for the purpose of holding fraternal social gatherings.

FLYING CLUB: An organization made up of a group of persons interested in learning and promoting flying.

OTHER CLUBS: Most departments and schools sponsor undergraduate and graduate clubs in their interest area.

HONORARY SCHOLASTIC SOCIETIES

PHI BETA KAPPA: A national scholarship fraternity whose chapter was established at the University in 1904. Its purpose is to honor juniors and seniors who meet the requirements in scholastic achievement and character. These students are invited to become members.

PHI ETA SIGMA: A national freshman scholarship fraternity for men whose chapter was established here in 1947. Its purpose is to encourage and reward high scholastic attainment and, thus, promote good study habits early in college life. Freshmen who make at least an average of 3.50 their first semester or their first two semesters are eligible for membership.

BETA GAMMA SIGMA: Students of high academic achievement in the School of Business Administration may be considered for membership.

GAMMA ALPHA LAMBDA: A local society founded in 1961, which honors freshman women for high academic achievement.

GAMMA BETA PHI: A service-leadership organization for students in American colleges and universities. Membership is open to former members of Beta Clubs in high schools and to other qualified students upon invitation by the local chapter. The Beta of North Carolina Chapter was established here in May 1965.



ALTERATIONS AND ADDITIONS
TO
THE CAROLINA INN
UNIVERSITY OF NORTH CAROLINA

DELTA SIGMA RHO: A national forensic fraternity; members must excel in scholarship.

STUDENT HONORARY SOCIETIES

ORDER OF THE GOLDEN FLEECE: Senior honor society for men; was founded here in 1903. It selects each year from the men in the junior class, or above, those considered to possess the highest qualifications in character, ability, achievement, and leadership.

THE VALKYRIES: Highest honorary organization for women; recognizes and honors the women students most outstanding in character and achievement, the number selected each year not exceeding two per cent of the women enrolled. It was established here in 1941.

ORDER OF THE GRAIL: Founded here in 1920 as an honorary service organization for the purpose of fostering better relations and social rapport between fraternity and non-fraternity men. Each year thirteen outstanding rising junior and senior men are honored with membership, the number almost evenly divided between fraternity and non-fraternity men.

ORDER OF JANUS: Founded in 1956 for the purpose of honoring individuals who had worked to improve residence hall conditions and life; its membership is selected from the entire University community.

ORDER OF THE OLD WELL: Founded here in 1949, for the purpose of recognizing and honoring campus service and accomplishments on a point basis in contrast with the Golden Fleece, Valkyries, Grail, or Janus, who use intangible appraisal bases. Membership is open to all juniors and seniors who achieve a certain minimum number of points—all activities such as scholarship, student government, athletics, forensics, publications, dramatics, music, being evaluated by a proper distribution of points.

**OTHER SCHOOL AND DEPARTMENTAL HONORARY
AND RECOGNITION AND SERVICE SOCIETIES**

Alpha Epsilon Delta (premedical); Alpha Kappa Delta (sociology); Alpha Phi Omega (BSA-Service); Amphoterothen (public speaking); Arnold Air Society, The Century Squadron, Angel Flight (Air Force ROTC Auxiliary); Delta Phi Alpha (German); Kappa Tau Alpha (journalism); Order of the Coif (law); Phi Alpha Theta (history); Phi Delta Kappa (education); Phi Mu Alpha Sinfonia (music); Physics Club; Pi Delta Phi (French); Pi Mu Epsilon (mathematics); Pi Sigma Alpha (political science); Rho Chi (pharmacy); Scabbard and Blade (military); Sigma Delta Chi (journalism); Sigma Gamma Epsilon (earth sciences); Sigma Theta Tau (nursing); Sigma Xi (science).

STUDENT HOUSING

In Chapel Hill, at the University of North Carolina, student housing is considered to be an integral part of the educational program. Residence Halls are not merely places to sleep; they are "home" for our students for many months.

It is our aim that Residence Halls provide an environment that will assist each student in developing academically and socially.

The University reserves the right to approve the housing of all students whether they live on or off the campus, and to make changes in room assignments or transfer students to other residence halls during the school term. Each University student is required to maintain a correct local address with the University. By Trustee action the administration is authorized to establish minimum standards of health, safety, and general welfare in regard to housing and to require that students maintain their residence in quarters which comply with these standards. The University also reserves the right to make changes in room rent and other charges stated in this section at any time. All charges are tentative and subject to annual cost studies.

Rent does not cover occupancy during periods when the University is not officially in session.

Assignments to rooms are made in the order in which applications are received. Rooms are rented for the academic year, September through May. After July 1 for the fall semester, and January 15 for the spring semester, rent payments are not refundable except for: illness which prevents enrollment; withdrawal because of illness; military draft (for men); death in the family; or dismissal for disciplinary or academic reasons.

The University Residence Halls or houses make up several different residential colleges. The colleges range in size from about 400 to 1,000 students. Each college conducts social, intramural athletic, and student government programs for its residents.

The Houses and Colleges are run by officers elected by the students in accord with University tradition of long standing.

A College Master or Residence Director is in charge of each residence hall, and in most there are Resident Assistants or Advisers who aid the students. These persons are graduate or upperclass students in some instances, and full time professional staff in others: all have had experience and training. Students are urged to communicate with their Residence hall staff for assistance and counsel.

All residence halls have either a canteen or vending machine for soft drinks and sandwiches. Most halls have a telephone in each room. Mail is delivered each day except Sundays and holidays. All mail should have residence hall name and room number. *The Daily Tar Heel*, student newspaper, is delivered daily, and other newspapers are available.

Each room is furnished with basic items, but residents may bring rugs, curtains, etc. Students furnish their own pillows, blankets, and sheets, or these items may be rented from the University Linen Rental Service. The University provides study lamps in the newer buildings only. (Avery, Parker, Teague, Morrison, James, Ehringhaus, and Craige.)

Daily janitor or maid service is provided, but each student is expected to make his bed and keep the room in order.

In addition, each residence hall has a social room, TV set, and other recreational equipment.

The right to occupy a room is not transferable and terminates with the expiration of the lease. Sale or transfer of a student's right to occupancy will be considered a fraudulent transaction and will result in forfeiture of the room by the lessee. The room then becomes available for assignment by the Office of Residence Life.

Should a student be dismissed or otherwise withdrawn from the University, he or she is expected to leave the University residence and Chapel Hill within 48 hours.

The University reserves the right to require any student whom it considers, for any reason, an undesirable tenant to vacate a residence hall room.

The occupant of a room will be held directly responsible for all damage done to his room and its furniture.

No pets may be kept in University residence halls or housing units on penalty of forfeiture of right of occupancy.. Outside aerials, cooking appliances (with the exception of electric coffee percolators), air-conditioning units, and other electrical equipment (with the exception of refrigerators, electric irons and radio-phonographic equipment) may not be used. Refrigerators must be registered with the Office of Residence Life before connecting to power source. Residents convicted of using unregistered refrigerators or unauthorized electrical appliances will be subject to a fine of \$20 or loss of refrigerator privilege, or both.

REQUIREMENTS FOR HOUSING: Students who enter the University as freshmen must reside in University housing (or fraternity-sorority houses, or Granville Towers) through their first two academic years of enrollment. Students who enter the University with sophomore or junior transfer status must reside

in University housing (qualified above) during their first academic year of enrollment. Individual exceptions may be made by the Dean of Men or the Dean of Women upon written application for causes such as marriage, veteran status, age above 21, health conditions as attested by the University Infirmary, residence within commuting distance with parents or legal guardians or members of immediate families.

RESIDENCE HALL TENANCY: Students already living in a residence hall desiring to retain rooms for the next academic year must make application as follows:

Pay a \$25.00 deposit to the University Cashier, and file a room reservation card at the Office of Residence Life by a date announced. The deposit is forfeited on cancellations after June 10th.

Room assignments will be canceled and the deposit forfeited unless rent for the fall semester is paid in full by July 1.

Room reservation for either of the two summer terms is made upon payment of the full amount of rent for one term, refundable if cancellation is received by June 7 for the first summer term, and by July 13 for the second summer term.

HOUSING FOR WOMEN

The University provides residence hall space for nearly 2,000 women students. Each residence hall has a large social area, study rooms, and a laundry room with washers and dryers.

For housing requirements see above.

Rent is normally \$417 per academic year for each person in a double room. There is a very limited number of single rooms and some large triple rooms. Rent varies accordingly.

A newly accepted student should mail \$208.50 along with her room application card to the University Cashier. This payment includes rent for one semester plus a \$5.00 residence hall social fee. Fall semester rent must be paid by July 1. The rent, less \$25.00, is refundable on cancellations made by July 1 for the fall semester and by January 15 for the spring semester.

After these dates rent payments are not refundable except for: illness which prevents enrollment or causes withdrawals; death in the family; dismissal for disciplinary reasons; or scholastic ineligibility.

HOUSING FOR MEN

The University provides residence hall accommodations for approximately half of its male enrollment. All single male freshmen are required to live on the campus or in University Square

except bona fide residents of the Chapel Hill area. If, for any reason, the student wishes to cancel his assignment for the spring semester, he may do so upon notification to the Housing Office on or before January 15. A newly accepted student should mail \$169.50 along with his room application card to the University Cashier. This payment includes the semester rent plus a \$5.00 residence hall social fee and a \$1.00 key deposit. The annual charge of \$339 is payable in advance as follows: upon application for room, \$169.50, for fall semester; by January 15, \$169.50 for spring semester. The reservation deposit, less \$25.00, is refundable on cancellations made by July 1 for the fall semester, and January 15 for the spring semester.

HOUSING UNITS FOR MARRIED STUDENTS

The University has a limited number of housing units for married students. It is the general policy of the University to give priority to the applications of married graduate students.

Most of the apartments are unfurnished. Minimum rent for the newer brick apartments is \$82.00 per month for one bedroom units, \$92.00 per month for two bedroom apartments, including electric stoves, refrigerators, heat, and water. A limited number of two bedroom furnished apartments rent for \$110.00 per month.

Early application to the Housing Assignments Officer in the Office of Residence Life is urgently recommended. Married students, especially married foreign students, should not bring their families to Chapel Hill until their housing arrangements have been settled.

The Office of Residence Life maintains listings of off-campus accommodations. Satisfactory arrangements for these places are best made by applying in person.

STUDENT DINING FACILITIES: Dining facilities are operated in locations convenient to residence halls and meals are offered at reasonable rates.

Privately Owned Residence Hall Accommodations—University Square

Nearly 800 women and 700 men are housed in privately owned Granville Towers. The location is just off the UNC campus about one block from the Carolina Inn.

These supervised residence halls, one for women, one for men, and one coeducational, have a cafeteria-dining commons. The fee charged includes room and board. Further information is available from Granville Towers, University Square, Chapel Hill, North Carolina 27514.

Arrangements for these accommodations should be made direct with Granville Towers Business Office.

Laundry, Linen, Pillow, and Blanket Services

LAUNDRY SERVICE: Finished laundry service at reasonable cost is provided by the University Laundry Department to students who wish to use it. This service is available on a Cash-and-Carry basis at any of the eight Laundry Call Offices. (Students desiring to do so may use the deposit system in lieu of Cash-and-Carry.)

ADDITIONAL LAUNDRY SERVICES: Wash-Dry-Fold service (nothing finished) is available at any of the University Laundry Call Offices. This is an economical, Cash-and-Carry service and is separate from the finished laundry service.

LINEN RENTAL SERVICE: For students who do not wish to provide their own linen, the University Laundry will furnish two sheets, one pillow case, and three bath towels each week on an exchange basis. This service is available at all Laundry Call Offices. A fee of \$33.00, which includes a \$5.00 refundable deposit, for the school year (September through May) is payable when service is requested.

Pillows may be rented for \$1.55 for the school year. Blankets are available for a deposit of \$5.00 each, with provision for a refund of \$2.00 when blanket is returned in good condition.

DRY-CLEANING: Complete dry cleaning service is available at all University Laundry Call Offices on a Cash-and-Carry basis.

COIN-OP-SERVICE: *Coin-Op* service is available at Avery, Craig, James, and Joyner laundry offices.

ACADEMIC PROCEDURES

REGULATIONS AND REQUIREMENTS

Each student is responsible for observing the procedures, regulations, and requirements of the University as they are announced here and in other official University publications. This section sets forth some of the requirements and regulations which are of particular concern to undergraduates, but it is not intended to constitute a complete list of all such regulations and requirements. Unless otherwise stated, these regulations uniformly govern the academic progress of the student from his first year in the General College through the final semester in the College of Arts and Sciences or one of the three undergraduate professional schools (Education, Business Administration, and Journalism; these three issue their own bulletins). It must be emphasized that the staff of the University will gladly assist any student with details of his program or other academic problems, but that such assistance does not relieve any student of his individual responsibility for meeting the requirements and observing the regulations of the University.

REGISTRATION

A. General

All students are required to register in accordance with the procedure established for the current year. New students must present evidence that their medical reports have been properly certified to the Director of Student Health Service. A student registering later than the time designated for his registration must pay an additional fee of \$5.00 for delayed registration. If the delay results from circumstances clearly beyond the student's control, an appeal may be made in writing to the Chancellor, provided that the appeal shows sufficient justification for the delay to secure approval by the dean of the division in which the student is enrolled.

Registration for credit for any course is limited to the first four days of instruction unless the late registration is approved by the instructor of the course and the student's dean. Changes in registration are limited to the same four-day period and must be made in accordance with the established procedure, which requires approval of the faculty adviser and permission of the dean.

A complete registration in the University includes, among other things, registration of automobiles, obtaining an Identifi-

cation Card, and completion of the required physical examination. Failure to complete these or any other part of the registration procedure will make a registration incomplete and subject to immediate termination.

Information submitted on admission and registration forms is instrumental in determining admission priority and academic status. False statements will be considered violation of the Honor System. Concealment of required information is falsification of the record.

A student must make application and register in his full legal name as shown on birth certificate or court order authorizing a change.

B. General College Students (freshmen and sophomores)

Each General College student is registered for classes by his General College adviser. New students will be notified in advance of arrival in Chapel Hill of their General College adviser's name and office number and must report to him at the appointed time for selection and official approval of courses for which the student will be registered.

C. Juniors and Seniors

Students in one of the upper colleges (Arts and Sciences, Business Administration, Education, or Journalism) report first to the office of the appropriate dean to be assigned to a faculty adviser in the department or area of the student's intended major. The student's program of study is then arranged in consultation with this adviser and officially approved by him. (In some curricula, the student's adviser will be on the staff of the dean's office, in which case he will handle the entire registration process for the student.)

CHANGES OF SCHEDULE

If clearly necessary, changes in registration may be made during the first four days following the regular registration period. Thereafter, the grade of F is normally given on a course that is dropped when the student's standing is below passing.

For General College students, all changes of schedule must be approved in writing by the student's General College adviser.

Changes of schedule for juniors and seniors must first have the approval of the department adviser, if any, and then must be approved in writing by the dean of the school concerned.

No change of any kind may be made without the written authorization of the General College adviser or dean and no course may be dropped in the last two weeks of a semester. A student who ceases to attend a class without written authorization is given the grade *F* on the course.

ACADEMIC LOAD

Quantitative requirements are expressed in terms of *courses* and *semester hours*. A full course is one representing three or more semester hours of credit, typically earned in a class which meets for one hour on three alternate days each week during the semester. Qualitative requirements are expressed in terms of letter grades and quality-point averages. (See "Grading System" and "Quality Points and Averages," pages 116-117).

A student must take at least 15 hours (five full courses) of credit work each semester, exclusive of required physical education, except when a lighter schedule is justified by special circumstances and approved by the student's dean. (The average study load for a freshman is 16 to 18 semester hours per semester.) General College students with a quality-point average of 2.0 on the preceding semester's work may take six courses representing not more than 20 hours of credit (for six courses representing more than 20 hours of credit, a 3.0 quality-point average is required). For juniors and seniors the requirements are a 2.0 average to take 18 hours, a 3.0 average to take 19 or 20 hours, and no more than 20 hours in any case.

When a student's work load is decreased below the minimum by dropping a course, his dean will determine whether he may remain in the University with less than the minimum load.

The grade of a student who drops or is dropped from a course in which he is failing at that time is recorded as an *F* unless, in the judgment of his dean, his dropping was necessitated by circumstances beyond his control.

CLASS ATTENDANCE

Regular class attendance is the obligation of every student, and the student is responsible for all the work of all class meetings, including tests, written work, and laboratory work. No right or privilege exists which permits a student to be absent from any given number of class meetings. Unexcused absences from classes, laboratory periods, tests, or examinations may result in the student being dropped from the course with the grade *F*.

Absences from class for valid reasons are excused only by the instructors. A student should present his explanation for any absences to his instructor at the next meeting of the class. If the student misses without excuse more classes than the instructor deems advisable, the instructor may request that the student's dean or General College adviser drop him from the course with grade *F*.

FINAL EXAMINATIONS

Final written examinations are required in all courses. A general schedule announced several weeks before the end of each semester sets the time for each examination, and no regular examination may be taken at any time other than that specified in the general schedule. After announcement of the examination schedule, no changes in times of final examinations can be made. When a student is unable, for reasons clearly beyond his control, to take a final examination at the scheduled time, he can be excused only by the Student Health Service or his academic dean. All regular final examinations must be taken in Chapel Hill.

GRADING SYSTEM

For undergraduates, passing grades are *A* (excellent), *B* (good), *C* (fair) and *D* (passed). The abbreviations *Cond.* (condition), *Inc.* (work incomplete), and *Abs.* (absent from examination without official excuse) indicate that the grade *F* will be recorded unless the particular deficiency is removed within 12 months. The grade *Cond.* will be changed to grade *D* by passing a special examination. The grade *Exc. Abs.* (officially excused) or *Inc.* may be removed without any restriction as to the grade assigned by the instructor.

Marked deficiency in English composition will be indicated by symbol *cc* attached to the letter grade assigned in the course. Final credit for the course will not be allowed until the *cc* (composition condition) is removed. A *cc* may be removed in two ways: 1. By successfully completing English C, a non-credit Writing Laboratory course. 2. By completing, with a grade of *C* or better, English cO, a non-credit correspondence course. (A *cc* may not be removed by taking English 30, 32, or 33.)

The Faculty Council, at its meeting of May 1, 1970, approved the following proposal from the Administrative Boards of the General College and the College of Arts and Sciences concerning the "pass-fail" grading system. This proposal modifies the "pass-fail" grading system which has been in effect for the past two years. These new regulations will be effective for the academic years of 1970-1971 and 1971-1972, and they will be reviewed and resubmitted to the Faculty Council in the spring of 1972.

1. A maximum of twenty-four hours of "pass-fail" credit may be applied to graduation requirements.
2. Any course may be elected for "pass-fail" except:
 - a. English 1 and 2

- b. Courses taken to meet the foreign language or math sciences requirement
 - c. The eight courses chosen as Divisional Electives in the new General College curriculum
 - d. Courses in the major
 - e. Related courses specifically required (and designated by number) by the major department or curriculum
 - f. Summer courses
3. Fifteen hours of letter-grade credit are required to qualify for entry on the Dean's List.

Before the end of the second full week of classes a student may designate a course (or courses) for which he has registered in the regular manner as "pass-fail" by application to the office of his dean. Once a course has been selected for "pass-fail" the selection is irrevocable. Appeals for exceptions will not be heard. In computation of grade point averages, a failure on "pass-fail" will be computed as hours attempted; a pass will not be computed as hours attempted. A student who changes his major to a field in which he has already taken "pass-fail" work may credit only one "pass-fail" course in the new major. Should he have taken more than one such course, he would forfeit credit.

QUALITY POINTS AND AVERAGES

For all students entering the University after June 1, 1960, quality points will be awarded on the following basis:

For each semester hour with grade of *A*—4 quality points

For each semester hour with grade of *B*—3 quality points

For each semester hour with grade of *C*—2 quality points

For each semester hour with grade of *D*—1 quality point

For each semester hour with grade of *F*, *Incomplete*, *Absence* or *Condition*—0 quality point

For graduation, the quality-point requirement is a *C* (2.0) average on all courses taken in *The University of North Carolina at Chapel Hill* (regular sessions, summer sessions, or correspondence courses; quality points are earned on courses taken in the Evening College only when the student is eligible for enrollment in the regular University) and on courses taken on the other campuses of the Consolidated University (Raleigh, Greensboro, Charlotte, Asheville, or Wilmington). Thus grades earned and semester hours attempted in other institutions are not included in calculating the quality-point average in the University.

To compute the quality-point average, add the semester hours for all courses attempted in the University (including grades of *Inc.*, *Abs.*, etc.) and divide into the total quality points earned on these semester hours. Do not include hours or grades from other institutions except those earned within the Consolidated University.

ACADEMIC ELIGIBILITY

To be eligible to remain in the University, a student must meet the following quality-point average requirements:

- 1.25 quality-point average to begin a third semester of college work
- 1.50 quality-point average to begin a fifth semester of college work
- 1.75 quality-point average to begin a seventh semester of college work
- 1.90 quality-point average to begin a ninth semester of college work

The average must be earned on the minimum study load of fifteen semester hours for each semester in school, except when a student is allowed to carry a lesser study load by permission of his dean or General College adviser.

Transfer students should note that *semesters in residence* (but not hours attempted or quality points) in other institutions are counted in determining eligibility except as stated above.

RESTORATION OF ACADEMIC ELIGIBILITY

A student who has failed to meet the quality-point requirements for continuation may restore his academic eligibility with work completed in the summer session of the University at Chapel Hill or through the University (Chapel Hill) Bureau of Correspondence Instruction. It must be noted that, for restoration of academic eligibility, quality points are awarded *only* on grades earned in The University of North Carolina at Chapel (summer session or correspondence courses) and *not* on grades earned in any other institution or in the Evening College.

It should be noted further that an ineligible student who attends another institution must count the period of residence at such institution in computing the quality-point average necessary for restoration of his academic eligibility. In addition, a former student applying for readmission after attending another institution must be considered as a transfer student and must therefore have at least a (C) average on all work taken in, and be eligible in all respects to return to, other institutions attended since leaving the University.

WITHDRAWAL

Honorable dismissal or prospect of readmission may be forfeited by a student who withdraws at any time other than the end of a term without first securing approval by his dean of a formal withdrawal. Three steps are involved: (1) application filed with the student's academic dean; (2) full investigation of circumstances during lapse of twenty-four hours; and (3) prompt filing of withdrawal form (after approval by the academic dean) with a recorder in the Office of Records and Registration (Hanes Hall).

When a student withdraws from the University, officially or unofficially, before the end of a regular semester, then in determining the student's eligibility for readmission

- A. that semester *shall* be counted as a semester in residence
 - 1. if withdrawal occurs as a result of disciplinary action;
 - 2. if withdrawal occurs after nine full weeks of classes have elapsed in the semester, regardless of the student's standing in his classes;
 - 3. if at the time of withdrawal at any point in the semester, the student is reported as below passing in two or more of the courses he is taking (in such cases, the grade *F* is recorded on all courses in which the student is below passing);
- B. that semester *shall not be* counted as a semester in residence and no grades will be recorded
 - 1. if official withdrawal occurs for medical reasons on the recommendation of the Director of Student Health Service;
 - 2. if withdrawal occurs before the end of the ninth week of classes and the student is reported to be below passing in not more than one of the courses he is then taking.

In case of withdrawal from the University, tuition and fees will be prorated over a period of nine weeks from the date of registration. The student pays one-tenth of his semester bill for each week he remains in residence. No refund will be made after the ninth week of the semester. See page 108 for information regarding room rent refunds.

READMISSION

A student who has withdrawn from the University for any reason must have, in order to be academically eligible to return,

a quality-point average (in The University of North Carolina at Chapel Hill) of

1.25 to return for a third or fourth semester of college work

1.50 to return for a fifth or sixth semester of college work

1.75 to return for a seventh or eighth semester of college work

1.90 to return for a ninth or later semester of college work

Note that quality points to restore eligibility are awarded only on work taken in The University of North Carolina at Chapel Hill (summer session or correspondence) and *not* on work taken in any other institutions or in the Evening College.

Application for readmission must be made to the Director of Undergraduate Admissions.

Readmission is not automatic in any case; each application is considered carefully in the light of all attendant circumstances, including space limitations within the University.

GRADUATION

To qualify for an undergraduate degree, a student must successfully complete at least 40 courses of at least three semester hours each for a total of at least 120 semester hours, exclusive of physical education (quantitative requirements are higher than this minimum in some B.S. degree curricula), and the student must have a 2.0 (C) average on all work attempted in the University at Chapel Hill. The required 2.0 average must be earned in a total number of hours not to exceed 45 hours beyond the minimum graduation requirements for the degree being sought. In the College of Arts and Sciences, at least 18 semester hours of work with grades of C or higher are required in the student's major, and at least half of the student's major must be completed in this University.

Two semesters before the expected date of graduation the student should file in the office of the dean his application for a degree. A student who has not filed application for graduation on or before December 1 for January graduation and before April 10 for June graduation cannot be included in the list of graduating seniors.

RECORDS AND REPORTS OF SCHOLASTIC ACHIEVEMENT

At the close of each semester the Office of Records and Registration receives instructors' reports and compiles, for all courses taken by each student, the number of semester hours and the grades assigned by his instructors. Shortly thereafter a report of the student's achievement during the semester is mailed to his parents or guardian.

TRANSCRIPTS OF RECORD

A statement of official academic record includes all significant recorded information concerning the student's admission, classification, and scholarship. No partial or incomplete scholastic record will be given. If the student's scholarship has been such as to prevent his continuance in the University and is still in force at the date of the record, a plain statement of such fact will be included.

A statement of honorable dismissal will not be granted to students whose conduct and character would not entitle them to remain in the University. In every transcript full mention will be made of any probation, suspension, or other temporary restriction imposed for unsatisfactory conduct and still in force when the statement is made.

The official academic record is used in the conduct of student personnel affairs. In special circumstances, however, this record is available to properly identified State and Federal investigative agencies. Any student who does not wish to have his official academic record made available may inform the Office of Records and Registration in writing that *no* outside inquirer shall have access to his official record without his written consent.

THE HONOR SYSTEM

The Honor Code

"It shall be the responsibility of every student at the University of North Carolina to obey the Honor Code, prohibiting lying, cheating, or stealing, when these actions involve academic processes or university, student, or academic personnel acting in an official capacity and to report any such cases of which he has knowledge."

The Roman philosopher Seneca said in the first century A.D. "It goes a long way toward making a man trustworthy to trust him." This is the essence of the Honor Code at Carolina, a code based on the assumption that mutual respect and trustworthiness are the natural result of a strong band of trust between the University and an individual.

Inherent in the Honor Code is the belief in a person's honesty, self-discipline, and sense of responsibility. That is why there will be no proctors in classrooms during exams to prevent cheating. That is also why students report violations committed by other students. This practice of self-discipline is not meant to damage the offender, but to honor the responsibility and trust placed in students by the entire University community—a responsibility to insure honesty and integrity among peers involving all academic processes.

There are those who will cheat, lie, or steal at this University under the guise of "getting an education." For these people, no code of conduct will have any effect, let alone one involving personal honor. Yet for nearly one hundred years, the University of North Carolina has operated a system of self-discipline under the assumption that honesty is a universal principle of conduct. It is hoped that you as entering students will live up to this tradition of self-discipline by actively participating in and showing support for the Honor Code.

Examples of Honor Code Violations

Lying, cheating, and stealing are the three major classifications of Honor Code violations. For the benefit of the incoming student, the following are included as examples of breaches of the Honor Code: (This list is by no means inclusive.)

A. Cheating—representing someone else's work as being your own.

1. Copying

2. Collaboration—working with another person or persons in the execution of a test, report, or paper without authorization to do so.
3. Plagiarism—the *intentional* or *unintentional* use of someone else's words or thoughts without giving him proper credit. All uncited work is assumed to be the sole product of the author. Therefore, when using material from outside reading, reference material, etc., the source *must* be indicated by a footnote or another device.
4. Use of crib notes—referring to notes brought to class for use during an examination.
5. Use of textbooks and/or class notes during an examination without authorization to do so.
6. Laboratory violations—unsanctioned use of old labs. Except where collaboration is permitted or special regulations are made by the instructor, all work for which credit is sought must be performed by the individual student. Where procedures are not clear, it is the responsibility of the student to confer with his teacher.

B. Lying—deliberate misrepresentation of the truth

1. Deliberate misrepresentation of the truth to other persons acting in an official capacity (*i.e.*, Residence Administration, Attorney General, Dean of Men, Dean of Women, Instructors, Campus Policemen, Fellow Students, Officers or representatives of Granville Towers, etc.).
2. Falsification of the class roll—the student who signs in another student who is not present for a class is guilty of an Honor Code violation. The other student, should he be a party to the action, is likewise guilty. For women students, this also applies to sign-out slips.
3. Falsification of library cards—signing any name other than one's own to a library card is clearly an act of dishonesty and will be treated accordingly.
4. Laboratory violations—counterfeited reports. Except when specifically told that other procedures are acceptable, the student is expected to perform all phases of laboratory work.
5. Fraudulent telephone calls—giving the operator a false name when asked for identification.

- C. Stealing—taking possession of another person's property without paying for it or being given permission to appropriate it.
1. Misuse of funds—use of organizational or institutional funds without authorization to do so.
 2. Bad checks—writing checks when it is known that no funds or insufficient funds exist to cover the payment of said checks.
 3. Books—taking books belonging to other students and selling them.
 4. Telephone calls—charging long distance calls to numbers without authorization to do so, or defrauding the telephone company in any way.
 5. Forgery—forging another person's name to a check.

The Campus Code

“And it shall be the further responsibility of every student to abide by the Campus Code, namely to conduct oneself so as not to impair significantly the welfare or the educational opportunities of others in the University Community.”

There are instances in which someone's actions infringe on the rights or welfare of other members in the University community. For this reason, the Campus Code is defined to emphasize students' belief that the University Community should have a code of conduct for non-academic offenses that impair the welfare or educational opportunities or others in it. In light of this, violations of the Campus Code are handled in the same manner as violations of the Honor Code.

Examples of Campus Code Violations

The meaning of “significantly impairing the welfare or the educational opportunities of others” may be as clear as the meaning of academic honesty. No attempt has been made to define either in precise detail: rather it is left to the student to rely upon his training and common sense. Examples of possible violations include:

- a. theft or destruction of property, personal or institutional.
- b. assault—physical or verbal.
- c. willfully causing a coed to violate a woman's rule resulting in her obtaining a penalty of record.

Penalties

A wide range of penalties has been set up to deal with the nature of the offense, the effect upon the defendant, and the standards of the Honor and Campus Codes. At all times the intent is to correct as well as to punish.

Definite and Indefinite Suspension are separate penalties meaning departure from the University for a time. Under Definite Suspension there is a specific terminal date while under Indefinite Suspension a student must petition formally to the Council for reinstatement. One of the two is the normal sentence for an Honor Code offense, and it lasts no less than the remainder of the semester in which the offense is committed.

Definite and Indefinite Probation follow a similar pattern. They prohibit a student from participating in any extra-curricular activities or representing the University in any way. A second conviction by the Councils while the student is on probation usually means suspension.

Official Reprimand is an official penalty that is recorded on the front of a student's transcript for four and one half months from the time the penalty is given, and is then transferred to the back of his permanent record thereafter. The penalty of an Official Reprimand carries no further restrictions.

Court Reprimand is an unofficial penalty which does not appear on the student's permanent record. However, it is noted in the files of the Council and the Office of the Dean of Student Affairs.

Campusment, likewise, is an unofficial penalty used by the Women's Council. Although it does not appear on the permanent record card, it is noted in the files of the Dean of Women.

Procedure for Reporting

When a violation of honor is suspected, the student observing the act is obligated under the Honor Code to report the individual and the circumstances. First, however, he should confront the suspected student and inform him that he has twenty-four hours to turn himself in.

If, after twenty-four hours have elapsed, the suspected student has not turned himself in, the violation may be reported in one of three ways: first, to the Attorney General, in the Student Union; second, to a member of the appropriate council; and third, to the Dean of Men or the Dean of Women, in Steele Building.

A member of the faculty who has cause to turn in a student should handle the case in the same manner.

Violations of the Campus Code may be reported in the same way that Honor Code offenses are.

GENERAL UNIVERSITY REGULATIONS AND POLICIES

The personal conduct of the University student is subject to the moral and legal restraints found in any law-abiding community. The Honor Code and the Campus Code are positive forces for good citizenship, not exemptions from its sterner responsibilities. Though the Chancellor holds an expressly stated mandate from the Board of Trustees to dismiss students known to be guilty of offenses against the peace and moral tone of the campus, the exercise of this authority is rarely necessary.

University regulations, therefore, are not specifications for acceptable conduct or detailed lists of offenses subject to penal action. They are intended to provide an informational basis for systematic procedures and equitable decisions in many situations involving individual students and officers of the University.

Trustee Resolution on Student Discipline

"... It shall be the duty of the Chancellor in each of the component institutions to exercise full authority in the regulation of student conduct and in matters of student discipline in that institution. In the discharge of this duty, delegation of such authority may be made by the Chancellor to faculty committees and to administrative or other officers of the institution, or to agencies of student government, in such manner and to such extent as may by the Chancellor be deemed necessary and expedient; provided, that in the discharge of this duty it shall be the duty of the Chancellor to secure to every student the right of due process and fair hearing, the presumption of innocence until found guilty, the right to know the evidence and to face witnesses testifying against him, and the right to such advice and assistance in his own defense as may be allowable under the regulations of the institution as approved by the Chancellor. In those instances where the denial of any of these rights is alleged, it shall be the duty of the President to review the proceedings."

ALCOHOLIC BEVERAGES

The University will establish no policy or regulation that sanctions either the use of alcoholic beverages or any action which contravenes State or Federal law regarding their purchase or consumption.

The Alcoholic Beverage Control Laws as amended in 1967

(G.S. 18-90.1) make it unlawful for any minor under 21 years of age to purchase or possess or for anyone to aid or abet such minor in purchasing any alcoholic beverages which contain more than fourteen precentum (14%) of alcohol by volume. The University will cooperate in the enforcement of this statute.

The University discourages the drinking of alcoholic beverages, drunkenness, and other abuses of alcoholic beverages. Being under the influence of alcohol is considered a serious breach of conduct, and students who violate these standards are subject to appropriate disciplinary action.

AUTOMOBILE REGULATIONS

All students entering the University as freshmen are ineligible to own and/or operate a motor vehicle in or around Chapel Hill during the first two semesters in residence at the University. In addition, all other undergraduates having less than a C (2.0) average are ineligible to own and/or operate a motor vehicle in or around Chapel Hill.

Registration of Motor Vehicles

Every student at the University who owns and/or operates a motor vehicle in or around Chapel Hill is required by University regulations to register it with the Traffic Office and to secure and display a sticker indicating that he is a student at the University. Motor vehicle registration is made each school year as a part of the academic registration procedure and registration is not complete until this has been accomplished. Motor vehicles acquired after the time of enrollment must be registered at the Traffic Office within 24 hours after the time of acquisition.

The registration sticker must be affixed to and displayed on the vehicle for which it is issued within 24 hours of the time of issuance.

Failure to comply with the above regulation shall subject the offending student to termination of his University registration and to the usual University fee of \$5.00 charged for reenrollment and may subject him to having his eligibility to have a motor vehicle in Chapel Hill cancelled or suspended.

A registration fee for each motor vehicle is collected at the time of registration.

Students who are otherwise ineligible but have physical handicaps may apply for appropriate motor vehicle privileges upon recommendation of the University Infirmary staff.

A student who is provided a motor vehicle for his principle use by a faculty or staff member must register the motor vehicle in accordance with the regulations pertaining to student motor vehicle registration.

The registration regarding freshmen motor vehicle priv-

ileges and those undergraduates with less than a *C* average do not apply to undergraduates who are legal residents of Chapel Hill except that such persons may not operate a motor vehicle on the campus during zoning hours.

Students who do not regularly keep a motor vehicle in Chapel Hill and who desire to bring a motor vehicle on a temporary basis, regardless of their eligibility, must first apply to the Traffic Office to see if they can obtain a temporary permit. Special circumstances involving unusual hardships, emergencies, or medical reasons are considered as valid reasons to apply. Temporary permits issued for any other reason will be for a maximum of seven days and for a fee of \$1.00.

Revocation of Permits

The Director of Traffic is authorized to suspend or revoke a motor vehicle registration of students who commit three or more offenses in violation of traffic regulations within a period of one academic year. Any such suspension or revocation shall be interpreted to mean that the offender may not possess or operate a motor vehicle in or around Chapel Hill for period of suspension or revocation. Any student who fails to comply with the terms of suspension or revocation may, at the discretion of the Dean of Student Affairs, be suspended from the University.

A complete set of rules and regulations governing parking and traffic is on file in the Traffic Office, B-3 Y Building. These regulations may be examined at any time.

CHANGE OF ADDRESS

Every student is required to keep the Office of Records and Registration advised at all times of his current local and home addresses. If his address (where he sleeps) changes, he must report this change on the "Change of Address Card" which is available in the Housing Office, Bynum Hall, and at the Office of Records and Registration, 1 Hanes Hall. Failure to do so may result in disciplinary action.

COMMERCIAL ACTIVITIES

Selling or soliciting by any person (private citizen or student), firm, or corporation on the campus of the University is prohibited.

CONDUCT IN AND USE OF RESIDENCE HALLS

In each residence hall there are posted detailed regulations governing conduct in and use of the halls. It is expected that these regulations will be strictly observed and that every student in his conduct and activities will have consideration for the rights and comfort of others.

DISRUPTION

Emergency Disciplinary Procedure in Cases of

Disruption in the Educational Process

The following statement has been incorporated in the By-Laws of the Board of Trustees of the University, and is quoted for the information of all members of the University Community.

Section 5-1. *Definition of Disruptive Conduct:* The University of North Carolina has long honored the right of free discussion and expression, peaceful picketing and demonstrations, the right to petition and peaceably to assemble. That these rights are a part of the fabric of this institution is not questioned. They must remain secure. It is equally clear, however, that in a community of learning, willful disruption of the educational process, destruction of property, and interference with the rights of other members of the community cannot be tolerated.

(a) Any student, faculty member (including full-time or part-time instructor), or employee who willfully by use of violence, force, coercion, threat, intimidation or fear, obstructs, disrupts or attempts to obstruct or disrupt, the normal operations or functions of any of the component institutions of the University, or who advises, procures, or incites others to do so, shall be subject to suspension, expulsion, discharge, or dismissal from the University. The following, while not intended to be exclusive, illustrate the offenses encompassed herein: occupation of any University building or part thereof with intent to deprive others of its use; blocking the entrance or exit of any University building or corridor or room therein; setting fire to or by any other means substantially damaging any University building or property, or the property of others on University premises; except as necessary for law enforcement, any display of or attempt or threat to use firearms or explosives or, for the purpose of intimidating, other weapons, in any University building or on any University campus; prevention of the convening, continuation or orderly conduct of any University class or activity or of any unlawful meeting or assembly in any University building or on any University campus; inciting or organizing attempts to prevent student attendance at classes; and, except with the permission of the Chancellor, blocking normal pedestrian or vehicular traffic on any University campus.

(b) Any faculty member (including any full-time or part-time instructor) who, with intent to obstruct or disrupt the normal operations or functions of any of the component insti-

tutions of the University, willfully fails or refuses to carry out validly assigned duties shall be subject to discharge.

Section 5-2. *Responsibility of Chancellor:*

(a) The Chancellor or his representatives shall have a duty to identify persons who violate the provisions of Section 5-1 (a) or (b) and promptly report their names to the President. In any such instance the Chancellor or his representative shall marshal the evidence, and the Chancellor shall report it to the President in writing.

(b) The Chancellor or his representative may recommend to the President that injunctive relief be sought from the courts to prevent occurrence, continuation, or recurrence of a violation of Section 5-1 (a).

Section 5-3. *Responsibility of the President:* When it appears that there is a violation of Section 5-1 (a) or (b), it shall be the duty of the President, and he is fully authorized to act, to take all steps which he deems advisable to protect the best interest of the University of North Carolina, and any of its component institutions, and to see that its Rules, Regulations and Policies are enforced. He shall insure that any person or persons found guilty after proper hearing shall be disciplined in such manner as may be warranted.

In carrying out these duties, the President may call upon any Chancellor, member of the University Administration, or member of the Faculty, and he may call upon an agency of a component institution created to deal with cases arising under Section 5-1 of these By-Laws. Conviction in any State or Federal Court shall not preclude the University from exercising its disciplinary authority in any offense under this or any other section of the By-Laws.

Section 5-4. *Responsibility of the Trustees:* The Trustees recognize that by statute they have the power to make such rules and regulations for the management of the University as they may deem necessary and expedient, not inconsistent with the constitution and laws of the State. While the Trustees fully appreciate their obligation in this respect, they further recognize that in dealing with those offenses against the University defined in Section 5-1 (a) and (b) hereof, they must impose the duty and authority of enforcing the policies set forth herein in the principal Executive Officer of the University—the President. It will be the responsibility of the Trustees to furnish all possible assistance to the President when requested by him.

Section 5-5. *No Amnesty:* No administrative official, fac-

ulty member, student, or employee of the University shall have authority to grant amnesty or to make any promise as to prosecution or non-prosecution in any court, state or federal, or before any student, faculty, administrative, or Trustee committee to any person charged with or suspected of violating Section 5-1 (a) or (b) of these By-Laws.

DRUGS

The illicit and improper use of certain drugs (for example, cannabis, amphetamines, barbiturates, opiates and hallucinogenic drugs) is incompatible with personal welfare and the pursuit of academic excellence and will not be tolerated by the University. Furthermore, the illicit possession or transfer of these drugs is a State and/or Federal offense and the University will cooperate fully with appropriate authorities in the enforcement of the law.

FIREARMS AND OTHER WEAPONS

The possession of bowie knives, dirks, daggers, loaded canes, sword canes, machetes, pistols, rifles, repeating rifles, shotguns, pump guns, or other firearms or explosives upon any University campus or in any University owned or operated facility, unless explicitly permitted by the appropriate Chancellor or his designated representative in writing, is forbidden. Violation of this prohibition constitutes grounds for suspension from the University.

REGULATIONS FOR WOMEN, 1970-1971

Copies of the complete Regulations for Women, including closing hours and overnight and weekend absences, will be furnished each undergraduate woman student at the time of her arrival at the University.

VISITING AGREEMENTS

Women students may visit in the social rooms of men's residence halls at hours specified by the Men's Residence Council Visiting Agreement. Visiting by women in men's fraternity houses is subject to the policies stated in the Inter-Fraternity Council Visiting Agreement. Both of these agreements are subject to approval by the Dean of Men and the Dean of Women at the beginning of each academic year.

Undergraduate students are not permitted to visit in the living quarters of members of the opposite sex in residence halls and fraternity houses except in accordance with the policy on Open House Functions.

STUDENT FINANCES

EXPENSES

Approximately \$1,825.00 covers the cost of an academic year (two semesters) at the University for a typical undergraduate male student who is a North Carolina resident. This figure includes official charges, housing, food, and other necessary expenses totaling \$1,542.00. An additional \$283.00 is estimated to cover clothing, travel, and spending money.

Nonresidents of North Carolina must pay a higher rate of tuition, an additional \$725.00 per year beyond that charged in-state students.

The undergraduate resident student's yearly expenses would include:

Tuition	\$ 225.00
Fees	173.00
Residence hall room (for men)	339.00
(women's room rent, \$417 per year)	
Meals (estimated)	600.00
Laundry deposit and linen rental (optional)	80.00
Books, supplies (estimated)	125.00
	1,542.00
Miscellaneous expenses (estimated)	283.00
(clothing, travel, spending money, etc.)	
	1,825.00
TOTAL FOR N. C. RESIDENT	1,825.00
Nonresident tuition differential	725.00
	\$2,550.00
TOTAL FOR NONRESIDENT	

RESIDENCE STATUS FOR TUITION PAYMENT

1. *General*: The tuition charge for legal residents of North Carolina is less than for nonresidents. To qualify for in-state tuition, a legal resident must have maintained his domicile¹ in North Carolina for at least the six months next preceding the date of first enrollment or re-enrollment in an institution of higher education in this State.

2. *Minors*: The legal residence of a person under twenty-one years of age at the time of his first enrollment in an institution of higher education is the residence of his parents or guardian.

1. Domicile is synonymous with legal residence. A person's domicile is his permanent dwelling place. It is the place where he is generally understood to reside with the intention of remaining there indefinitely or of returning there when absent. It is presumed that a person whose domicile is in North Carolina is registered to vote, files a North Carolina State Income Tax and other reports, and complies with other obligations of persons resident in North Carolina.

tution of higher education in this State is that of his parents, surviving parent, or legal guardian. In cases where parents are divorced or legally separated, the legal residence of the father will control unless custody of the minor has been awarded by court order to the mother or to a legal guardian other than a parent. No claim of residence in North Carolina based upon residence of a guardian in North Carolina will be considered if either parent is living unless the action of the court appointing the guardian antedates the student's first enrollment in a North Carolina institution of higher education by at least twelve months.

A minor student whose parents move their legal residence from North Carolina to a location outside the State shall be considered to be a nonresident after six months from the date of removal from the State.

For the purpose of determining residence requirements under these rules, a person will be considered a minor until he has reached his twenty-first birthday. Married minors, however, are entitled to establish and maintain their residence in the same manner as adults. Attendance at an institution of higher education as a student cannot be counted as fulfilling the six-month domicile requirement.

3. *Adults*: A person twenty-one years of age or older is eligible for in-state tuition if he has maintained continuous domicile in North Carolina for the six months next preceding the date of enrollment or re-enrollment, exclusive of any time spent in attendance of any institution of higher education. An in-state student reaching the age of twenty-one is not required to re-establish residence provided that he maintains his domicile in North Carolina.

4. *Married Students*: The legal residence of a wife follows that of her husband, except that a woman currently enrolled as an in-state student in an institution of higher education may continue as a resident even though she marries a nonresident. If the husband is a nonresident and separation or divorce occurs, the woman may qualify for in-state tuition after establishing her domicile in North Carolina for at least six months under the same conditions as she could if she were single.

5. *Military Personnel*: No person shall be presumed to have gained or lost in-state residence status in North Carolina while serving in the Armed Forces. However, a member of the Armed Forces may obtain in-state residence status for himself, his spouse, or his children after maintaining his ¹domicile in North Carolina for at least the six months next preceding his or their enrollment or re-enrollment in an institution of higher education in this State.

6. *Aliens*: Aliens lawfully admitted to the United States for permanent residence may establish North Carolina residence in the same manner as any other nonresident.

7. *Property and Taxes*: Ownership of property in or payment of taxes to the State of North Carolina apart from legal residence will not quality one for the in-state tuition rate.

8. *Change of Status*²: The residence status of any student is determined as of the time of his first enrollment in an institution of higher education in North Carolina and may not thereafter be changed except: (a) in the case of a nonresident student at the time of his first enrollment who, or if a minor his parents, has subsequently maintained a legal residence in North Carolina for at least six months, and (b) in the case of a resident who has abandoned his legal residence in North Carolina for a minimum period of six months. In either case, the appropriate tuition rate will become effective at the beginning of the term following the six-month period.

9. *Responsibility of Student*: Any student or prospective student in doubt concerning his residence status must bear the responsibility for securing a ruling by stating his case in writing to the admissions officer. The student who, due to subsequent events, becomes eligible for a change in classification, whether from out-of-state to in-state or the reverse, has the responsibility of immediately informing the Office of Admissions of this circumstance in writing. Failure to give complete and correct information regarding residence constitutes grounds for disciplinary action.

10. *Appeals of Rulings of Admission Officers*: Any student or prospective student may appeal the ruling of the admissions officer in writing to the Chancellor of the institution. The Chancellor may use any officer or committee which he deems appropriate in review of the appeal. Appeal of the Chancellor's ruling may be made to the President of the University; such appeals to be filed with the Chancellor and forwarded by him to the President.

BANKING ARRANGEMENTS

Before coming to Chapel Hill, students should carefully consider plans for the handling of their financial affairs. The University strongly recommends that each student arrange to have

2. To qualify for in-state tuition, a legal resident must have maintained his domicile in North Carolina for at least six months next preceding the date of first enrollment or re-enrollment in an institution of higher education in the State. Attendance at an institution of higher education as a student cannot be counted as fulfilling the six-month domicile requirement. A person twenty-one years of age or older is eligible for in-state tuition if he has maintained continuous domicile in North Carolina for the six months next preceding the date of re-enrollment, exclusive of any time spent in attendance at any institution of higher education.

his home-town bank write a letter to one of the local banking institutions as an instrument of introduction. This introductory letter should be sent prior to the students' arrival.

Students should bring with them a sufficient amount of cash or traveler's checks to take care of living expenses for approximately ten days. This will provide a sufficient amount of time for a firm financial plan to be established. If any University expenses or fees are due, an additional amount of cash or traveler's checks should be provided.

Local banks are anxious to serve the student body. However, due to the highly transient nature of the average student's life, banks are naturally conservative about cashing checks drawn on out of town banks. The University recommends that entering students open checking accounts in one or the other local banks as soon as possible subsequent to their arrival. A week to ten days should pass following the deposit of such funds before checks are drawn.

RESIDENCE HALL ROOM RENT

The room rent for the first semester a student will be enrolled in the University is due by a specified date several months in advance of his actual enrollment, if he is to be guaranteed a room in a residence hall. Any scholarship, grant, or loan which has been approved for him may *not* be used to meet this deposit, for these funds cannot be made available to the student's use before his actual enrollment in Chapel Hill for his first semester. (Nor can they be made available for the \$25 enrollment deposit required in advance.)

Once a student is enrolled, his room rent for the next semester is always due during the second half of the current semester, if he is to be guaranteed an accommodation in a residence hall. Therefore, he should plan ahead and should budget his funds to be able to take care of this. Scholarship, grant, and loan funds will *not* be made available in advance to pay room rent (*e.g.*, part of a spring semester stipend will *not* be made available in the fall to pay for spring room rent due during the last half of fall semester; etc.). Please note that before the end of his first two semesters in the University, an entering student will have had to pay three semesters' rent; and during the last semester in residence a student pays no residence hall room rent, having already paid it in advance. These facts should be taken into account in planning and budgeting.

STUDENT FINANCIAL AID

Students who have satisfactory academic records and are definitely in need of aid may qualify for financial assistance from the University. Financial aid may consist of a scholarship,

long-term loan, campus employment, or any combination of these as determined by the Faculty Committee on Scholarships, Awards, and Student Aid. The Committee will attempt to meet a student's total financial need through the award or combination of awards most appropriate to the individual applicant. Ordinarily, any student who can maintain at least a *C* average will be able to secure needed financial assistance.

All aid applicants should complete the University *Financial Aid Application* form, which will enable a student to be considered for any or all types of financial aid at the University. In addition to this form, the University requires that aid applicants submit a *Parent's Confidential Statement* to the College Scholarship Service of Princeton, New Jersey. (Neither the *Parents' Confidential Statement* nor a Morehead Award application can be used alone as an application for financial aid.) Students entering the University for the first time should submit to the Student Aid Office the necessary application form no later than February 1. Award notifications are made around May 1. No application for student aid is given final consideration until the applicant has been admitted to the University, but the applicant should meet the February 1 deadline regardless of his admission status. Students already enrolled in the University should file aid applications with the Student Aid Office no later than May 1, and award notifications will be made during mid-summer.

Any student accepting financial aid from the Committee on Scholarships, Awards, and Student Aid must sign an agreement recognizing certain conditions for holding the award. The student agrees to maintain at least a satisfactory academic average and to display exemplary conduct and citizenship as a University student.

The agreement states that the financial award will be a one-year award but that it may be renewed from year to year while the student completes an undergraduate degree. Renewal of financial aid will depend on maintenance of a satisfactory average, continued financial need, and availability of funds. Any other financial aid award which the student receives is to be reported to the Student Aid Office.

All students are reminded that, through the provision for low tuition charges, the State of North Carolina in effect gives each student at the University a considerable grant-in-aid each year.

Complete information and applications for the various forms of student financial aid may be obtained from the Student Aid Office, 300 Vance Hall, Chapel Hill, North Carolina 27514. Attention is also directed to the separate publication, *Financial Aid Information*, which is available from the above office.

SCHOLARSHIPS

High scholastic attainment and financial need are main considerations in awarding scholarships to entering students. A total score of at least 1151 on the College Entrance Examination Board, and ranking in the top fourth of the applicant's high school graduating class are required. Students already enrolled in the University, or transfers from junior colleges or branches of the Consolidated University of North Carolina, may also apply for scholarships, and will be considered on the basis of their academic average and evidenced financial need. An excellent academic record is expected of them.

The largest number of University scholarships vary in value from \$200 to \$800 per year depending on the applicant's financial situation and the availability of funds. The *Financial Aid Application* form, when submitted, is considered an application for any and all of the general scholarships usually given to undergraduates. Part of the award usually may be used for the Summer Session if the student is in an accelerated program.

STUDENT LOANS

The University has operated a Student Loan Program for many years to help needy students gain an education. Low interest loans are available to those who show definite financial need and who have satisfactory scholastic records.

In addition to the University Loan Funds given by alumni and friends, the University participates in the National Defense Education Act Student Loan Program.

Loans not exceeding \$1,000 during a twelve-month period may be made to undergraduate students enrolled for full-time work. A limit of \$5,000 is the maximum that can be loaned to an individual, and the Loan Fund Committee may set a lower limit. For most loans only three per cent interest is charged. A plan of repayment is set up by the borrower and the Student Aid Office during the student's last period of residence at the University. No interest is charged and no repayment is asked while the student is enrolled.

The University *Financial Aid Application* form, supplemented by the *Parents' Confidential Statement*, may be used in applying for all forms of financial aid, including loans and jobs.

Full details on loans may be obtained from the Student Aid Office, 300 Vance Hall, Chapel Hill, N. C. 27514. Loan repayment information is available there also.

PART-TIME STUDENT EMPLOYMENT

Part-time work in the University's dining halls, libraries, book stores, gymnasiums, laboratories, and offices is available to

several hundred students each year. Consideration is given the applicant's scholastic achievement, financial need, character and willingness to work. These jobs provide about \$900 per school year at present wage-rates.

Off-campus employment opportunities exist in Chapel Hill business firms and in local homes. Arrangement for such work is made directly between the student and the employer, but help and information is given whenever possible by the Student Aid office, 300 Vance Hall. Campus jobs usually require three hours of work daily.

Students in the first year at the University are urged to devote full time to academic work and related activities, if finances permit. Some students find it difficult to carry out part-time work with a full schedule of studies, but many others maintain good scholastic ranking while holding a job.

SUMMER WORK

Students seeking off-campus employment for the summer may turn to the University Placement Service for advice and information. This office keeps files on job openings and a roster of students needing work, and often arranges for interviews when employers visit the campus. Summer work in business training programs, in camp counseling and resort work, or in sales may enable the student to net \$300 to \$1,000 to apply toward educational expenses. The Placement Service is located in 204 Gardner Hall.

SPECIAL UNDERGRADUATE SCHOLARSHIPS

James M. Johnston Scholarships for undergraduates have been made available to any entering student having high academic achievement and financial need. Other criteria include evidence of leadership, moral character, and motivation toward purposeful life-goals. Stipends vary according to the applicant's estimated need and range from \$500 to \$2,100.00 for North Carolina students and up to \$2,900.00 for out-of-state students. Similar James M. Johnston Awards are made to students in the School of Nursing.

Whitaker Scholars are chosen from those submitting the general Student Aid Application. Whitaker Scholarship stipends vary between \$400 and \$1,000, depending upon the recipient's need. The primary criterion for selection is superior academic merit. From eight to twelve awards are made each year. One-year award. Renewable.

Alston-Pleasant Scholarship: One awarded annually to a male or female resident of Franklin, Halifax, or Warren counties,

North Carolina, by a special committee, for satisfactory scholastic record. One-year award. Renewable. Value: \$1,100 per year.

John O. and Elizabeth A. C. Blanchard Scholarships: Episcopal divinity students, sons or daughters of Episcopal ministers, or Episcopal descendents of Colonial ancestors are eligible. University Scholarship Committee makes one-year awards. Renewable. Value: \$175 to \$1,250 per year, based on recipient's financial need and merit.

Herbert Worth Jackson Memorial Scholarship: To entering North Carolina freshman nominated by high school or preparatory school. Special committee chooses annual recipient for one-year award. Renewable. Value: \$1,500 per year.

MOREHEAD AWARDS AND BROOKS SCHOLARSHIPS

The John Motley Morehead Awards and the Aubrey Lee Brooks Scholarships, awarded each year to a sizeable number of entering students, are under the jurisdiction of foundations, rather than the University.

The John Motley Morehead Awards. Awards for merit, without consideration of need, for undergraduate study leading to an academic degree may be given only to graduates of high schools and preparatory schools on the list of eligible institutions. The Awards are valued at \$2,100 per annum plus the tuition differential for out-of-state students, subject to renewal upon the maintenance, by a scholar, of standards of work and conduct which in the opinion of the Trustees of the Foundation, justify the Awards. Each eligible school selects its nominees through its own scholarship committee.

The Aubrey Lee Brooks Scholarships. An endowment fund of approximately \$1,000,000 established by Mr. Aubrey Lee Brooks, of Greensboro, North Carolina, Class of 1895, to promote the education of deserving youth by providing scholarships at The University of North Carolina at Chapel Hill, North Carolina State University at Raleigh, and The University of North Carolina at Greensboro, to high school graduates selected by the Trustees of the Aubrey Lee Brooks Foundation. Applicants for these scholarships shall be residents of Surry, Stokes, Rockingham, Caswell, Person, Granville, Alamance, Orange, Durham, Guilford, and Forsyth counties. Applications may be secured from high school principals in the counties named. The scholarships are currently valued at \$700 for each year.

ACADEMIC DEPARTMENTS

DESCRIPTION OF COURSES

In this section are listed all courses offered in the regular sessions of the University except those in the professional schools of Law, Medicine, Dentistry, Nursing, Pharmacy, Library Science, and Social Work. Four courses in these schools see the special bulletins.

The requirements for majors are shown in connection with the materials concerning the various departments.

The work of the University is arranged and offered on the semester system, the regular session being divided into two approximately equal parts called the fall and spring semesters. The summer session is divided into two terms.

Work is valued and credited toward degrees by semester hours, one such hour being allowed for each class meeting a week for a semester, laboratory or field work counting one hour for each two hours of work in laboratory or field, and work in studio (art) counting one hour for each three hours. In the following announcements of courses the numbers in parentheses following the descriptive titles show the credits allowed in semester hours. Except in the case of courses meeting regularly three times a week, the number of actual hours a course meets will be found in the description of the course. The meetings of a few advanced courses, however, are arranged by the instructor in charge.

DEPARTMENT OF AEROSPACE STUDIES

PAUL E. SMITH, *Lieutenant Colonel, USAF*

General Information

The Air Force ROTC unit constitutes a regular department of instruction in the College of Arts and Sciences and is known as the Department of Aerospace Studies. Both the traditional four-year AFROTC program and the two-year program are offered on an elective basis to all university students. Both programs are designed to provide selected students with the instruction necessary to become commissioned officers in the USAF.

Selective Service Deferment

All cadets formally enrolled in the Professional Officers' Course (POC) are automatically deferred from induction into the Armed Forces for the duration of enrollment.

Enrollment Requirements

To enroll in the General Military Course (GMC) the student must:

1. Be a United States citizen.
2. Not be a conscientious objector.
3. Be in good health.
4. Have approval of Professor of Aerospace Studies.

To enroll into the POC the student must enter at an age which will enable him to complete all requirements for a commission prior to his 30th birthday ($26\frac{1}{2}$ for those entering flying training). Enrollees must agree to complete their degree requirements, to accept, if tendered, an appointment as a commissioned officer in the USAF, and to serve on active duty for a period of not less than four years.

In addition he must:

1. Pass a physical examination.
2. Successfully accomplish the Air Force Officers' Qualification Test.
3. Be selected by the Professor of Aerospace Studies.
4. Sign a category agreement and statement of understanding acknowledging the requirement for enlistment in the Air Force Reserve; have parental consent if student is under 21 years of age.
5. Be in good academic standing with the University.
6. Have two years remaining at University.

Four-Year Program

This program consists of two years of GMC and two years of POC. Selection for POC is accomplished during AS 22 for cadets who have demonstrated good academic and leadership qualities. POC includes a four week Field Training session at an Air Force Base during the summer between the junior and senior academic years.

Two-Year Program

At the beginning of the Fall semester, eligible sophomores can apply for Junior year entry into the POC. In addition to the enrollment requirements listed above, each applicant must complete a six-week Field Training session at an Air Force Base

during the summer prior to entering the POC (this eliminates the four week Field Training session mentioned above). Graduate students are eligible for consideration.

Emoluments

ROTC textbooks are provided without cost. POC students receive subsistence in the amount of \$600.00 per year. Each student also receives approximately \$150.00 plus travel expenses during the Field Training session. POC cadets are entitled to free air travel aboard USAF aircraft on a space available basis. Cadets qualifying for and desiring pilot training will receive 36½ hours of flight instruction during their final year of AFROTC which can lead to a private pilot's license.

AFROTC College Scholarship Program

Available during freshman through senior years to four-year program cadets only. Covers full cost of tuition, fees and book allowance. In addition, GMC Cadets granted an AFROTC Scholarship receive the same subsistence payments (\$600.00 per year) as do all POC cadets. There is no repayment or additional active military obligation attached to these scholarships.

Application for an AFROTC Scholarship for the freshman year must be made directly to AFROTC Headquarters at Maxwell AFB, Alabama during the early fall of the senior year in high school (See high school counselor for application information).

Academic Credits

Cadets who successfully complete the four-year program receive 16 semester hours credit; for the two-year program they receive 12 semester hours. Modern civilization 1 and 2 are substitutes for classwork in Aerospace Studies 11 of Freshman year and Aerospace Studies 22 of the Sophomore year. Credits for these substitute courses are listed elsewhere in this bulletin. Course credits are given in place of 1 general college course and three upper college courses as follows:

AS 11 (0 hrs)—no credit

AS 12 (2 hrs)—See AS 21 below

AS 21 (2 hrs)—one General College elective course credit given for AS 12 and AS 21 combined.

AS 22 (0 hrs)—no credit

AS 51 (3 hrs)—one allied POC elective

AS 52 (3 hrs)—one non-divisional elective

AS 61 (3 hrs)—one allied or non-divisional elective

AS 62 (3 hrs)—no course credit

Commissions in the United States Air Force

Cadets who successfully complete the requirements for a degree and the Air Force ROTC course of instruction are commissioned Second Lieutenants in the United States Air Force Reserve and called to active duty. Distinguished military graduates of the ROTC program may be offered a Regular commission in the United States Air Force.

Graduate Study for Newly Commissioned Officers

Academic deferments may be granted to those who wish to continue studies at the graduate level. These deferments are granted on a year-to-year basis up to a maximum of four years.

Outstanding cadets are encouraged to apply for graduate study under the Air Force Institute of Technology. This training can be initiated immediately after being called to active duty. Study is conducted at an accredited civilian institution at no cost to the officer. Officers receive full pay and allowances while attending school under this program.

Curriculum

The General Military Course

- 11 WORLD MILITARY SYSTEMS I (2). A survey of the nature and
- 12 causes of wars and the functions and employment of the U. S. Military forces. *One laboratory hour per week, fall and spring; two lecture hours per week, spring.* Staff.
- 21 WORLD MILITARY SYSTEMS II (2). Continuation of employment of
- 22 the U.S. Military Forces, and a survey of the current prospects and trends in the search for world peace. *One laboratory hour per week, fall and spring; two lecture hours per week, fall.* Staff.

The Professional Officer Course

- 51 GROWTH AND DEVELOPMENT OF AEROSPACE POWER (3 each).
- 52 A survey of the development of airpower in the U.S.; Air Force concepts, doctrine, and employment; astronautics and space operations; and the future development of aerospace power. *Three lecture hours and one laboratory hour per week, fall and spring.* Staff.
- 61 AIR FORCE LEADERSHIP AND MANAGEMENT (3 each). A study of
- 62 Air Force leadership, including its theoretical professional and legal aspects; a study of military management functions, principles and techniques. *Three lecture hours and one laboratory hour per week, fall and spring.* Staff.

CURRICULUM IN AFRICAN STUDIES CURRICULUM IN AFRO-AMERICAN STUDIES

(See "The College of Arts and Sciences" section, page 43-44)

CURRICULUM IN AMERICAN STUDIES

C. T. LUDINGTON, JR., *Chairman*. Advisory Committee: Professors G. B. CLEVELAND, J. GULICK, G. C. HEMMENS, C. C. HOLLIS, R. M. MILLER, S. S. HILL, F. W. RYAN; Associate Professor P. G. FILENE

The Curriculum in American Studies, an undergraduate program leading to the B.A. in American Studies, draws on courses of many departments which contribute to the study of the civilization of the United States. The course requirements lead the student to examine American society, past and present, from many points of view; the works of historians, artists, anthropologists, sociologists, political scientists, religious leaders, urban planners, etc., are studied with the aim of discovering interrelations among diverse aspects of our culture and its changing patterns of ideas and values.

Three courses in American Studies (see below) are required of all majors, and are designed to bring together the materials and methods of the several disciplines. In addition, majors take: (1) six core courses to consist of the following: three from among Anthropology 121; History 145, 146, 149; Political Science 162; Sociology 168; and three from among Afro-American Studies 40; Art 171; English 81, 82; Music 135; Religion 135 (2) six to eight courses distributed among literature, the arts, philosophy, religion, the social sciences, and history (3) four to six electives from the natural sciences or courses in other divisions with a major emphasis on a foreign civilization. For a more complete listing of the courses under (2) see "The College of Arts and Sciences: Requirements for Degree" in this catalogue.

Prospective majors should see the chairman of the Curriculum.

- 40 INTRODUCTION TO AMERICAN STUDIES (3). Permission of the instructor required. Exposition of interdisciplinary methods and of the concept of American Studies; discussion of the ideas of a "national character" and a "culture"; exploration of a topic. Required of all American Studies majors; normally to be taken in the sophomore year, but may be taken in the junior year. *Fall and spring*. Filene (Department of History), Ludington (Department of English).
- 60 AMERICAN STUDIES JUNIOR SEMINAR (3). Permission of instructor required. Seminar to focus on a specific topic which explores the nature of the American character. Required of all American Studies majors; to be taken in the junior year. *Fall and spring*. Zug (Department of English); Tyson (Department of Religion); Mathews (American Studies Curriculum); Smyth (Department of Philosophy).
- 80 AMERICAN STUDIES SENIOR SEMINAR (3). Permission of instruct-

or required. An over-view of American civilization in the terms of the various departments which cooperate in the American Studies Curriculum, with special attention to selected topics. Required of all American Studies majors; to be taken in the senior year. *Fall and spring*. Rust (Department of English); Lipsitz (Department of Political Science)

- 90 HONORS IN AMERICAN STUDIES (3). Directed independent research leading to the preparation of an honors thesis and an oral examination on the thesis. Required of candidates for graduation with honors in American Studies. *Fall and spring*. Staff.

DEPARTMENT OF ANTHROPOLOGY

JOHN HONIGMANN, *Chairman*

The Department's course offerings are intended to open up systematic perspectives on the nature of mankind. This is accomplished by means of detailed studies of: (1) the physical and cultural origins and developments of human beings in general; (2) the differing patterns of culture in all parts of the present-day world; and (3) the interrelationships between human beings' physical and cultural natures and their various reactions to the crises of change in the 20th century.

Although the Department offers major programs leading to the A.B., A.M., and Ph.D. degrees, its courses are also open to non-majors, and for the most part they do not have any prerequisites. Those courses which do have prerequisites are specifically identified as such.

UNDERGRADUATE MAJOR: Anthropology 41, preferably taken in the sophomore year, and eight other anthropology courses, preferably not including Anthropology 122; together with 5-7 courses in allied (i.e., Social Science Division) fields; and 5-7 courses in non-allied fields.

The undergraduate major can serve as the core of a general liberal arts education. It can also serve as an introduction to graduate work in anthropology and as an orientation for a variety of occupations in which knowledge of the behavioral sciences is either required or is highly desirable.

HONORS IN ANTHROPOLOGY: Students with a grade average of B or better are encouraged to apply for candidacy for the A.B. with honors. The honors program consists of eight anthropology courses (besides Anthropology 41) which include Anthropology 95 and 96. These two courses provide the student with opportunities for independent study, research and writing under faculty guidance.

Detailed information on the honors program can be obtained from the Chairman of the Department's Undergraduate Committee.

- 9 FRESHMAN SEMINAR (3). The seminar will provide an initial "small group learning experience" in significant current topics in anthropology. *Fall and spring*. Staff.
- 26 THE PEOPLES OF BLACK AFRICA (3). Introductory ethnographic survey emphasizing the cultural diversity of indigenous African societies. Basic concepts used in analyzing African economics, political systems, marriage patterns and family organization, religious beliefs, etc. *Fall*. Daniels.
- 41 GENERAL ANTHROPOLOGY (3). An introduction to anthropology, the science of man the culture-bearing animal. Topics considered: physical evolution of mankind and biological variation within and between modern human populations, prehistoric and historic developments of culture, cultural dynamics viewed analytically and comparatively. *Fall and spring*. Staff.
- 42 FOLK CULTURES IN THE MODERN WORLD (3). The customs and institutions of peoples in the Mediterranean area, Asia, Africa, and Latin America as they encounter technological and social development in the modern world. (Not offered in 1970-1971). *Fall*. Hafer.
- 55 INTRODUCTION TO THE CIVILIZATION OF INDIA AND PAKISTAN (3). The course reviews urban and rural ways of life and the transformation of culture following British rule. Islam, Buddhism, caste, family life, and values are examined as well as several ways of life and problems besetting the countries as they pursue national goals. *Fall*. Marshall.
- 95 HONORS SEMINAR (3). Open only to senior honors candidates. Advanced survey of anthropology and critical analysis of leading theoretical ideas in the field. *Fall and spring*. Staff.
- 96 HONORS RESEARCH (3). Open only to senior honors candidates. Special research in a selected field under the direction of a member of the Department. *Fall and spring*. Staff.
- 99 SPECIAL TOPICS FOR MAJORS (3). Prerequisite, permission of the Chairman of the Department. Reading or research under the guidance of a faculty member whose interests coincide with those of the individual student. *Fall and spring*. Staff.
- 100 OLD WORLD PREHISTORY (3). A course designed to provide anthropology majors and other students of comparable behavioral science sophistication with a basic background in the development of man and culture in the Old World. *Fall*. Coe.
- 101 PREHISTORY OF THE FAR EAST (3). A course designed to acquaint anthropology majors and upperclassmen from other fields with a general view of the prehistory of Siberia, China, Japan, and southeast Asia and Oceania. *Spring*. Brockington.
- 110 PRINCIPLES OF ARCHAEOLOGY (3). An examination of archaeology as a set of techniques and a sub-field of anthropology, including history of archaeology, survey and excavation techniques, laboratories treatment of remains, archaeological analysis, historical and processual inference. *Fall*. Brockington.
- 112 PHYSICAL ANTHROPOLOGY (Anatomy 112) (3). An introductory survey of physical anthropology, including the place of man among the

primates, human evolution, and racial differences. Consideration is also given to osteology and the interrelationship of cultural and biological factors. *Fall*. Holcomb.

- 115 GENETICS AND HUMAN EVOLUTION (Genetics 115) (Anatomy 115) (3). Prerequisite, Introductory Biology or permission of the instructor. Fundamental principles of genetics; population genetics; genetic equilibrium; race and species formation; the factors of evolution; and the relation of these principles to man and the primates. Blood groups and other traits as illustrations. *Spring*. Pollitzer.
- 116 PRIMATE SOCIAL BEHAVIOR (3). Social behavior and ecology of presimians, monkeys and apes and the evolution of human behavior. (Not offered in 1970-1971.) *Spring*.
- 120 CULTURE CHANGE AND UNDERDEVELOPED AREAS (3). Theories and case studies of cultural change will be discussed. Problems of culture change in less developed areas of Asia, Africa and Latin America will receive particular attention. *Spring*. Peacock.
- 121 CULTURE AND PERSONALITY (Sociology 121) (3). Broad survey of methods and problems connected with studying personality features characteristic of tribes and modern nations, child training and personality, and the relationship of culture to mental illness. *Spring*. Daniels.
- 122 CULTURAL ANTHROPOLOGY (Folklore 122) (3). Ordinarily may not be taken for credit by graduate majors in anthropology. Undergraduate majors in anthropology must have permission of instructor. A systematic survey of anthropological approaches to the study of human behavior, with emphasis on the position of anthropology among the social sciences. *Fall and spring*. McEvoy, Witt.
- 123 ANTHROPOLOGY OF RELIGION (Folklore 123) (3). The course examines over a hundred years of speculation about the origin of religion and its place in culture, including the thought of Marx, Durheim, and Freud. It gives attention to ritual, magic, myth, and revitalization movements as they operate in modern society and others. (Not offered in 1970-1971.) *Fall*. Honigmann.
- 125 THE ANTHROPOLOGICAL VIEW (3). Review of selected cultural anthropologists and their predecessors to define recurrent as well as innovative perspectives with which they have viewed man, culture, and society. *Fall*. Honigmann.
- 126 CULTURES OF SUB-SAHARAN AFRICA (Folklore 126) (3). Prerequisite, Anthropology 26 or 41 or 122 or permission of the instructor. An advanced ethnographic survey of the cultures of sub-Saharan Africa, with some emphasis on the historical development of major African sociocultural systems; the application of anthropological theories to Africa and the uses of African data in the development of such theories. *Spring*. McEvoy.
- 127 ABORIGINAL CULTURES OF MEXICO AND CENTRAL AMERICA (Folklore 127) (3). The development of Indian cultures of Middle America, culminating in such civilizations as the Aztec and Maya; archaeological and ethno-historical data synthesized. *Spring*. Brockington.
- 129 SOUTHEAST ASIA: PEOPLES AND CULTURES (3). A survey of

- cultures in Indonesia, the Philippines, and mainland Southeast Asia. Traditional influences and the impact of major contemporary changes on societies of the area will be discussed. *Fall*. Goethals.
- 130 INDIANS OF NORTH AMERICA (Folklore 130) (3). A descriptive study of the culture areas of North America at the time of European contact, with emphasis on the Southeast. *Spring*. Coe.
- 131 ARCHAEOLOGY OF SOUTH AMERICA (3). The development of native South American cultures according to archaeological and early ethno-historical records. (Not offered in 1970-1971). *Fall*. Brockington.
- 132 LATIN AMERICAN CULTURES (Folklore 132) (3). An ethnographic survey of the peoples of Latin America with emphasis upon the analysis of tribal and community organization. *Fall*. Hafer.
- 133 THE PEOPLE OF THE CARIBBEAN (3). A survey of Caribbean cultural development. Particular attention will be given to human ecology, population segments, metropolitan influences, and culture change. *Fall*. Crane.
- 135 THE NATURE OF CULTURE (Folklore 135) (3). Symbolizing as the primal mechanism of culture, exemplified in the arts, religions, languages, and world-views of various cultures. Emphasis is on the relation of symbolizing to social process, as analyzed by theorists such as Durkheim, Weber and Lévi-Strauss. *Fall*. Peacock.
- 136 COMPARATIVE SOCIAL ORGANIZATION (Sociology 136) (3). Prerequisite, permission of the instructor. An analysis of recurrent types of social groups: kinship systems, localized communities, and supra-community structures. Types are viewed in terms of a world-wide sample of societies of various scales of complexity. *Spring*. Crane.
- 137 THE MIDDLE EAST: PEOPLES AND CULTURES (Folklore 137) (3). Emphasis on current acculturation problems as related to the various ecological, social, linguistic, and religious systems of the area whose cultural history is also considered. (Not offered in 1970-1971.) *Fall*. Gulick.
- 138 PEOPLES OF THE FAR EAST (Folklore 138) (3). Description of the societies of east and north-east Asia with emphasis on the relationship of their traditional cultural forms and social organization to change. (Not offered in 1970-1971.) *Fall*.
- 147 CULTURAL CONSTRAINTS IN EDUCATIONAL DEVELOPMENT (Education 147) (3). An anthropological analysis of social structure, land tenure, poverty, health and illness, population pressures and education, linking the concerns of the Carolina Population Center, the School of Education, and the Department of Anthropology. *Spring*. Burleson.
- 150 ARCHAEOLOGY OF NORTH AMERICA (3). A study of the growth of American Indian cultures north of the Rio Grande as interpreted by archaeological research. Special emphasis on the prehistory of North Carolina and the eastern woodlands. *Fall*. Coe.
- 167 URBAN ANTHROPOLOGY (3). Prerequisite, permission of the instructor. Changing and stable patterns in the social organization, ecology, and value systems of cities in the technologically emergent na-

tions of the world. (Not offered in 1970-1971.) *Spring*. Gulick.

- 170 MEDICINE AND ANTHROPOLOGY (3). This course is especially relevant for premedical students. Treatment of disease in various exotic and western cultures is considered, as well as problems related to innovation. Surveys of mental health are used to point up relations between culture and health. *Spring*. Leighton.
- 172 APPLIED ANTHROPOLOGY: FAMILY PLANNING (3). Prerequisite, Anthropology 41 or permission of the instructor. Cultural factors in the design and implementation of family planning programs—both in the United States and abroad. (Not offered in 1970-1971.) *Fall*. Polgar.
- 175 LEARNING ANOTHER CULTURE (3). Prerequisite, anthropology major or minor or graduate standing. Practice in collecting and interpreting field data for a research report; history and nature of ethnography and the role of concepts and theory; controversies over ethnographic interpretations; ethical considerations. *Spring*. Honigmann.
- 180 INTRODUCTION TO DESCRIPTIVE LINGUISTICS: PHONETICS AND PHONOLOGY (Linguistics 120) (3). (See Linguistics 120 for description.) *Fall*. Staff.
- 181 INTRODUCTION TO COMPARATIVE AND HISTORICAL LINGUISTICS (Linguistics 101) (3). See Linguistics 101 for description.) *Spring*. Tsiapera.
- 183 PHONOLOGICAL ANALYSIS (Linguistics 123) (3). (See Linguistics 123 for description.) *Spring*. Staff.
- 184 LANGUAGE AND CULTURE (Linguistics 184) (3). The relationship of language to other aspects of culture for the analysis and description of cognitive and affective features of the semantic component of languages. *Spring*. Hafer.
- 190 INTRODUCTION TO DESCRIPTIVE LINGUISTICS GRAMMAR (Linguistics 130) (3). (See Linguistics 130 for description.) *Fall*. Staff.
- 193 GRAMMATICAL ANALYSIS (Linguistics 133) (3). (See Linguistics 133 for description.) *Spring*. Staff.

ARABIC

(See Romance Languages)

ARCHAEOLOGY

(See Anthropology and Classics)

DEPARTMENT OF ART

JOSEPH CURTIS SLOANE,¹ *Chairman*

Courses in art are for art majors and for general students in the University. Programs for art majors are planned to give a basic training in art history or creative art within the liberal arts program and also to lay the foundations for graduate work.

1. Alumni Distinguished Professor of Art

Courses for general students provide an opportunity to study art for its value in the broad field of humanistic studies. The William Hayes Ackland Memorial Art Center provides exhibition galleries, departmental library, offices, study areas, and classrooms. Other exhibitions and collections are displayed in the Morehead Building.

The Department of Art offers three major programs, one in Art History and two in Creative Art, as well as elective courses open to students from all departments in the University. A degree in Art Education is offered in cooperation with the School of Education.

Transfer students should note that only two courses in studio and two courses in art history will be accepted for transfer credit. Course credit beyond the four can be given by petition to the Department (examination or portfolio examination).

Program in Art History

Art 44 and 46 are prerequisites to a major in art history and should be taken as early as possible from among the General College electives. Transfer students must present equivalent credit or make up the deficiency.

In addition, majors in art history will take at least four courses from the sequence Art 30, 35, 36, 37, 38, and two of these must be completed prior to the junior year.

Students may elect to take one or both of the additional courses as electives in the General College. If they do, it will release one or two of their major courses in the College of Arts and Sciences for more advanced work. The number of courses required for the major (i.e., four in the General College, and six to eight in the College of Arts and Sciences) will remain the same, but the taking of these courses as electives will have the effect of granting more advanced standing.

Students may take the courses preparatory to an art major from among the options available to them under Divisional Electives or College Electives, but not more than six courses in all may be taken in art by prospective Art History majors. (See regulations for General College Curriculum.)

The major program requires six to eight courses beyond the four art courses required in the General College (i.e., Art 44, 46, and two art history courses). Those who take a six- or seven-course major may offer one or two studio courses as part of the major.

Program in Studio Leading to A.B. Degree

Art 44, 46, 30, and one course from the sequence Art 35, 36, 37, 38 are prerequisites to this major and should be taken as

early as possible from among the General College electives. Transfer students must present equivalent credit or make up the deficiency.

A major in creative art leading to the A.B. degree requires nine courses beyond the General College level including two courses in art history, one of which must be either Art 153 or 154. Students interested in art education should pay particular attention to the relevant paragraphs following, and consult with the School of Education.

Program in Studio Leading to the B.F.A. Degree

This course of study is designed as a pre-professional preparation for painters, printmakers, and sculptors. It occupies approximately one-half of all courses taken during the four years required for the degree. Unusual capacity for work in creative art is expected, and each student's performance is reviewed at the end of each year. If, at an annual review, any student's progress is deemed insufficient, a change of major will be recommended.

Courses taken in the General College under this program are divided into a Foreign Language option and a Math option:

Foreign Language Option—English 1 and 2; Foreign Language 3, 4, 21; two natural laboratory sciences (one biological, one physical); five electives in the Humanities-Fine Arts and Social Sciences (2 in one area and 3 in the other); and two courses in Physical Education. (NOTE: No elective courses may be taken in the Art Department).

Mathematics Option—English 1 and 2; 2 approved courses in Mathematics or Computer Science or Philosophy; two natural laboratory sciences (one biological, one physical); three electives in the Humanities-Fine Arts; three electives in the Social Sciences; and two courses in Physical Education. (NOTE: No elective courses may be taken in the Art Department).

Departmental requirements for both options in the General College: (Studio) Art 44, 46, 49; 66a or 68a; two courses from 63ab or 64ab or 65ab; (Art History) Art 38 and one course from the sequence 30, 35, 36, 37, 39.

Courses taken in the College of Arts and Sciences under this program will include four courses in the Divisions of Fine Arts and Humanities; four courses in the Divisions of Social Science and Physical Science; Art 66a or 66b or 68a or 68b; four courses from 82ab, 105ab or 86ab, 112ab, 88ab, 120ab which with the General College requirement will give a total of six courses in (painting, sculpture or printmaking); Art History 153

or 154; and six departmental electives with a recommendation that one elective be in the field of Art History.

The Department reserves the right to make minor adjustments in regard to major and allied courses according to the needs of individual students.

Program in Art Education

A student who wishes to prepare himself for teaching art at the secondary school level should consult with the Art Education Adviser in the Art Department as early as possible. He may do so in the following ways:

1. The student may be admitted to the School of Education and choose art as either his first or second teaching field. He will be required to take education courses Ed. 41, 71, 72b, 77, 80, and 99 and meet the graduation requirements detailed under School of Education in this bulletin. He will be required to take a minimum of thirty-nine semester hours in art from: Art 30, 44, 46, 49, 61, 63, 82, 84, 153, one other Art History course, and three Studio Art electives, one of which will be at the intermediate level. NOTE: The education courses Ed. 72b, 77, 80, and 99, which include practice teaching, are taken by art students in the spring semester. This factor must be considered in planning the student's program.
2. The student may follow a program leading to the B.A. degree or the B.F.A. degree, and then enter (a) the School of Education as a special student to complete professional requirements for certification, or (b) the Fifth-Year Program in Teacher Education. This latter program is fifteen months in duration and runs from June through August of the following year. Successful students are awarded the Master of Teaching degree and are eligible for a teacher's certificate in practically every state in the nation.

Certification requirements for teaching art in North Carolina are covered by each of these programs. Students planning to teach art in public schools outside of North Carolina should consult their advisers in the School of Education with regard to specific requirements.

ART HISTORY

The first six courses listed below are intended as introductions to both the systematic and historical study of the history of art. Students may take any of these introductory courses as

electives either in the General College or the College of Arts and Sciences.

Students wishing to take courses numbered 100 must have had one of the 30-level courses, and where prerequisites are indicated in connection with a specific course, this requirement must be met, otherwise the permission of the instructor is required. The content of the 100-level courses will vary slightly from year to year in accordance with the needs of the students and the special competence of the instructors.

- 30 INTRODUCTION TO THE STUDY OF ART HISTORY (3). Art 30 introduces the beginning student to the study of the History of Art by considering art, the artist, and the observer in the context of Western Civilization. *Fall and spring*. Staff.
- 35 ANCIENT ART (3). A chronological study of ancient art with emphasis on Greek and Roman architecture, sculpture and painting, including a brief survey of the arts in Egypt, Mesopotamia and the Aegean. *Fall*. Sams.
- 36 MEDIEVAL ART (3). Major developments in art and architecture from early Christian times through the Byzantine period in the Greek East and the Middle Ages in the Latin West. *Spring*. Folda, Schnorrenberg.
- 37 RENAISSANCE AND BAROQUE ART (3). A survey of painting, sculpture, and architecture from the 14th through the 17th centuries considering major problems of the Renaissance in Italy and the North. *Fall*. Huemer.
- 38 SURVEY OF MODERN ART (3). A survey of painting, sculpture, and architecture in Western Europe and the United States over the last 200 years. *Fall and spring*. Allcott.
- 39 INTRODUCTION TO RELIGION AND ART (Religion 39) (3). A typological study of the major artistic manifestations of religion focused on a selected list of major monuments of the History of Art. *Fall*. Dixon.
- 40 ANCIENT CITIES (Classics 40) (3). (See Classics 40 for description.) *Spring*. Richardson.
- 50 CATHEDRAL AND CASTLE (3). A study of the design, construction, function, and importance in their day and ours of selected major buildings, chiefly medieval, and the sculpture and painting adorning them. *Spring*. Schnorrenberg.
- 90 HONORS IN ART (3). Staff.
- 91 HONORS IN ART (3). Staff.
- 92 GREEK ARCHAEOLOGY (Classics 92) (3). (See Classics 92 for description.) *Fall*. Richardson.
- 99 SENIOR SEMINAR IN ART HISTORY (3). The topic will vary with the instructor but will allow maximum opportunity for class participation, and will be announced by the time of pre-registration in the semester preceding. *Fall and spring*. Staff.
- 151 EARLY ITALIAN PAINTING (3). The art of the late 13th, 14th, and 15th centuries. *Fall*. Kuspit.

- 152 LATER ITALIAN PAINTING (3). Sixteenth century painting in central (Rome, Florence) and Northern (Venice) Italy. *Spring*. Huemer, Kuspit.
- 153 NINETEENTH-CENTURY PAINTING (3). Developments in European painting from the French Revolution to Cézanne. *Fall*. Sloane.
- 154 TWENTIETH-CENTURY PAINTING (3). Developments in modern art, mostly in Europe. *Spring*. Allcott.
- 155 RELIGIOUS ART IN THE WEST (3) (Religion 155). The origins of religious art in faith and formal liturgy, and the impact of artistic development on the life and thought of religious institutions. *Spring*. Dixon.
- 156 THE ART OF FLORENCE (3). A study of the art of Florence from the beginning to the 16th century with primary emphasis on its religious dimension. (Not offered 1970-1971.) *Fall or spring*. Dixon.
- 159 HISTORY AND THEORY OF ART CRITICISM (3). Various systems of interpretation and judgment of works of the visual arts from classical antiquity to the present day. *Spring*. Dixon.
- 171 AMERICAN ART (3). (Not offered 1970-1971.) From Colonial times to the present. *Fall*. Allcott.
- 172 MODERN ARCHITECTURE (3). Developments from 1800 to the present. *Spring*. Allcott.
- 173 NORTHERN EUROPEAN ART c. 1350-c. 1550 (3). From early Flemish art through Brueghel. *Fall and spring*. Schnorrenberg, Kuspit.
- 174 NORTHERN BAROQUE ART (3). The Baroque movement outside of Italy. *Spring*. Huemer.
- 175 ITALIAN BAROQUE ART (3). From its origins in the late 16th century through the 17th century, mainly in Rome. *Fall*. Huemer.
- 176 TOPICS IN THE HISTORY OF MEDIEVAL ART (3). *Spring*. Schnorrenberg, Folda.
- 177 MEDIEVAL ART (3). The art of Western Europe in the Middle Ages from the barbarian invasions through the Gothic period. *Fall*. Folda.
- 178 STUDIES IN THE HISTORY OF GRAPHIC ART (3). (Not offered 1970-1971.)
- 180 STUDIES IN THE HISTORY OF SCULPTURE (3). (Not offered 1970-1971.)
- 181 MEDIEVAL ARCHITECTURE (3). Emphasis on the great structures of the Romanesque and Gothic periods. *Fall*. Schnorrenberg.
- 182 RENAISSANCE AND BAROQUE ARCHITECTURE (3). Developments from the 15th through the 17th century. (Not offered 1970-1971.)
- 190 GREEK ARCHITECTURE (Classics 190) (3). (See Classics 190 for description.) *Fall*. Koepfel.
- 191 ARCHITECTURE OF ETRURIA AND ROME (Classics 191) (3). (See Classics 191 for description). *Spring*. Richardson.

- 192 GREEK SCULPTURE (Classics 192) (3). A survey of the developments in the archaic, classical, and hellenistic periods through a study of major types and principal artists. (Not offered 1970-1971.)
- 193 GREEK PAINTING (Classics 193) (3). A survey of the development from geometric to Hellenistic painting through a study of Greek vases, mosaics, and mural paintings. *Spring*. Sams.
- 194 GREEK TOPOGRAPHY (Classics 194) (3). (See Classics 194 for description.) *Spring*. Koepfel.
- 195 ETRUSCAN CIVILIZATION (Classics 195) (3). (See Classics 195 for description.) (Not offered 1970-1971.)
- 196 ROMAN SCULPTURE (Classics 196) (3). (See Classics 196 for description.) (Not offered 1970-1971.)
- 197 ROMAN PAINTING (Classics 197) (3). (See Classics 197 for description.) *Fall*. Richardson.
- 198 AEGEAN CIVILIZATION AND NEAR EASTERN BACKGROUNDS (Classics 198) (3). The art of Minoan Crete and Mycenaean Greece from about 3000-1200 B.C. *Fall*. Sams.
- 199 BYZANTINE ART (3). A survey of major developments in early Christian and Byzantine painting and sculpture. *Fall*. Folda. (Not offered 1970-1971.)

CREATIVE ART

All courses listed in this section are open as electives to juniors and seniors, and may be offered for credit in the College of Arts and Sciences. *Art 44 and 46 or their equivalent are pre-requisites to more advanced work in painting, sculpture, and printmaking.*

The Department reserves the privilege of keeping examples of the work of any student.

- 44 BASIC DRAWING AND COMPOSITION (3). Designed to develop comprehension and manual dexterity in two-dimensional media. Departmental permission required. *Six studio hours a week, fall and spring*. Staff.
- 45 ARTS AND CRAFTS (3). Designed to introduce the theory of creative development for the elementary child through the use of varied materials. School of Education permission required. *Six studio hours a week, fall and spring*. Staff.
- 46 BASIC SCULPTURE (3). Designed to develop comprehension and manual dexterity in three-dimensional media. Departmental permission required. *Six studio hours a week, fall and spring*. Laboratory fee, \$16.00. Staff.
- 49 DESIGN (3). A study of principles common to all visual work emphasizing color, line, space, volume, texture, and their psychological and physical effect on the viewer. Departmental permission required. *Nine studio hours a week, fall and spring*. Ness, Kinnaird, Zaborowski.

- 61 ADVERTISING ART (3). Basic fundamentals in the development of skills in advertising, layout, lettering, and production. No previous art training is required. Departmental permission required. *Nine studio hours a week, fall and spring.* Ness.
- 63a BEGINNING PAINTING (3). Introduction to the techniques of two-dimensional thought and process through the application of various painting media. Departmental permission required. Prerequisite, Art 44. *Nine studio hours a week, fall and spring.* Kachergis, Kinnaird, Ness, Zaborowski.
- 63b BEGINNING PAINTING (3). Continuation of 63a. Departmental permission required. Prerequisite, Art 63a. *Nine studio hours a week, fall and spring.* Kachergis, Kinnaird, Zaborowski.
- 64a BEGINNING SCULPTURE (3). Introduction to the techniques of three-dimensional thought and process through the application of the various sculpture media. Departmental permission required. Prerequisite, Art 46. *Nine studio hours a week, fall and spring.* Howard, Kangas.
- 64b BEGINNING SCULPTURE (3). Continuation of 64a. Departmental permission required. Prerequisite, Art 64a. *Nine studio hours a week, fall and spring.* Howard, Kangas.
- 65a BEGINNING PRINTMAKING (3). Introduction to the thought and process of woodcut and serigraphy and their application and production. Departmental permission required. Prerequisite, Art. 44. *Nine studio hours a week, fall and spring.* Saltzman.
- 65b BEGINNING PRINTMAKING (3). Continuation of 65a. Departmental permission required. Prerequisite, Art 65a. *Nine studio hours a week, fall and spring.* Saltzman.
- 66a LIFE DRAWING (3). Development of proficiency in figure drawing through the use of various drawing and painting materials (study from the model). Departmental permission required. Prerequisite, Art 44. *Six studio hours a week, fall and spring.* Laboratory fee, \$12.00. Kachergis, Zaborowski.
- 66b LIFE DRAWING (3). Continuation of 66a. Departmental permission required. Prerequisite, Art 66a. *Six studio hours a week, fall and spring.* Laboratory fee, \$12.00. Kachergis, Zaborowski.
- 68a LIFE MODELING (3). Development of proficiency in life modeling through the use of various sculpture materials (study from the model). Departmental permission required. Prerequisite, Art 46. *Six studio hours a week, fall and spring.* Howard, Kangas.
- 68b LIFE MODELING (3). Continuation of 68a. Departmental permission required. Prerequisite, Art 68a. *Six studio hours a week, fall and spring.* Howard, Kangas.
- 82a INTERMEDIATE PAINTING (3). Continuation of 63b. Departmental permission required. Prerequisite, Art 63b. *Nine studio hours a week, fall and spring.* Ness, Kachergis, Kinnaird, Zaborowski.
- 82b INTERMEDIATE PAINTING (3). Continuation of 82a. Departmental permission required. Prerequisite, Art 82a. *Nine studio hours a week, fall and spring.* Ness, Kachergis, Kinnaird, Zaborowski.

- 84 CERAMIC DESIGN (3). Approaches to form design through the ceramic medium. Departmental permission required. Prerequisite, Art 46. *Nine studio hours a week, fall and spring.* Laboratory fee, \$16.00. Magennis.
- 86a INTERMEDIATE SCULPTURE (3). Continuation of 64b. Departmental permission required. Prerequisite, Art 64b. *Nine studio hours a week, fall and spring.* Laboratory fee, \$16.00. Howard, Kangas.
- 86b INTERMEDIATE SCULPTURE (3). Continuation of 86a. Departmental permission required. Prerequisite, Art 86a. *Nine studio hours a week, fall and spring.* Laboratory fee, \$16.00. Howard, Kangas.
- 88a INTERMEDIATE PRINTMAKING (3). Continuation of 65a and 65b. Departmental permission required. Prerequisite, Art 65b. *Nine studio hours a week, fall and spring.* Saltzman.
- 88b INTERMEDIATE PRINTMAKING (3). Continuation of 88a. Departmental permission required. Prerequisite, Art 88a. *Nine studio hours a week, fall and spring.* Saltzman.
- 105a ADVANCED PAINTING (3). Continuation of 82b. Departmental permission required. Prerequisite, Art 82b. *Nine studio hours a week, fall and spring.* Ness, Kachergis, Kinnaird, Zaborowski.
- 105b ADVANCED PAINTING (3). Continuation of 105a. Departmental permission required. Prerequisite, Art 105a. *Nine studio hours a week, fall and spring.* Ness, Kachergis, Kinnaird, Zaborowski.
- 107 SPECIAL STUDIES IN CRAFTS AND CRAFT DESIGN (3-6). Advanced craft techniques and design. Course open only to students in art education program. Departmental permission required. Minimum of twenty studio hours a week, summer only (Penland School of Crafts). Staff.
- 108 INDIVIDUAL STUDIES: STUDIO (3-6). Special projects based on student's performance and capacity in other advanced courses. Departmental permission required. *Minimum of nine studio hours a week, by arrangement, fall and spring.* Staff.
- 109 SPECIAL STUDIES IN ART EDUCATION (3-6). Special projects in art education based on student's performance and capacity in other advanced courses. Departmental permission required. Open to Art Education majors only. *Minimum of nine studio hours a week, by arrangement, fall and spring.* Staff.
- 112a ADVANCED SCULPTURE (3). Continuation of 86b. Departmental permission required. Prerequisite, Art 86b. *Nine studio hours a week, fall and spring.* Laboratory fee, \$20.00. Howard, Kangas.
- 112b ADVANCED SCULPTURE (3). Continuation of 112a. Departmental permission required. Prerequisite, Art 112a. *Nine studio hours a week, fall and spring.* Laboratory fee, \$20.00. Howard, Kangas.
- 120a ADVANCED PRINTMAKING (3). Continuation of 88b. Departmental permission required. Prerequisite, Art 88b. *Nine studio hours a week, fall and spring.* Saltzman.
- 120b ADVANCED PRINTMAKING (3). Continuation of 120a. Departmental permission required. Prerequisite, Art 120a. *Nine studio hours a week, fall and spring.* Saltzman.

DEPARTMENT OF BACTERIOLOGY AND IMMUNOLOGY

GEORGE PHILIP MANIRE, *Chairman*

- 51 ELEMENTARY BACTERIOLOGY (4). Required for pharmacy students. Prerequisites, Chemistry 11-12 or 11-21. Covers the general principles and techniques of bacteriology and the relations of these organisms to sanitation, agriculture, medicine and industry. *Three lecture and two laboratory hours a week, spring.* Manire, Straughn.
- 55 ELEMENTARY PATHOGENIC MICROBIOLOGY (4). Required for nursing students; other students by permission of the Department. Prerequisites, Chemistry 11-12 or 11-21. A course covering the fundamental principles of microbiology; the relation of microorganisms to disease; modes of infection; and the etiologic agents of the important infectious diseases. *Three lecture and two laboratory hours a week, fall.* Folds.
- 101 PATHOGENIC BACTERIOLOGY (9). Required for medical students; other students by permission of the Department. Prerequisites, Bacteriology 51 or equivalent. A study of the biology of infectious diseases of man including the principles of immunology, and a detailed consideration of the important bacteria, fungi, rickettsiae, protozoa, and viruses producing human disease. *Five lecture and eight laboratory hours a week, fall.* Staff. Will be discontinued after 1970.
- 115 SPECIAL TOPICS IN BACTERIOLOGY OR IMMUNOLOGY (3 or more each semester). Permission of the Department required. Prerequisites, Bacteriology 101 or 161. Designed to introduce the student to research methods. Minor investigative problems are conducted with advice and guidance of the staff. *Hours and credit to be arranged, any term.* May be repeated for credit two or more semesters. Staff.
- 151 GENERAL BACTERIOLOGY (4). Prerequisites, Chemistry 11-12 or 11-21, and Botany 11 or Zoology 11. Open only to majors in departments other than Bacteriology. Covers the general principles and techniques of bacteriology and the relations of these organisms to sanitation, agriculture, medicine and industry. *Three lecture and two laboratory hours a week, spring.* Manire, Straughn.
- 155 GENETIC SYSTEMS (Bacteriology 155, Biochemistry 155, Botany 171, Pathology 155) (3). No prerequisites. An advanced course in genetics emphasizing the genetics and molecular biology of viruses, bacteria, fungi, insects and mammals. Assigned readings and reports. *Three lectures a week, fall.* Staff.
- 161 ADVANCED MICROBIOLOGY AND IMMUNOLOGY (6). Permission of the Department required. Prerequisites, Biochemistry 100 or 105, Bacteriology 101. Current concepts of the chemistry, structure, physiology and genetics of bacteria and viruses are presented, as they relate to growth, metabolism, variation and action of antimicrobial agents. Instructions in techniques and instrumentation relevant to advanced microbiological studies are given. *Six lectures a week, spring.* Staff.
- 162 ADVANCED MICROBIOLOGY AND IMMUNOLOGY (6). Permission of the Department required. Prerequisites, Biochemistry 100 or 105; Bacteriology 101. Presents the interrelationships of microbial agents with host cells including the inflammatory and immune responses at the molecular and cellular levels, and considers theories in immunochem-

istry, immunopathology, and immunogenetics along with instruction in techniques and instrumentation relevant to advanced immunological studies. *Six lecture hours a week, fall.* Staff.

CURRICULUM IN BIOLOGY

TOM K. SCOTT, *Acting Chairman*

The Undergraduate Curriculum in Biology contains programs of study leading to both an A.B. and a B.S. in Biology. It is designed to show the fruitful application of chemical, physical and mathematical methods to the study of a wide variety of living organisms, and emphasizes that all forms of life have common processes and structures.

The A.B. in Biology makes use of existing biology courses in various departments and is designed for undergraduates with a general interest in biology. Students planning graduate training in biology are directed to the B.S. in Biology, or should ensure that sufficient mathematics, chemistry and physics are taken under the A.B. in Biology to meet Graduate School entrance requirements in Biology.

General College requirements as listed for the A.B. degree and to include for the A.B. are Chemistry 11-11L, 21-21L; Biology 21, 22 (first offered fall 1970) or Botany 11 and Zoology 11; and five additional courses. The third and fourth year courses must include two courses from the Botany Department and two from Zoology, and two to four additional courses from Anatomy, Bacteriology, Biochemistry, Botany Parasitology, Physiology, or Zoology. These six to eight courses must include five laboratory courses and at least one course from each of the following areas of biological study: a) organismal, b) population and community, c) molecular and cellular, d) genetics and development. Allied science requirements (six to seven courses) include at least one course from three of these areas: a) organic chemistry, b) physics, c) calculus, d) geology, e) computer and information science or statistics. In addition six to seven non-divisional electives are required.

The B.S. in Biology is designed for students planning to enter graduate study in the biological sciences, or students planning further study in health-related biological fields. Requirements are English 1, 2; three social science electives; French or German 3, 4, 21; Mathematics 15, 31, 32; Chemistry 11-11L, 21-21L; Physics 24, 25; Biology 21, 22 (first offered fall 1970), or Botany 11 and Zoology 11. For the major, at least 7 biology courses are required and must include Biology 90-90L, 101-101L, 102-102L, 92, and three other biology courses with no

more than two from a single biological science department. Allied science requirements include Chemistry 41-41L, 42-42L, 61, 62, and one additional course. Five non-divisional and three free elective courses are also required.

Students electing either the A.B. or B.S. in Biology should see the Chairman of the Curriculum for assignment to an adviser.

- 21 GENERAL BIOLOGY (4 each semester). No prerequisite. An introduction to general principles and concepts in biology; morphology, physiology, cell biology, heredity, ecology and classification of all organisms. Designed primarily for biology and other science majors. *Three lecture and one three-hour laboratory per week. 21 in fall, 22 in spring.* Long and staff.
- 22
- 90 CELL BIOLOGY (3). Prerequisites, Biology 21, 22, or Bacteriology 51, or Zoology 11, or Botany 11, and Chemistry 11, 12 or permission of instructor. Cell structure in relation to function. Cytology, biochemistry and physiology of animal, plant and bacterial cells and their viruses. The cell in division and development. *Three lecture hours per week, fall and spring.* Misch; Edgell (Bacteriology)
- 90L CELL BIOLOGY LABORATORY (1). Corequisite, Biology 90. Limited to Biology majors except by permission of instructor. Contemporary methods for the analysis of cell structure, function and contents are illustrated by laboratory exercises and demonstrations. *Three laboratory hours per week, fall and spring.* Misch and staff.
- 92 BIOLOGY SEMINAR (2). Open to seniors in the B.S. Biology Curriculum only. Integration of recent biological research and current concepts. Presentations by students and discussion sessions. *Two hours per week, spring.* Staff.
- 98 COURSE FOR HONORS (3 each). Prerequisite, approval by staff honors director. Individual reading, original research, and the preparation of an essay under the direction of a departmental adviser. Required of all candidates for honors in the senior year. *Six or more hours a week, 98-fall, 99-spring.* Terry and staff.
- 99
- 101 GENETICS (3). Prerequisite Bacteriology 51 or Biology 21 and 22, or Botany 11 or Zoology 11, or permission of the instructor. An introduction to the principles of inheritance. Molecular aspects of gene action, Mendelian laws of transmission, the role of genes in development, the genetics of populations. *Three lecture hours per week, fall and spring.* Barry, Hutchison, Whittinghill.
- 101L GENETICS LABORATORY (1). Corequisite, Biology 101, or permission of instructor. The principles of inheritance are illustrated by experiments with viruses, bacteria, fungi, and higher plants and animals. *Four laboratory hours per week, fall and spring.* Biology 101 staff.
- 102 ECOLOGY (Zoology 108) (Botany 141) (3). Prerequisite, Zoology 11, or Botany 11, or Biology 21-22. A study of the principles governing the environmental interrelationships of organisms, populations, communities, and ecosystems. *Three lecture hours per week, fall and spring.* Leith, McCormick, Stiven.

102L ECOLOGY LABORATORY (Zoology 108L) (Botany 141 L) (1). Co-requisite or prerequisite, Biology 102. Laboratory and field studies of ecology. *Three laboratory hours per week, fall and spring.* Biology 102 staff.

DEPARTMENT OF BOTANY

VICTOR AUGUST GREULACH, *Chairman*

For the A.B. with major in botany the following courses are required: Botany 11, 51, 52, 53, and three additional courses in botany. Also required are Zoology 11 and one other course in zoology; one year of chemistry (preferably more, including organic); and either Physics 24-25 or Geology 41-42 (preferably both).

Those students who plan to teach in public high schools should read the instructions under the "School of Education,"

- 10 PLANT LIFE (3). An introduction to interesting and significant aspects of plant life, with emphasis on the roles of plants in the environment and their relevance to man. *Three lecture hours a week, fall and spring.* Koch, McCormick, Parks.
- 11 GENERAL BOTANY (4). Open to all undergraduates regardless of their major field of interest. Prerequisite to all other courses in botany. Scientific study of the structure, life processes, reproduction, and heredity of plants. Also considered are the major groups of plants, plant classification, and the environmental relations and biological and economic significance of plants. *Three lecture and two laboratory hours a week, fall or spring and summer.* Staff.
- 44 ECONOMIC BOTANY (3). Prerequisite, Botany 11. Sophomore elective. May also be taken as a nondivisional elective in the College of Arts and Sciences or a free elective in the School of Business Administration. A survey of the uses and economic aspects of plants and plant products in our present-day society, including horticultural, agricultural, and forest plants and the uses of plant materials in industry. *Three lecture hours a week, spring.* Bell.
- 45 HORTICULTURE (3). Prerequisite, Botany 11. The cultivation, propagation, and breeding of plants, with emphasis on ornamentals. Control of environmental factors for optimal plant growth. The laboratory exercises include plant culture, propagation, pruning, and identification of common ornamentals. *Two lecture and two laboratory hours a week, fall.* Parks.
- 51 FUNGI, ALGAE, AND BRYOPHYTES (4). Prerequisite, Botany 11. An introduction to the biology of bacteria, fungi, lichens, algae, liverworts, and mosses, with emphasis on their structure, development, and evolution. The laboratory will also deal with their culture, collection, identification, and preservation. *Two lecture and four laboratory hours a week, fall.* Koch.
- 52 VASCULAR PLANTS (4). Prerequisite, Botany 11. A detailed study of the organs, tissues, and cells of vascular plants, with emphasis on the seed plants. *Two lecture and four laboratory hours a week, spring.* Dickison.

- 53 FIELD BOTANY (4). Prerequisite, Botany 11. An introduction to the taxonomy and ecology of vascular plants. Lectures, laboratory, and field work on plant identification and classification, collecting and mounting of specimens, and plant communities. The student will become acquainted with over 100 species of native plants. *Two lecture and four laboratory hours a week, spring.* Radford or Bell.
- 54 PLANT PHYSIOLOGY AND MORPHOGENESIS (4). Prerequisites, Botany 11, General Chemistry. An introductory study of plant life processes including metabolism, water relations, mineral nutrition, growth, development and morphogenesis, along with essential background information about plant structure. *Three lecture and three laboratory hours a week, fall.* Greulich.
- 55 ENVIRONMENTAL BIOLOGY (3). Prerequisite, Botany 11 or Zoology 11. Discussions of species populations, environmental conditions, and species-environmental interactions which are of particular significance to man. *Two lecture hours a week and one hour to be arranged, fall.* McCormick.
- 90 CELL BIOLOGY (Biology 90) (3). Prerequisites, Biology 21, 22, or Bacteriology 51, or Zoology 11, or Botany 11, and Chemistry 11, 12, or permission of instructor. Cell structure in relation to function. Cytology, biochemistry and physiology of animal, plant and bacterial cells and their viruses. The cell in division and development. *Three lecture hours a week, fall and spring.* Staff.
- 90L CELL BIOLOGY LABORATORY (Biology 90L) (1). Corequisite, Botany 90. Limited to Biology majors except by permission of instructor. Contemporary methods for the analysis of cell structure, function and contents are illustrated by laboratory exercises and demonstrations. *Three laboratory hours a week, fall and spring.* Staff.
- 95 DIRECTED READING (2 to 4). Prerequisite, permission of the staff. Extensive and intensive reading of the literature of a specific botanical field directed by an appropriate member of the faculty. Written reports on the readings or a literature review paper will be required. Offered on demand. *Each semester.* Staff.
- 96 SPECIAL TOPICS (2 or 3). Prerequisite, permission of the staff. An undergraduate seminar course devoted to consideration of pertinent aspects of a selected botanical discipline such as physiology, cytology, morphogenesis, systematics, ecology, genetics, evolution, algology, mycology or bryology. Offered on demand. *Each semester.* Staff.
- 99 SENIOR THESIS (4). Prerequisite, permission of the staff. Individual reading, study and research and preparation of an acceptable thesis. Required of all candidates for honors in their senior year. *Each semester.* Staff.

The stated prerequisites should be interpreted to read "or equivalent" and may be waived by the instructor for students apparently qualified to do the work of that course.

- 100 THE DEVELOPMENT OF MODERN CONCEPTS IN BOTANY (3). Prerequisite, at least one course in the Biological Sciences. A historical review of the origin and development of modern ideas of plant structure, nutrition, reproduction and evolution. *Three lecture hours a week, spring.* Anderson.

- 111 FUNGI AND ALGAE (5). Prerequisite, Botany 51. Introduction to the systematics, morphology, life histories, development, cytology, collection and culture of algae and fungi. *Three lecture and four laboratory hours a week, fall.* Olive, Koch, Hommersand, Brown.
- 115 FUNGI (4). Prerequisite, Botany 51. An introduction to the systematics, development, culture, collection, identification, and biology of fungi. (1970-1971 and alternate years.) *Five lecture and twelve laboratory hours a week, first summer session.* Koch.
- 120 INSTRUMENTAL METHODS IN BOTANY (4). Prerequisites, Botany 11 and Chemistry 11-21 or equivalents. Theory and application of instruments and procedures employed in botanical research, including chromatography, spectrophotometry, radioisotope tracer techniques, and other biochemical and physiological techniques. *One lecture and six laboratory hours a week, spring.* Domnas.
- 121 PLANT PHYSIOLOGY (5). Prerequisites, Botany 11 and organic chemistry. A general introductory study of the life processes of plants, including water relations, mineral metabolism, photosynthesis, foods, digestion, respiration, assimilation, and growth. *Three lecture and four laboratory hours a week, fall.* Greulach or Scott.
- 131 TAXONOMY OF VASCULAR PLANTS (5). Prerequisite, Botany 53. *Two lecture and four laboratory hours a week, spring.* Radford.
- 141 ECOLOGY (Zoology 108, Biology 102) (3). Prerequisite, Botany 11 or Zoology 11 or Biology 21 and 22. A study of the principles governing the environmental interrelationships of organisms, population, communities, and ecosystems. *Three lecture hours a week, fall and spring.* McCormick, Odum, Stiven, Lieth.
- 141L ECOLOGY LABORATORY (Zoology 108L, Biology 102L) (1) Prerequisites, Botany 11 or Zoology 11. Co-requisite or prerequisite, Botany 141 (Zoology 108 or Biology 102). Laboratory and field studies of ecology. *Three laboratory hours a week, fall and spring.* McCormick, Odum, Stiven and Lieth.
- 143 GEOBOTANY (3). Prerequisite, Botany 11 or Geography 38. Description of the major vegetation types of the world including their distribution, structure, and physiognomy. The principle causes for the distribution of vegetation units, such as climate, soils, and vegetation history will be discussed. *Three lecture hours a week, spring.* Lieth.
- 151 COMPARATIVE MORPHOLOGY OF VASCULAR PLANTS (5). Prerequisite, Botany 11. Comparative morphology and evolutionary relationships of the Tracheophyta. Both living and fossil forms will be considered. (1970-1971 and alternate years.) *Three lecture and four laboratory hours a week, fall.* Dickison.
- 161 CYTOLOGY (5). Prerequisite, Botany 11 or permission of the instructor. Introduction to the methods of cytological analysis and the study of cell structure in relation to function. A survey of cytoplasmic and extracellular constituents of the Monera, Protista, Fungi, and Plantae. *Three lecture and four laboratory hours a week, fall.* Brown.
- 170 GENETICS (Biology 101) (3) Prerequisite, Botany 11 or equivalent. An introduction to the principles of inheritance. Molecular aspects of gene action, Mendelian laws of transmission, the role of genes in development, the genetics of populations. *Three lecture hours per week, fall and spring.* Barry, Hutchison, Lucchesi, Whittinghill.

- 170L GENETICS LABORATORY (Biology 101L) (1). Co-requisite, Botany 170 or permission of the instructor. The principles of inheritance are illustrated by experiments with viruses, bacteria, fungi, and higher plants and animals. *Four laboratory hours per week, fall and spring.* Barry, Hutchison, Lucchesi, Whittinghill.

SCHOOL OF BUSINESS ADMINISTRATION

MAURICE WENTWORTH LEE, *Dean*

The curriculum which leads to the degree of Bachelor of Science in Business Administration is described in detail in a separate bulletin of the School of Business Administration, which may be obtained by addressing a request to the Dean. Students in other schools and colleges wishing to take Business Administration courses for credit should consult their deans.

NOTE: *Economics 31 and 32 or equivalents are prerequisite to all courses in Business Administration*, except as otherwise indicated. Economics 61 with a grade C or better may, under certain circumstances, be substituted for Economics 31 and 32.

- 71 BASIC ACCOUNTING PRINCIPLES (3). Corequisite (or prerequisite), Economics 31 and 32 or equivalent. Role of accounting; basic concepts and methodology; mass data processing; valuation and income determination principles; management and internal control problems of basic financial statement components. *Fall and spring.* Staff.
- 72 FINANCIAL ACCOUNTING PRINCIPLES (3). Prerequisite, Business Administration 71 or equivalent. Designed primarily for accounting majors. Structure of financial statements and related accounting reporting problems; compound interest problems; analysis and interpretation of accounting data; income tax planning. *Fall and spring.* Staff.
- 73 ELEMENTARY MANAGERIAL ACCOUNTING (3). Prerequisite, Business Administration 71 or equivalent. Designed for non-accounting majors. Usefulness and limitations of financial statement analysis; sources and uses of working capital and cash; elements of management accounting, analysis, reporting and control. *Fall and spring.* Staff.
- 74 GENERAL ACCOUNTING (3). Prerequisite, junior-senior standing. Non-business administration students only. Basis for evaluating, interpreting, and reporting financial information. Accounting process, determination of cost and income, sources and uses of capital, changing price levels, income taxes. *Fall and spring.* Terrell, staff.
- 91 BUSINESS LAW (3). The purpose of this course is to give the student an understanding of the main principles of law which govern the daily conduct of business. Contracts and agency are given special attention. *Fall and spring.* Carter, Stewart, Johnson.
- 98 HONORS COURSE (3). Reading and preparation of an essay under the direction of a member of the faculty. *Fall.* Staff.
- 99 HONORS COURSE (3). Reading and preparation of an essay under the direction of a member of the faculty. *Spring.* Staff.

- 110 REAL ESTATE (3). Introduction to: the economic utilization of land; the relation of real estate to business; the real estate market; factors influencing values; legal relationships; financing; the impact of government. *Fall*. Staff.
- 120 RISK MANAGEMENT (3). Analysis of the financial problems inherent in the multitude of static risks which confront the business enterprise, and evaluation of the alternative methods of dealing with such problems utilized in modern scientific risk management. *Fall and spring*. Schwentker.
- 121 LIFE INSURANCE (3). Basic life insurance principles and practices; includes functions, types of contracts, premium and reserve calculations; legal aspects, settlement options and programming; risk selection, company organization and management. *Fall and spring*. Schwentker.
- 122 PROPERTY INSURANCE (3). A study of the more important types of property coverages, including fire, marine, and inland marine insurance. Includes hazards, policy types, rate determination, company organization, financial analysis, and legal background. *Fall and spring*. Schwentker.
- 123 CASUALTY INSURANCE (3). The social, economic, and legal bases for workmen's compensation, automobile, accident and health, burglary, fidelity, surety, and other casualty insurances. Includes rate-making, contract analysis, types of companies, and state regulation. *Fall and spring*. Schwentker.
- 124 ADVANCED LIFE INSURANCE (3). Prerequisite, Business Administration 121 or equivalent. An introduction to the specialized life insurance services, such as advanced programming, Social Security benefits, wills, trusts, taxation, estate planning and business life insurance. *Spring*. Schwentker.
- 125 ADVANCED PROPERTY AND CASUALTY INSURANCE (3). Prerequisites, Business Administration 122 or 123 or equivalents. A study of multiple line insurance, advanced rate-making, financial statements, investments and reserves, insurance statistics, reinsurance, loss adjustment, insurance surveys and governmental regulation. *Spring*. Schwentker.
- 130 PRODUCTION MANAGEMENT (3). Analysis of the production-operating function in both manufacturing and non-manufacturing organizations. Developing production policies which support total organizational goals under varying constraints. *Fall and spring*. Staff.
- 131 PRODUCTION MANAGEMENT ANALYSIS (3). Prerequisite, Business Administration 130 or equivalent. A case analysis course in which the principles of modern production management are applied to the solution of selected production problems considering the total objectives of the organization. *Fall and spring*. George, Levin, McLaughlin, Kottas, Elvers.
- 133 DESIGN AND OPERATION OF PRODUCTION SYSTEMS (3). Prerequisite, Business Administration 130 or equivalent. Analysis of the problems of planning and scheduling the production-operating function of a business enterprise. Topics include forecasting, job-shop scheduling, assembly-line balancing, project management. *Fall*. Elvers.

- 134 ANALYSIS OF BUSINESS DECISIONS (3). Prerequisite, Economics 70. Introduction to the techniques of decision theory with applications to problems in business. *Fall and spring*. Staff.
- 135 QUALITY CONTROL BY STATISTICAL METHODS (3). Prerequisites, Economics 70 or equivalent. Control charts: variables; defects; defectives. Operating characteristic. Tolerance limits. Single; double; multiple and sequential sampling. Producer's and consumer's risk. AOQL. (1971-1972 and alternate years.) *Spring*. Staff.
- 137 PRODUCTION MANAGEMENT CONTROLS (3). Prerequisite, Business Administration 130. Development of the skills necessary to analyze planning and control problems using an integrated set of problems, cases and programming exercises. *Fall and spring*. Kottas.
- 141 TRANSPORTATION MANAGEMENT (3). Management principles applied to transportation as a part of physical distribution. *Fall and spring*. Blaine.
- 150 ORGANIZATIONAL BEHAVIOR (3). Introductory analysis of human behavior in organizations and its applications in organizational and job design, staffing, development, compensation, and labor relations. *Fall and spring*. Staff.
- 156 PERSONNEL PROBLEMS (3). Prerequisite, Business Administration 150 or equivalent. An advanced course in personnel administration concentrating on major problems and policies in managing the human resources in an organization. *Fall and spring*. Staff.
- 158 PERSONNEL DEVELOPMENT (3). Prerequisite, Business Administration 150 or equivalent. Analysis of problems, methods and incentives in the development of personnel. Emphasis is on the development of supervisors and executives. *Fall and spring*. Calhoon, Jerdee.
- 160 PRINCIPLES OF MARKETING (3). Marketing organization and methods with emphasis on the social and economic aspects of distribution. Consumer problems, marketing functions and institutions, marketing methods and policies. *Fall and spring*. Staff.
- 161 ADVERTISING (3). Prerequisite, Business Administration 160 or equivalent. Organization and functions of advertising. Topics include economic and social aspects; types of advertising and purposes; media types; selection and evaluation; advertising research. *Fall or spring*. Kirkpatrick, Kendall.
- 162 SALESMANSHIP AND SALES PROMOTION (3). Prerequisite, Business Administration 160 or equivalent. Principles of effective selling; professional aspects of personal selling; qualifications and obligations of salesmen; program planning and administration; interdepartmental coordination of promotion efforts. *Fall or spring*. Kirkpatrick.
- 163 MANAGEMENT OF PROMOTION (3). Prerequisite, Business Administration 160 or equivalent. Consumer behavior, personal selling, advertising, sales promotion, and the management of total promotion programs. *Fall and spring*. Kirkpatrick, Tillman.
- 165 RETAILING (3). Prerequisite, Business Administration 160 or equivalent. Topics include development of the present retail structure,

functions performed, principles governing effective operations, modern store policies and practices, and managerial problems. *Fall and spring.* McGregor.

- 166 DISTRIBUTION MANAGEMENT (3). Prerequisite, Business Administration 160. The area of distribution in business, including retailing, wholesaling, marketing logistics, distribution analysis. *Fall and spring.* Staff.
- 167 SALES MANAGEMENT (3). Prerequisite, Business Administration 160 or equivalent. Planning, organization, and control of sales operations. Emphasis upon the sales manager's functions and problems in manufacturing, wholesaling, and service establishments. *Fall and spring.* Tillman.
- 168 INTRODUCTION TO MARKETING RESEARCH (3). Prerequisites, Economics 70 and Business Administration 160 or equivalents. An introduction to research methodology with emphasis upon the compilation, analysis and interpretation of data. *Fall and spring.* Littlefield. Kendall.
- 169 MARKETING POLICIES (3). Prerequisites, Business Administration 160, or equivalent, and senior standing. A problems method course dealing with specialized marketing functions and policies; includes product and line, brands, channels of distribution, pricing, promotion, and diagnosis and control. *Fall and spring.* Staff.
- 170 ADVANCED FINANCIAL ACCOUNTING I (3). Prerequisite, Business Administration 72 or equivalent. Income measurement and valuation problems related to cash, marketable securities, receivables and special sales methods, inventories, long term investments, and liabilities, *Fall and spring.* Reynolds, Windham, Brummet.
- 171 ADVANCED FINANCIAL ACCOUNTING II (3). Prerequisite, Business Administration 170 or equivalent. Income measurement and valuation problems related to plant and equipment, intangible assets and stockholder equity; partnership problems; insurance problems; price-level problems; and statement analysis. *Fall and spring.* Reynolds, Cook, Windham.
- 172 ACCOUNTING THEORY (3). Prerequisite, senior standing. Critical examination and analysis of accounting principles with emphasis on determination of cost and income, valuation and statement presentation. Study of current problems presented in accounting literature and business cases. *Fall and spring.* Langenderfer.
- 173 COST ACCOUNTING (3). Prerequisite, Business Administration 72 or equivalent. Study of cost systems, including job order process, and standard costs. Managerial use of information is stressed. *Fall and spring.* Terrill.
- 174 MANAGEMENT ANALYSIS, REPORTING AND CONTROL (3). Prerequisite, Business Administration 73 or 173. Development of reasonably precise formulations of specific objectives, concepts and analytical methods to serve the information needs of decision-making and control for various management problems. *Fall and spring.* Langenderfer, Terrill, Cook.
- 175 AUDITING (3). Prerequisite, Business Administration 72 or equivalent. A course in auditing theory and practice. Auditing standards,

procedures, rules of professional conduct, and related materials of professional importance are studied. *Fall and spring*. Terrill.

- 177 **FEDERAL AND STATE TAXATION (3)**. Prerequisite, Business Administration 72 or 73. Federal and State tax laws and their application to tax situations for various taxable entities. Basic tax research and tax planning. *Fall and spring*. Windham, Robey.
- 178 **SPECIALIZED ACCOUNTING PROBLEMS (3)**. Prerequisite, Business Administration 171 or equivalent. Advanced problems involving foreign exchange and branches, domestic branches, consolidations, estates and trusts, sick-business problems, compound interest applications, and governmental accounting. *Fall*. Reynolds.
- 179 **CERTIFIED PUBLIC ACCOUNTING PROBLEMS (3)**. Prerequisites, major in accounting and permission of the instructor. A review of the general and specialized accounting problems which constitute the subject matter of C.P.A. examinations. *Spring*. Langenderfer.
- 180 **BUSINESS FINANCE (3)**. Prerequisite, Business Administration 71 or equivalent. Theoretical foundations of optimal financial policy. Problems and cases provide application of theory to financial decisions involving cash flow, capital structure, capital budgeting. *Fall and spring*. Staff.
- 181 **CAPITAL MARKETS (3)**. Prerequisites, Business Administration 180 and Economics 132. Analysis of the basic factors determining the supply and demand for funds. The role of the private sectors is emphasized. *Fall or spring*. Kreps, Phillips.
- 182 **CASES IN BUSINESS FINANCE (3)**. Prerequisite, Business Administration 180 or equivalent. Attention is given to cases involving financial decisions for non-financial corporations. Both long and short term capital problems are considered. *Fall or spring*. Staff.
- 185 **FINANCIAL INSTITUTIONS (3)**. Prerequisites, Business Administration 180 and Economics 132 or equivalents. Lectures, cases, and readings covering the financial management of commercial banks and selected nonbank financial institutions. *Fall or spring*. Kreps, Phillips.
- 186 **INVESTMENTS (3)**. Prerequisite, Business Administration 180 or equivalent. A survey of investment principles and practice. Emphasis is given to the problems of security analysis and investment-portfolio management, with special attention to the problems of the individual investor. *Fall and spring*. Latané, Staff.
- 190 **ADMINISTRATIVE POLICY (3)**. Prerequisite, senior standing. Comprehensive analysis of administrative policy-making from a total organization point of view; use of case analysis and simulation to develop integrative decision skills. *Spring*. Levin.
- 191 **INTRODUCTION TO INTERNATIONAL BUSINESS (3)**. Prerequisite, senior standing. Problems in operating overseas, including analysis of differences in country settings, legal and financial systems, and governmental policies affecting foreign operations. *Fall and spring*. Behrman.
- 192 **INTRODUCTION TO MANAGEMENT INFORMATION SYSTEMS (3)**. Prerequisite, senior standing. A survey of the elements and function

of management information systems and an introduction to the principles underlying the design of effective systems. *Fall*. DesJardins.

- 194 CREDIT TRANSACTIONS AND SALES (3). Prerequisite, Business Administration 91 or equivalent. The law of negotiable instruments and the legal principles governing sales, including conditional sales and security transactions, are covered. *Fall and spring*. Carter, Stewart.
- 195 LAW OF TRADE (3). Prerequisite, Business Administration 91 or equivalent. This course considers the law affecting the conduct of trade and industry; nature and scope of competition at common law, and legislative attempts to fix the boundaries of permissible competition. *Spring*. Stewart.
- 196 SOCIAL PSYCHOLOGY OF ORGANIZATIONS (3). Prerequisite, Business Administration 150 or equivalent. Systems analysis of behavior in organizations and its application to the management of human resources. *Fall and spring*. Calhoon, Moffie, Adams.
- 197 FUNDAMENTALS OF MANAGERIAL ORGANIZATION (3). Prerequisite, senior standing. A detailed analysis of the basic problems of organizing manpower. *Fall and spring*. George.
- 198 OPERATIONS RESEARCH (3). Prerequisite, Economics 70 or equivalent. The use of quantitative methods in managerial decision making. Topics include linear programming, inventory control, Bayes Theorem, game theory, queuing, and Markov chains. *Fall and spring*. Levin, DesJardins, Kottas, Elvers.
- 199 MANAGEMENT SIMULATION (3). Open to seniors only. A seminar simulating the operation of a complex business enterprise. Three student teams operate competing firms in an industrial environment simulated by the IBM 360 Computer. *Fall and spring*. Levin, DesJardins.

DEPARTMENT OF CHEMISTRY

RICHARD GRANT HISKEY, *Chairman*

For the A.B. with a major in chemistry, the sequence of courses in the new chemistry curriculum is: Chemistry 11, 11L, 21, 21L, 41, 41L, 42, 42L, 61, 62, and at least one course from each of the following groups—(51 or 150), (180, 181, or 183), (170L or 171L). Physics 24 and 25 or Physics 26 and 27 are required. Math 31 is also required. (This sequence is for the students on the *new* chemistry curriculum. All students taking Chemistry 11 during the fall semester, 1968 or thereafter must follow this sequence. Students having taken Chemistry 11 prior to the fall semester, 1968 and not electing to transfer to the new curriculum should consult an older bulletin for program requirements of the previous curriculum.)

Those students who plan to teach in public high schools should see "School of Education."

Bachelor of Science in Chemistry¹

(For freshman and sophomore years see "General College.")

JUNIOR YEAR

Chemistry 150
 Chemistry 160
 Chemistry 170L, 171L
 Chemistry 181, 181L

Chemistry 182, 182L
 English 21 or Math 34
 Science Electives (2 courses)
 Non-Science Elective

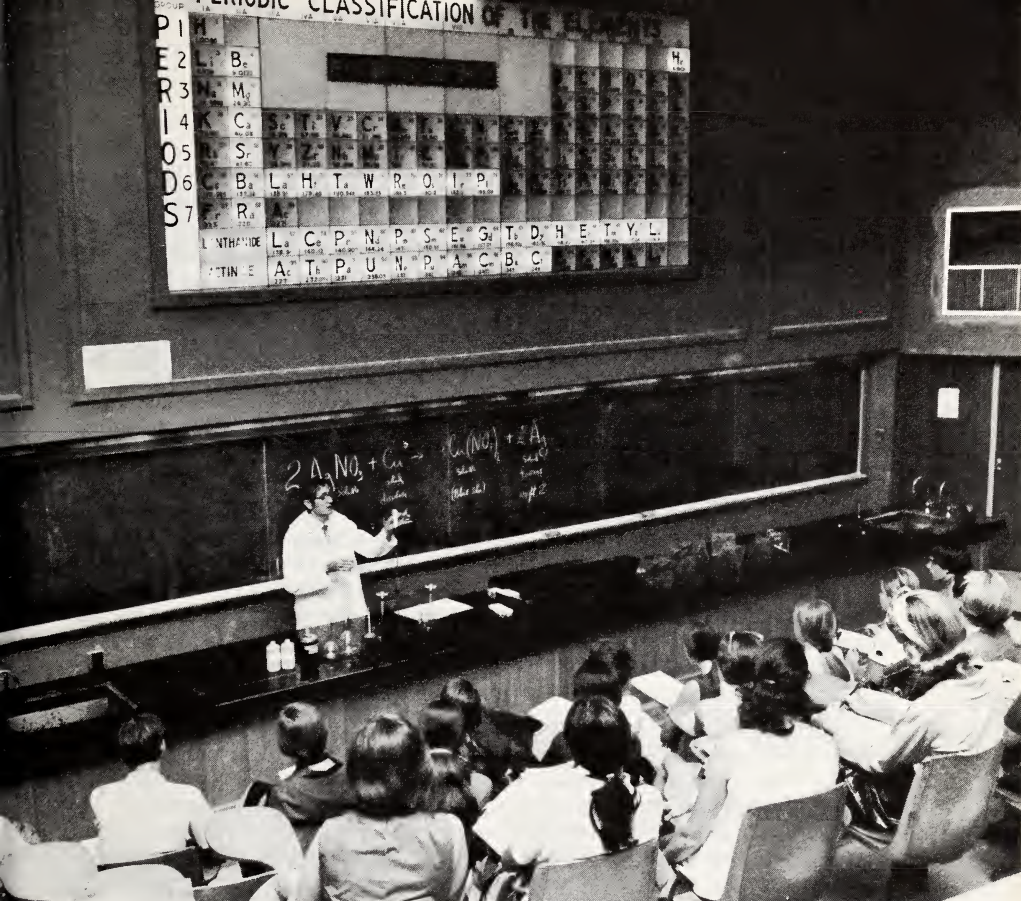
SENIOR YEAR

Chemistry Electives (3 courses)
 Science Electives (2 courses)
 (Chemistry or non-chemistry
 courses at 100 level; or
 Physics 28, 58, 61)

Non-Science Electives (2 courses)
 Free Electives (2 courses)
 (Science or non-science courses)

- 11 GENERAL DESCRIPTIVE CHEMISTRY (3). Corequisite, Chemistry 11L. *Three lecture hours a week, fall and spring. Staff.*
- 11L QUANTITATIVE CHEMISTRY LABORATORY (1). Corequisite, Chemistry 11. *One 3-hour laboratory a week, fall and spring. Staff.*
- 11X GENERAL DESCRIPTIVE CHEMISTRY (3). This course is a separate section of Chemistry 11 with a content modified for the non-science student. It is *not* a preparation for Chemistry 21. It will count as a non-laboratory science elective in the General College. *Three lecture hours a week, fall. Staff.*
- 12 GENERAL DESCRIPTIVE CHEMISTRY (3). Prerequisite, Chemistry 11; corequisite, Chemistry 12L. Emphasis given to organic chemistry. This course does not constitute a prerequisite for other courses in chemistry. *Three lecture hours a week, spring. Staff.*
- 12L GENERAL CHEMISTRY LABORATORY (1). Prerequisite, Chemistry 11; corequisite, Chemistry 12. *One 3-hour laboratory a week, spring. Staff.*
- 21 GENERAL DESCRIPTIVE CHEMISTRY (3). Prerequisite, Chemistry 11; corequisite, Chemistry 21L. *Three lecture hours a week, fall and spring. Staff.*
- 21L QUANTITATIVE CHEMISTRY LABORATORY (1). Prerequisite, Chemistry 11; corequisite, Chemistry 21. Techniques for quantitative acid-base, redox, and complexometric titrimetry. Gravimetric analysis. Total salt ion exchange analysis. (Transfer students who have not had quantitative analysis in their previous courses will take this laboratory). *One 3-hour laboratory a week, fall and spring. Staff.*
- 41 MODERN ANALYTICAL METHODS FOR SEPARATION AND CHARACTERIZATION (2). Prerequisite, Chemistry 21; corequisite, Chemistry 41L; prerequisite or corequisite, Chemistry 61. The basic principles of chemical separations, including chromatography and electrophoresis, and an introduction to analytical spectroscopy (visible, ultraviolet, and infrared) from a quantitative and structural viewpoint. *Two lecture hours a week, fall and spring. Buck, Bursey, Knight, Murray, Reilley.*

1. This program meets the requirements of the American Chemical Society for the training of professional chemists.



- 41L LABORATORY IN SEPARATIONS AND ANALYTICAL CHARACTERIZATION OF ORGANIC AND BIOLOGICAL COMPOUNDS (2).** Co-requisite, Chemistry 41; prerequisite or corequisite, Chemistry 61. Applications of separation and spectroscopic techniques to organic compounds, including some of biological interest. Principles of chromatography and absorption spectroscopy; correlation of spectra with structure. (This laboratory serves as an organic chemistry laboratory for premedical and pre dental students. *One 4-hour laboratory a week, fall and spring.* Analytical and organic staff.
- 42 MODERN ANALYTICAL METHODS FOR SEPARATION AND CHARACTERIZATION: SECOND COURSE (2).** Prerequisite, Chemistry 41; 41L; corequisite, Chemistry 42L; prerequisite or corequisite, Chemistry 62. Intermediate analytical spectroscopy (magnetic resonance and mass spectroscopy); principles of Nernstian electrochemistry; acid-base-solvent concepts; analytical coordination chemistry; analysis of kinetics and equilibria; radiochemical techniques. *Two lecture hours a week, fall and spring.* Buck, Bursey, Knight, Murray, Reilley.
- 42L LABORATORY IN SEPARATIONS AND ANALYTICAL CHARACTERIZATION OF ORGANIC AND BIOLOGICAL COMPOUNDS: SECOND COURSE (2).** Prerequisite or corequisite, Chemistry 62; corequisite, Chemistry 42. Applications and illustrations of modern analytical spectroscopic techniques; quantitative investigation of chemical prop-

erties through electrochemical, radiochemical, and newer titrimetric techniques (some preparative experience is included with these studies). (This course serves as an organic chemistry laboratory for premedical and pre dental students.) *One 4-hour laboratory a week, fall and spring.* Analytical and organic staff.

- 45 ADVANCED QUANTITATIVE ANALYSIS (4). Prerequisite, Chemistry 43; corequisite, Chemistry 182. Advanced quantitative analysis with special emphasis on instrumental methods. *Two lecture and four laboratory hours a week, spring.* Buck, Knight, Reilley, Murray, Burse.
- 51 INORGANIC CHEMISTRY (4). Prerequisite, Chemistry 21 or equivalent. *Three lecture and three laboratory hours a week, fall and spring.* Collier, Jicha, Hatfield, Meyer, Hodgson, Rakita.
- 61 INTRODUCTION TO ORGANIC CHEMISTRY (2). Prerequisite, Chemistry 21. Molecular structure and its determination by modern physical methods, correlation between structure and reactivity and the theoretical basis for these relationships; classification of "reaction types" exhibited by organic molecules using as examples molecules of biological importance. *Two lecture hours a week, fall and spring.* Little, Hiskey, McKee, Coke, Whitten, Rieke, Harrison, Brookhart, Kropp.
- 62 INTRODUCTION TO ORGANIC CHEMISTRY (2). Prerequisite, Chemistry 21. Molecular structure and its determination by modern physical methods, correlation between structure and reactivity and the theoretical basis for these relationships; classification of "reaction types" exhibited by organic molecules using as examples molecules of biological importance. *Two lecture hours a week, fall and spring.* Little, Hiskey, McKee, Coke, Whitten, Rieke, Harrison, Brookhart, Kropp.
- 99 RESEARCH IN CHEMISTRY FOR UNDERGRADUATES (3). Prerequisite, permission of the instructor. This course may be accepted for Honors in Chemistry by petition to the Honors Program Committee. Open to advanced undergraduate chemistry majors only. This course may be taken repeatedly for credit; but it may not be counted more than twice for the purpose of fulfilling the chemistry and/or the science elective requirement. *Fall and spring.* Staff.
- 101 SPECIAL PROBLEMS IN CHEMISTRY (1 to 3). Prerequisite, to be determined by consultation with Director of Undergraduate Studies. *Equivalent of one to three hours a week, fall and spring.* Staff.
- 130 PROTEIN CHEMISTRY (Biochemistry 130) (3). Prerequisites, Chemistry 61, 62 or equivalent. Topics will include: structural properties of proteins; active site chemistry; chemical modification of proteins; metalloproteins; coenzyme-enzyme interactions; organization of enzyme systems. *Three lecture hours a week, spring.* Hiskey and Harrison.
- 131 NUCLEIC ACID CHEMISTRY (Biochemistry 131) (3). Prerequisites, Chemistry 61, 62 or equivalent. This course will deal with a study of the reactions and chemical properties basic to nucleic acids. The chemical synthesis as well as biosynthesis will be of prime interest. Topics dealing with the role of nucleic acids in protein biosynthesis will also be covered. *Three lecture hours a week, spring.* Hiskey, Harrison; staff.
- 132 ENZYME MECHANISMS (Biochemistry 132) (3). Prerequisites, Chemistry 61, 62 or equivalent; Biochemistry 105. A detailed discussion of enzyme catalysis; the active site of enzymes; cooperative interactions between enzyme sub-units; the mechanism of coenzyme catalyzed re-

actions; enzyme kinetics as affected by allosteric effectors, substrates, inhibitors, pH and temperature. Examples will be selected from the various types of enzyme reactions such as hydrolases, ligases, lyases, oxidases. *Three lecture hours a week, fall.* Hiskey, Harrison.

- 135 PHYSICAL CHEMISTRY OF MACROMOLECULES (3). Prerequisites, Chemistry 181-182 or equivalent. Kinetics of polymerization molecular weight distribution and molecular weight measurements, solution properties, solid state properties of macromolecules. *Three lecture hours a week, spring.* Hermans.
- 136 LABORATORY TECHNIQUES FOR BIOPOLYMERS (3). Prerequisites, Chemistry 61, 62 or equivalent. The course is intended to give an introduction to the most important analytical techniques and research procedures which are currently in use in the fields of protein and nucleic acid chemistry. *Two 3-hour laboratories a week, spring.* Hiskey and Harrison.
- 141 LABORATORY IN ANALYTICAL RESEARCH TECHNIQUES I (1-2). Prerequisites, Chemistry 181 or permission of instructor. Computer programming, analog electronics, basic electroanalytical techniques, nuclear magnetic resonance, and mass spectrometry. (Credit to be determined by number of topics selected by the student in conjunction with the instructor.) *One 4-hour laboratory a week, fall.* Buck, Bursey, Knight, Murray, and Reilley.
- 142 LABORATORY IN ANALYTICAL RESEARCH TECHNIQUES II (1-2). Prerequisites, Chemistry 181 or permission of instructor. Instrumentation of visible, ultraviolet, and infrared spectrophotometry, basic electronics and applications to chemical data acquisition systems, chromatographic techniques, nuclear magnetic resonance, mass spectrometry, and other special techniques. (Credit to be determined by number of topics selected by the student in conjunction with the instructor.) *One 4-hour laboratory a week, spring.* Buck, Bursey, Knight, Murray, and Reilley.
- 143 MECHANISTIC ANALYSIS (2). Prerequisites, Chemistry 181 or permission of instructor. Discussion of reaction mechanisms and equilibria importance in analytical solution chemistry. Structure-reactivity relationships, metal complex and redox equilibria and kinetics, analysis by reaction kinetics, kinetic enzymatic analysis, mechanisms important in quantitative organic reactions. *Two lecture hours a week, fall or spring.* Buck, Bursey, Knight, Murray, and Reilley.
- 144 SEPARATIONS (2). Prerequisites, Chemistry 41, 42. Theory and applications of equilibrium and non-equilibrium separations techniques. Extraction, countercurrent distribution, gas chromatography, column and plane chromatographic techniques, electrophoresis, ultracentrifugation, and other separation methods. *Two lecture hours a week, spring.* Buck, Bursey, Knight, Murray, and Reilley.
- 145 ELECTROANALYTICAL CHEMISTRY (2). Prerequisites, Chemistry 41, 42, one year of college physics. Transform analysis of passive networks, analog electronics, kinetic principles related to electrochemical processes, types of electrode reactions, large and small-amplitude electroanalytical techniques, miscellaneous applications. *Two lecture hours a week, fall.* Buck, Bursey, Knight, Murray, and Reilley.

- 146 ANALYTICAL SPECTROSCOPY I (2). Prerequisites, Chemistry 41, 42, and one year of college physics. Visible, ultraviolet, infrared, nuclear magnetic resonance, and mass spectrometry. Basic spectroscopic principles, structure-spectral correlation, applications in analysis. *Two lecture hours a week, fall.* Buck, Bursey, Knight, Murray, and Reilley.
- 147 ANALYTICAL SPECTROSCOPY II (2). Prerequisites, Chemistry 41, 42, one year of college physics. Principles and applications of X-ray absorption and emission, photoelectron. Raman, gamma-ray, Mossbauer and internal reflection spectroscopy, nuclear quadrupole and electron spin resonance, fluorescence, optical rotatory dispersion and circular dichroism, secondary emission methods. *Two lecture hours a week, spring.* Buck, Bursey, Knight, Murray, and Reilley.
- 150 INTERMEDIATE INORGANIC CHEMISTRY (3). Prerequisite, Chemistry 181. A survey course which considers both physical and synthetic inorganic chemistry. Treatment of individual topics stresses those aspects which are in keeping with present-day trends in inorganic chemistry as well as those aspects necessary for a solid foundation in more advanced inorganic courses. *Three lecture hours a week, spring.* Jicha, Hatfield, Meyer, Hodgson, Rakita.
- 151 THEORETICAL INORGANIC CHEMISTRY (3). Prerequisites or corequisites, Physical Chemistry. Chemical applications of group theory, crystal field theory, molecular orbital theory. *Three lecture hours a week, fall.* Jicha, Hatfield, Hodgson, Rakita.
- 152 INORGANIC REACTION MECHANISMS (3). Prerequisite, Chemistry 150. Thermodynamics of inorganic systems, kinetics and mechanisms of inorganic reactions, organometallic chemistry. *Three lecture hours a week, spring.* Jicha, Meyer, Hodgson.
- 153 PHYSICAL METHODS IN INORGANIC CHEMISTRY (3). Prerequisite, Chemistry 151. This course is designed to introduce the student to the physical techniques used for the characterization and study of inorganic compounds. Topics include electronic and vibrational spectroscopy, electron and nuclear magnetic resonance, quadrupole resonance. *Three lecture hours a week, spring.* Hatfield, Hodgson, Rakita.
- 154 INORGANIC PREPARATIONS (3). Prerequisite, Chemistry, 51; prerequisites or corequisites, Chemistry 181, 182. *Six laboratory hours a week, fall or spring.* Collier, Jicha, Hatfield, Meyer, Hodgson, Rakita.
- 160 INTERMEDIATE ORGANIC CHEMISTRY (3). Prerequisite, Chemistry 62. A detailed discussion of organic reaction mechanisms and organic synthesis. *Three lecture hours a week, fall and spring.* Hiskey, Little, Harrison, Coke, McKee, Whitten, Rieke, Brookhart, Kropp.
- 163 QUALITATIVE ORGANIC ANALYSIS (5). Prerequisites, Chemistry 61, 62. *Two lecture and six laboratory hours a week, fall.* McKee, Little, Coke.
- 166 ADVANCED ORGANIC CHEMISTRY (3). Prerequisites, Chemistry 160 or equivalent. Coverage will center on the stereochemistry and the acid-base reactions of organic molecules. Spectroscopic methods will be used to illustrate the properties of reactive intermediates and the stereochemical and mechanistic aspects of selected organic reactions of this type. *Three lecture hours a week, fall.* Hiskey, Little, McKee, Coke, Whitten, Rieke, Brookhart, Kropp.

- 167 ADVANCED ORGANIC CHEMISTRY (3). Prerequisites, Chemistry 160 or equivalent. Coverage will center on the quantitative aspects of organic reactions. Topics include: bonding, molecular orbital theory and calculations on simple systems, kinetics, structure-reactivity relationships, and mechanisms of organic reactions categorized by type of transition state. *Three lecture hours a week, fall.* Hiskey, Little, McKee, Coke, Whitten, Rieke, Brookhart, Kropp.
- 168 SYNTHETIC ASPECTS OF ORGANIC CHEMISTRY (3). Prerequisites, Chemistry 166, 167, or permission from instructor. Coverage includes a description of modern synthetic methods and their application to the synthesis of complicated molecules. *Three lecture hours a week, spring.* Hiskey, Little, McKee, Coke, Whitten, Rieke, Brookhart, Kropp.
- 169 ADVANCED ORGANIC PREPARATIONS (2). Prerequisite or co-requisite, Chemistry 163. *Four laboratory hours a week, fall and spring.* McKee, Hiskey, Little, Coke, Whitten, Rieke, Harrison, Brookhart, Kropp.
- 170L SYNTHETIC CHEMISTRY LABORATORY (2). Prerequisites, Chemistry 62, 41L. An integrated treatment of both organic and inorganic synthesis. *One 4-hour laboratory a week, fall.* Organic and inorganic staff.
- 171L SYNTHETIC CHEMISTRY LABORATORY (2). Prerequisite or co-requisite, Chemistry 51 or 150. An integrated treatment of both organic and inorganic synthesis. *One 4-hour laboratory a week, spring.* Organic and inorganic staff.
- 172 RADIOCHEMISTRY (3). Prerequisites, Chemistry 21, Physics 24, 25, and at least senior standing. *Three hours a week, fall.* Collier; staff.
- 173 LABORATORY TECHNIQUES IN RADIOCHEMISTRY (2). Prerequisite, Chemistry 172 or equivalent. *Four laboratory hours a week, spring.* Collier; staff.
- 180 PRINCIPLES OF PHYSICAL CHEMISTRY (3). Prerequisites, one year of college physics, Math 31. Does not carry credit toward graduate work in Chemistry or credit toward the B.S. degree in Chemistry. *Three hours a week, fall.* Physical Chemistry staff.
- 181 PHYSICAL CHEMISTRY (3). Prerequisites, Chemistry 11, 21 or 11, 12; satisfactory work in physics and integral and differential calculus. Normally, Chemistry 181L is a corequisite, but with permission of the instructor it can be omitted. *Three lecture hours a week, fall.* Dearman, Jarnagin, Johnson, Morrow, Pedersen, Thomas, Hermans, Baer.
- 181L PHYSICAL CHEMISTRY LABORATORY (2). Prerequisites, Chemistry 11-21 or 11-12; satisfactory work in physics and integral and differential calculus; corequisite, Chemistry 181. *One 4-hour laboratory a week, fall.* Baer, Dearman, Jarnagin, Johnson, Morrow, Pedersen, Thomas, Hermans.
- 182 PHYSICAL CHEMISTRY (3). Prerequisites, Chemistry 11-21 or 11-12; satisfactory work in physics and integral and differential calculus; Chemistry 181. Normally, Chemistry 182L is corequisite, but with permission of the instructor, it can be omitted. *Three lecture hours a week, spring.* Baer, Dearman, Jarnagin, Johnson, Morrow, Pedersen, Thomas, Hermans.
- 182L PHYSICAL CHEMISTRY LABORATORY (2). Prerequisites, Chemistry 11-21 or 11-12; satisfactory work in physics and integral and dif-

- ferential calculus; Chemistry 181, 181L; corequisite Chemistry 182. *One 4-hour laboratory a week, spring.* Baer, Dearman, Jarnagin, Johnson, Morrow, Pedersen, Thomas, Hermans.
- 183 INTRODUCTION TO BIOPHYSICAL CHEMISTRY (3). Prerequisites, Chemistry 61, one year of college physics, satisfactory working knowledge of differential and integral calculus. Does not carry credit toward graduate work in chemistry or credit toward the B.S. degree in chemistry. *Three lecture hours a week, fall.* Dearman, Pedersen, Thomas.
- 184 INTRODUCTION TO STATISTICAL THERMODYNAMICS (3). Prerequisite, Chemistry 181, 182 or equivalent. Basic principles of statistical thermodynamics. *Three lecture hours a week, fall.* Dearman, Hermans, Jarnagin, Rice, Johnson, Morrow, Pedersen, Thomas, Baer.
- 185 ADVANCED CHEMICAL THERMODYNAMICS (3). Prerequisite, Chemistry 184 or equivalent. Advanced topics in thermodynamics. *Three lecture hours a week, spring.* Dearman, Hermans, Jarnagin, Rice, Johnson, Morrow, Pedersen, Thomas, Baer.
- 186 ADVANCED PHYSICAL CHEMISTRY (3 each). Prerequisites, Chemistry 181, 182, or equivalent preparation. *Three hours a week, fall and spring.* Jarnagin, Dearman, Johnson, Pedersen, Baer.
- 188 REACTION KINETICS (3). Prerequisites, Chemistry 181, 182. *Three hours a week, spring.* Morrow, Rice, Jarnagin, Dearman, Johnson, Pedersen.
- 191 MATHEMATICAL TECHNIQUES FOR CHEMISTS (3). Prerequisite, satisfactory preparation in differential and integral calculus. Chemical applications of higher mathematics. *Three lecture hours a week, fall.* Baer, Dearman, Hermans, Jarnagin, Rice, Johnson, Morrow, Pedersen, and Thomas.

DEPARTMENT OF CITY AND REGIONAL PLANNING

JOHN ALBERT PARKER, *Chairman*

The Department of City and Regional Planning offers two degree programs, each at the graduate level. A two-year program preparing for professional practice in city and regional planning leads to the degree of Master of Regional Planning. A program leading to the degree of Doctor of Philosophy prepares for academic careers in teaching and research. These two programs, opportunities in the field of city and regional planning, and application procedures are described in detail in a separate bulletin of the Department of City and Regional Planning which may be obtained by addressing a request to the Department.

A bachelor's degree from an institution of recognized standing is required for admission. While the design professions, the social sciences, and engineering are the most clearly relevant undergraduate backgrounds in preparation for graduate work in planning, there is increasing need in the field for people prepared in the humanities and physical sciences, and many op-

portunities for students in other fields. Applications for admission are generally considered in view of the student's past record and interest in planning.

Undergraduates who contemplate graduate work in planning are advised to discuss their programs with the Chairman of the Department as early as possible. Planning 106, Introduction to Urbanism and Planning, is offered each year and is open to juniors and seniors. Introductory courses in design, economics, history of art and architecture, logic, philosophy, political science, and sociology, while not prerequisites, are recommended as valuable preparation for students in planning. An introductory course in statistics is a prerequisite or corequisite of the program.

Important resources available to the Department include the Institute of Latin American Studies, the Institute of Environmental Health Studies, and the Center for Urban and Regional Studies, a research and service activity in urban and regional affairs. The Center was established in 1957 under a Ford Foundation grant to engage in urban research; and beginning in 1970, the Center has undertaken to apply new research developments directly to urban problems in the State.

Faculty and graduate students in the Department participate in the activities of the University's Institute of Environmental Health Studies and in the Comprehensive Health Planning Program. The latter is conducted in collaboration with the Schools of Medicine and Public Health.

With support from the National Science Foundation's program in Science Development, an Urban and Regional Systems Group was established within the Department in 1967 to undertake theoretical research in processes of urban and regional development. To facilitate the Systems Group's research and teaching, a Metropolitan Simulation Laboratory has been established. This facility brings into the Department modern data processing equipment and console connections to the Triangle Universities Center's IBM System 360/75.

The demand for persons with graduate education in city and regional planning considerably exceeds the supply. Alumni of the Department are employed by public and private planning agencies at the local, state, regional, and national levels in all parts of the United States and in other countries. Others serve as consultants to business, industry, and government. Still others are engaged in teaching and research in academic institutions.

Undergraduate Honors Program in Urban and Regional Studies

Undergraduates reading for honors, or those certified by their departments as eligible for honors study, may enroll in an

honors program in urban studies. A student admitted to the program is required to take one or more urban oriented courses in his major and a minimum of two outside the major. The following list is illustrative of such courses: Anthropology 167, Urban Anthropology; Economics 163, Economic Development; Political Science 101, Public Administration; Political Science 133, Municipal Administration; Political Science 156, Urban Political Systems; Sociology 168, The City; Sociology 186, Population; Planning 106, Introduction to Urbanism and Planning; Planning 174 (Economics 122), Urban Economics; Planning 176 (Economics 120), Location and Space Economy; Planning 178 (Economics 121), Regional Science Techniques; Geography 151, Urban Geography; Geography 152, Economic Geography; and Geography 183, Industrial Location. In the event that no urban or regional oriented course is available in the major, a minimum of three such courses is required outside the major. In addition, a student accepted for the honors program in urban and regional studies is required to enroll in an honors seminar (Planning 199) in which he will undertake individual research in his particular field of interest.

Students achieving distinction in honors papers and maintaining a very high level of academic performance in their course work, in addition to graduating with honors awarded by their department will be further awarded a Certificate of Honors in Urban and Regional Studies.

Students interested in the honors program should see the chairman of the Department of City and Regional Planning, preferably in the spring semester of their sophomore year.

- 106 INTRODUCTION TO URBANISM AND PLANNING (3). Discussion and analysis of current urban problems and of forces responsible for urban and regional growth. Historical perspective on the planning profession and the planning approach to urban phenomena. Evaluation of current proposals dealing with aspects of the urban situation in the U. S. *Spring*. F. H. Parker.
- 127 TRANSPORTATION AND TECHNOLOGIC SYSTEMS (3). Fundamental characteristics of the urban transportation system and other technologic systems as components of urban structure. Methodologies and techniques for the analysis and planning of urban transportation. *Spring*. Lathrop.
- 174 URBAN ECONOMICS (Economics 122) (3). Prerequisite, Economics 131 or equivalent. Economic analysis of urban growth, urban structure, and current urban problems; location theory; transportation and housing problems; racial issues and the provision of urban services. *Spring*. Knox.
- 176 LOCATION AND SPACE ECONOMY (Economics 120) (3). Prerequisite, Economics 131 or consent of instructor. Economic analysis and regional growth, regional structure, and current regional problems; central place theory and location patterns of cities; the demand for an

allocation of space within urban areas; agglomeration effects and economies of scale. *Fall*. Knox.

- 178 REGIONAL SCIENCE TECHNIQUES (Economics 121) (3). Prerequisite, Economics 132 or consent of instructor. Understanding and projection of variables within urban areas and regions: economic base studies; industrial location and industrial complex analysis; input-output analysis; income projection models; gravity and potential models; urban growth models. *Spring*. Knox.
- 199 HONORS SEMINAR IN URBAN STUDIES (3). An intensive inquiry into the subject matter and methods of investigation of the several social science disciplines as these relate to the study of cities, urban problems and the formulation of national policy. Members will develop their own analytical skills through independent research projects. *Spring*. Stegman.

DEPARTMENT OF CLASSICS

GEORGE KENNEDY, *Chairman*

CLASSICAL ARCHAEOLOGY

- 40 ANCIENT CITIES (3). An introduction to classical archaeology through study of a representative city of each century from 700 B.C. to 200 A.D. *Spring*. Richardson.
- 85 ARCHAEOLOGY OF THE BIBLE (3). Biblical history in the light of excavations in Palestine and the ancient Near East. The art and civilization of the peoples of the Old Testament. *One semester*.
- 91 ARCHAEOLOGY OF THE NEAR EAST (3). The art and architecture of Egypt, Mesopotamia, and the rest of the ancient Near East. *One semester*.
- 92 GREEK ARCHAEOLOGY (3). The historical development of the art of Greece from the Bronze Age through the historical period. Greek architecture, painting, and the other arts. *Fall*. Brown.
- 94 ARCHAEOLOGY OF ITALY (3). The historical development of the Italian peninsula as seen in its physical remains with emphasis on Etruscan and Roman sites. *Spring*. Richardson.
- 176 ROMAN CIVILIZATION (3). *One semester*.
- 190 GREEK ARCHITECTURE (Art 190) (3). *Fall*. Koepfel.
- 191 ARCHITECTURE OF ETRURIA AND ROME (Art 191) (3). *Spring*. Koepfel.
- 192 GREEK SCULPTURE (Art 192) (3). *Fall*. Mrs. Immerwahr.
- 193 GREEK PAINTING (Art 193) (3). *Spring*. Mrs. Immerwahr.
- 194 GREEK TOPOGRAPHY (Art 194) (3). *Spring*. Koepfel.
- 195 ETRUSCAN CIVILIZATION (Art 195) (3). *Fall*. Richardson.
- 196 ROMAN SCULPTURE (Art 196) (3). *Spring*. Koepfel.
- 197 ROMAN PAINTING (Art 197) (3). *Fall*. Richardson.
- 198 AEGEAN CIVILIZATION AND ITS NEAR EASTERN BACKGROUND (Art 198) (3). *Spring*. Mrs. Immerwahr.

CLASSICS IN ENGLISH

(Courses Not Requiring a Reading Knowledge of the Greek or Latin Language)

The following courses in classical literature and civilization are especially designed to supply the necessary foundation for those who, without a reading knowledge of the ancient languages, wish a broader culture, or plan to specialize in modern literature, history, the arts, etc. When properly approved, they will be allowed to count as part of the major requirement in other departments.

- 30 CLASSICAL MOTIFS IN WORLD LITERATURE (Comparative Literature 30) (3). Study of a recruiting motif, such as the hero on a journey, as it appears in important Greek and Latin works, with comparative examples from medieval and modern literature, as an introduction to the nature and spirit of the Classics. *Fall and spring*. Reckford.
- 33 THE AGE OF PERICLES (3). An introduction to classical civilization through study of its most important period in Greece. Attention to history, literature, philosophy, and art. Two lectures, one discussion section. *Fall*. Stadter.
- 34 THE AGE OF AUGUSTUS (3). An introduction to classical civilization through study of its most important period in Rome. Attention to history, literature, philosophy, and art. Two lectures, one discussion section. *Spring*. Houston.
- 51 TOPICS IN CLASSICAL STUDIES (3). Students may suggest to the chairman of the Department topics for individual or group study. Advanced arrangements required. *Both semesters*.
- 61 HOMER AND THE HEROIC AGE OF GREECE (3). For juniors and seniors. The Iliad, the Odyssey, Hesiod, heroic and oral poetry. The archaeology of Homeric Greece, the study and influence of the Homeric poems in modern times. *Fall*. Michael.
- 62 THE TRAGIC DIMENSION IN CLASSICAL LITERATURE (3). For juniors and seniors. The nature of the tragic and the function of tragic drama. The development and sources of Greek tragedy. Aristotle's *Poetics*. Roman tragedy. *Spring*. Immerwahr.
- 63 FOURTH CENTURY GREECE (3). Ethics, politics, and aesthetics as seen in the writings of Plato, Aristotle, Demosthenes, and Menander; Greek art in the fourth century; the career and influence of Alexander the Great; the formation of the Hellenistic states. *One semester*. Sider.
- 64 STUDIES IN THE LATIN BACKGROUNDS OF ENGLISH LITERATURE (3). Study of Roman writers influential on English literature in a particular period to be announced in advance. *Spring*. Packard.
- 75 GREEK CIVILIZATION (3). The achievements of the ancient Greeks and their contributions to the modern world in art, architecture, medicine, science, politics, education, theatre, religion, etc. *Spring*. Koepfel.
- 76 ROMAN CIVILIZATION (3). Roman public and private life, manners, and ideals; buildings, living conditions, commerce, religion, government, art, etc. *Fall*. Koepfel.

- 77 GREEK MYTHOLOGY (3). An introduction to mythology, followed by a study of the various cycles of myths which developed in ancient Greece. Illustrations from sculpture and vase-paintings. *Spring*. Koeppel, Sider.
- 103 GREEK AND ROMAN EPIC (Comparative Literature 103) (3). Reading of ancient epics, with emphasis on Homer and Virgil. Structure of the poems, history of epic as a literary form, the poems as expressions of the spirit of their ages. *Fall*. West.
- 107 GREEK DRAMATIC LITERATURE (Comp. Lit. 107) (3). Reading of about fifteen Greek plays. Origin and growth of the Greek theatre and drama; Aristotle's *Poetics*; literary quality of the plays; religious, social, and political ideas of the fifth century B.C. *Spring*. Sider.
- 109 GREEK AND ROMAN HISTORICAL LITERATURE (Comp. Lit. 103) (History 109) (3). The study in English translation of selections from Herodotus, Thucydides, Livy, Tacitus, and others with consideration of their literary qualities and their reliability as historians. *Fall*. Bradley, Strodter.
- 111 CLASSICAL RHETORIC (Comp. Lit. 111) (Speech 111) (3). Lectures on the nature, development, and influence of Greek and Roman rhetoric with class discussion of important rhetorical treatises and illustrations from the Attic orators and the speeches of Cicero read in English translation. *One semester*. Kennedy.
- 114 GREEK AND ROMAN COMEDY (3). A comparative study of the surviving works of Aristophanes, Menander, Plautus, and Terrence, with attention to aspects of ancient production and influence on modern comedy. *Spring*. Michael.
- 121 GREEK PHILOSOPHICAL LITERATURE (3). An examination of major Greek philosophers, read in English translation, in the context of Greek intellectual history and civilization. *Spring*. Sider.

GREEK

Students interested in an undergraduate major in Greek or in a combined major in Latin and Greek should consult the Department of Classics and obtain a copy of the bulletin "Information for Classics Majors." For Greek as satisfying the language requirement for the A.B. degree see "General College."

- 1,2 ELEMENTARY GREEK (3 each). *Fall and spring*. Sider, Houston.
- 1-2 ELEMENTARY GREEK (6). Permission of the instructor required. Combined. *Spring*. Brown.
- 3,4 INTERMEDIATE GREEK¹ (3 each). *Fall and spring*. Immerwahr, Sider.
- 14 ELEMENTARY GREEK (3). For graduate students. *One semester*.
- 21 ADVANCED GREEK (3 each). Prerequisite, Greek 4 or equivalent.

1. Either of these courses may be taken separately for elective credit.

- 22 *Fall and spring.* Packard, Reckford.
- 88 GREEK NEW TESTAMENT (3). Prerequisite, Greek 3 or equivalent. *Spring.* Stadter.
- 97 HONORS COURSE (6). *Fall and spring.* Staff.
- 98
- 107 GREEK COMPOSITION (3). Prerequisite, Greek 21. *Spring.* Stadter.
- 108 EARLY GREEK POETRY (3). Prerequisite, Greek 21. Reading in the Homeric poems, Hesiod, the *Homeric Hymns*, or the elegiac and lyric poets. *Fall.* Brown.
- 109 GREEK LITERATURE OF THE FIFTH CENTURY (3). Prerequisite, Greek 21. Reading in Aeschylus, Sophocles, Euripides, Aristophanes, Herodotus, or other writers. *One semester.* Reckford.
- 110 GREEK LITERATURE OF THE FOURTH CENTURY (3). Prerequisite, Greek 21. Reading in Xenophon, Plato, Aristotle, or other writers. *One semester.* Sider.
- 158 GREEK NEW TESTAMENT (3). Prerequisite, Greek 21 or equivalent. *Spring.* Stadter.

LATIN

Students interested in an undergraduate major in Latin or a combined major in Latin and Greek should consult the department by the last semester of their sophomore year. A minimum of six courses is required in addition to Latin 21. For Latin as satisfying the language requirement for the A.B. degree see "General College."

- 1-2 ELEMENTARY GREEK (3 each). *Fall and spring.* Sider, Houston.
- 1-2 ELEMENTARY LATIN (3 each). *Fall and spring.* Staff.
- 3X INTERMEDIATE LATIN (3). For students who have had two years of Latin in high school but need review. The course begins with a thorough review of elementary Latin. *Fall and spring. Five hours a week.* Staff.
- 3-4 INTERMEDIATE LATIN (3 each). 3: Cicero. 4: Livy and introduction to poetry. Freshman and sophomore elective. *Fall and spring.* Staff.
- 14 RAPID READING IN LATIN (3). May be taken with or without credit by those who wish to gain or refresh ability to read Latin prose. Class needs will determine selection of authors. *One semester.* Staff.
- 21 ADVANCED LATIN (3). Prerequisite, three of four units of high school Latin or Latin 3-4. Freshman and sophomore elective. Reading in Virgil's *Aeneid*. *Fall and spring.* Staff.
- 22 CATULLUS (3). Prerequisite, three or four units of high school Latin or Latin 3-4. Freshman and sophomore elective. *Fall and spring.* Packard, Michael.

- 51 CICERO'S LETTERS (3). Prerequisite, Latin 21. *One semester.* Houston.
- 52 ROMAN SATIRE (3). Prerequisite, Latin 21. *Fall.* Houston.
- 53 LATIN LYRIC POETRY (3). Prerequisite, Latin 21. *Spring.* Houston.
- 54 THE ROMAN HISTORIANS (3). Prerequisite, Latin 21. *Spring.* Houston.
- 55 PLAUTUS AND TERENCE (3). Prerequisite, Latin 21. *One semester.* Stadter.
- 56 OVID (3). Prerequisite, Latin 21. *Fall.* Otis.
- 57 LUCRETIUS (3). Prerequisite, Latin 21. *One semester.* Sider.
- 58 VIRGIL (3). Prerequisite, Latin 21. *One semester.* Brown.
- 59 PETRONIUS (3). Prerequisite, Latin 21. *One semester.* Koepfel.
- 60 PLINY'S LETTERS (3). Prerequisite, Latin 21. *One semester.* Koepfel.
- 71 COURSE FOR TEACHERS (3). Prerequisite, Latin 21. *Fall.* Packard.
- 72 LATIN COMPOSITION (3). Prerequisite, Latin 21. *Spring.* Bradley.
- 81 LATIN LITERATURE FROM THE BEGINNINGS TO THE AUGUSTAN AGE (3). Lectures and discussion of the development of Latin literature. Reading of selected works. Prerequisite, Latin 21. *Fall.* Michael.
- 82 LATIN LITERATURE FROM THE AUGUSTAN AGE TO THE AGE OF HADRIAN (3). Lectures and discussion of development of Latin literature. Reading of selected works. Prerequisite, Latin 81 or consent of instructor. *Spring.* Kennedy.
- 97 HONORS COURSE (6). *Fall and spring.* Staff.
- 98
- 114 POETS OF THE REPUBLIC (3). Prerequisite, Latin 21. *One semester.* Otis.
- 115 PROSE WRITINGS OF THE REPUBLIC (3). Prerequisite, Latin 21. *One semester.* Broughton.
- 123 PROSE WRITINGS OF THE EMPIRE (3). Prerequisite, Latin 21. *One semester.*
- 124 POETS OF THE EMPIRE (3). Prerequisite, Latin 21. *One semester.* Kennedy.
- 130 MEDIEVAL LATIN (3). Prerequisite, Latin 21. Reading of selections from representative writers in prose and poetry. *Spring.* Marti.
- 131 RENAISSANCE HUMANISM AND THE LATIN TRADITION (Comparative Literature 131) (3). Prerequisite, Latin 21. Topics in the evolution of Humanism from the twelfth century school of Chartres through Petrarch to Erasmus, including the transmission and assimilation of ancient texts; readings in Latin from a variety of writers. *Fall.* Scaglione.

CURRICULUM IN COMPARATIVE LITERATURE

WILLIAM J. DESUA, *Chairman*

The Curriculum in Comparative Literature offers an opportunity to explore the works of the great figures of Western literature as well as the interrelations between the various national literatures, thereby enabling students to acquire a particularly broad and liberal education. Sophomores planning to major in Comparative Literature are urged to take the two-semester Great Books course to fulfill part of the General College humanities requirement. An undergraduate major consists of eight courses, several of which should be in the Classics (e.g. 30, 61, 62, 107, 109), and at least two selected from the Comparative Courses listed below (131 through 185). The remaining courses for the major may be chosen from either the courses in English translation or the Comparative Courses, but students are also strongly urged to take at least two additional allied courses in a national literature in the original foreign language close to the 100 level. Students planning a major in Comparative Literature must consult Dr. DeSua at the beginning of their junior year and each semester thereafter.

LITERATURE IN ENGLISH TRANSLATION

- 21 GREAT BOOKS: MEDIEVAL, RENAISSANCE, BAROQUE AND NEO-CLASSICAL (3). Selected readings from Western literature concentrating upon significant themes, genres or movements, including authors such as Dante, Boccaccio, Rabelais, Montaigne, Cervantes, Racine and Moliere. *Fall*. Staff.
- 22 GREAT BOOKS: LITERARY MASTERPIECES FROM 1700 TO THE PRESENT (3). Selected readings from Western literature concentrating upon significant themes, genres or movements, including authors such as Voltaire, Goethe, Manzoni, Stendhal, Balzac, Flaubert, Tolstoy, Dostoyevsky, Pirandello, Mann, etc. *Spring*. Staff.
- 30 CLASSICAL MOTIFS IN WORLD LITERATURE (3). Study of a recurring motif such as the hero on a journey as it appears in important Greek and Latin works, with comparative examples from medieval and modern literature as an introduction to the nature and spirit of the classics. *Fall and spring*. Reckford.
- 61 HOMER AND THE HEROIC AGE OF GREECE (3). For juniors and seniors. The *Iliad*, the *Odyssey*, Hesiod, heroic and oral poetry, the archaeology of Homeric Greece, the study and influence of the Homeric poems in modern times. *One semester*. West.
- 62 THE TRAGIC DIMENSION IN CLASSICAL LITERATURE (3). For juniors and seniors. The nature of the tragic and the function of tragic drama. The development and sources of Greek tragedy. Aristotle's *Poetics*. Roman tragedy. *One semester*. Immerwahr.
- 63 LITERARY ASPECTS OF THE BIBLE (Religion 63). (3). The Old and New Testament will be taken up in alternate years. *Spring*. Howell.

- 64 STUDIES IN THE LATIN BACKGROUNDS OF ENGLISH LITERATURE (3). Study of Roman writers influential on English literature in a particular period to be announced in advance. *One semester*. Reckford.
- 70 RUSSIAN PROSE LITERATURE OF THE NINETEENTH CENTURY (3). Pushkin, Gogol, Turgenev, Dostoevski, and Tolstoi. *Fall*. Debreczeny.
- 72 RUSSIAN LITERATURE FROM CHEKHOV TO THE REVOLUTION (3). Literary situation and authors of 1880-1917, with emphasis on Chekhov and the Symbolists. Lectures and readings in English; some readings in Russian for majors. *Fall*. Mihailovich.
- 74 RUSSIAN LITERATURE IN THE SOVIET PERIOD (3). A survey of influential Russian writers and literary problems from the Revolution to the present. Lectures and readings in English, with selected readings in Russian for Russian majors. *Spring*. Mihailovich.
- 81 THEATRE HISTORY AND LITERATURE FROM THE RENAISSANCE TO THE AGE OF REALISM (3). Open to juniors and seniors, a survey of theatre practice and writing from the Renaissance to 1880. *Spring*. Whitty.
- 82 THEATRE HISTORY AND LITERATURE FROM 1880 TO THE PRESENT (3). A survey of the history and literature of the modern theatre from realism and the well-made play to the theatre of the absurd. *Fall*. Rogers.
- 103 GREEK AND ROMAN EPICS (3). Reading of the ancient epics, with emphasis on Homer and Virgil. Structure of the poems, history of the epic as a literary form, the poems as expressions of the spirit of their ages. *Fall*. West.
- 107 GREEK DRAMATIC LITERATURE (3). Reading of about fifteen Greek plays. Origin and growth of the Greek theatre and drama: Aristotle's *Poetics*; literary quality of the plays; religious, social, and political ideas of the fifth century B.C. *Spring*. Reckford.
- 109 GREEK AND ROMAN HISTORICAL LITERATURE (3). The study in English translation of selections from Herodotus, Thucydides, Livy, Tacitus, and others, with consideration of their literary qualities and their reliability as historians. *Spring*. Allen.
- 111 CLASSICAL RHETORIC (3). Development and influence of Greek and Roman rhetorical theory with illustrations from the Attic orators and speeches of Cicero. *Fall*. Kennedy.
- 114 GREEK AND ROMAN COMEDY (3). A comparative study of the surviving works of Aristophanes, Menander, Plautus, and Terence, with attention to aspects of ancient production and influence on modern comedy. *Spring*. Stadter.
- 117 CERVANTES (3). A study of Cervantes' *Don Quixote* and the *Exemplary Novels*. Not open to graduate majors in Romance Languages. *Fall*. Stoudemire.
- 121 ITALIAN RENAISSANCE LITERATURE (3). The major authors of the Italian Renaissance with special attention given to the works of Petrarch, Boccaccio, Machiavelli, Castiglione, Ariosto, and Tasso. Not open to graduate majors in Romance Languages. *Spring*. Scaglione.

- 122 MODERN ITALIAN LITERATURE (3). The major prose writers of modern Italian literature with special attention given to Manzoni, Verga, Pirandello, Svevo, Moravia, Lampedusa, and other contemporary novelists. Not open to graduate majors in Romance Languages. *Spring*. DeSua, Illiano.
- 133 DANTE (3). The beginning of Italian literature. *The Vita Nuova* and *The Divine Comedy*. Not open to graduate majors in Romance Languages. *Spring*. DeSua.
- 137 SURVEY OF GERMAN LITERATURE (3). An outline emphasizing the masterpieces around 1200, the works of the preclassic and classic periods, and contemporary literature. (Not offered in 1969-1970). *Fall*. Reichert.
- 142 PHILOSOPHY IN LITERATURE (3). A study of selected literary classics from ancient times to the present, emphasizing changing approaches to such perennial problems as the nature and destiny of man, evil, freedom, and tragedy. *Fall*. Shea.
- 143 CHINESE LITERATURE IN TRANSLATION (3). A survey of Chinese literature from the classic period to the modern period. *Fall*. Staff.
- 144 CHINESE LITERATURE IN TRANSLATION (3). Selected topics in Chinese literature concentrating on one period or one genre. *Spring*. Staff.
- 146 INTRODUCTION TO FOLKLORE (3). A survey of the primary genres; folk song narrative riddle proverb custom and belief, drama and art, an investigation of the history problems and issues of folklore. *Fall*. Zug.
- 155 GOETHE (3). Goethe's life and work placed against the background of European classicism and romanticism and the Napoleonic Wars. *Fall*. Friederich, Schweitzer.
- 158 THE GOLDEN AGE OF DUTCH LITERATURE (RENAISSANCE AND BAROQUE) (3). Prerequisite, permission of the instructor. Masterpieces of Dutch literature of Renaissance and mainly Baroque; literary relations with German and other literatures will be stressed. *Spring*. Tax.
- 187 INTRODUCTION TO MODERN SCANDINAVIAN LITERATURE (3). Prerequisite, junior standing or higher. An introduction to nineteenth-century and twentieth-century Scandinavian literature (in translation) with particular reference to the work of Ibsen and Strindberg, and modern fiction. *Fall*. Bergholz.

COMPARATIVE COURSES

- 95 SPECIAL TOPICS IN COMPARATIVE LITERATURE (3). *Fall and spring*. Staff.
- 97 HONORS COURSE (3). Required of all students reading for honors in Comparative Literature. *Fall and spring*. DeSua.
- 131 RENAISSANCE HUMANISM AND THE LATIN TRADITION (3). Prerequisite, Latin 21 or equivalent. Topics in the evolution of Humanism from the Twelfth Century School of Chartres through Petrarch to Erasmus, including the transmission and assimilation of ancient texts; reading in Latin from a variety of writers. *Fall*. Scaglione.

- 161 CONCEPTS AND PERSPECTIVES OF THE TRAGIC (3). Prerequisites, reading knowledge of French or German. Ancient and modern versions of tragic themes, tracing the transformations of the myths in the light of emerging concepts of tragedy. *Spring*. Falk.
- 170 THE MIDDLE AGES (3). The literature of the European Middle Ages, in Latin and the vernacular languages, from Boethius to Dante. *Fall*. Wenzel.
- 175 RENAISSANCE (3). The period from Dante to the death of Queen Elizabeth with special emphasis on the Reformation and on Italian influences upon French, Spanish, English and German letters. *Fall*. Friederich.
- 176 BAROQUE (3). The period from the Church Council of Trent to the death of Calderón with special emphasis on Spanish influences upon French, German and English letters. *Spring*. Friederich.
- 177 CLASSICISM AND ENLIGHTENMENT (3). The period from the French school of 1660 to the death of Voltaire with its reverberations especially in England and Germany. *Spring*. Friederich.
- 178 PRE-ROMANTICISM (3). From the Anglo-German beginnings to the eve of the French Revolution. *Fall*. Mayo.
- 180 ROMANTICISM (3). Prose and poetry of representative Romanticists in Germany, Britain, France, and America, with special consideration of the manifestoes and critical writings. *Spring*. Mayo.
- 181 REALISM (3). The main Realist novelists and dramatists of 19th-century Europe and America, with some attention to the theory of Naturalism and its international reverberations. *Fall*. DeSua.
- 182 SYMBOLISM (3). The poetry and poetics of French symbolism and its international counterparts such as English Aestheticism and Italian Decadence. *Spring*. DeSua.
- 183 TWENTIETH-CENTURY POETRY (3). The poetry and theories of significant modern movements in Europe and America: Dada, Surrealism, Neo-Symbolism, Modernism, Futurism, Hermeticism, Imagism, Expressionism. *Fall*. DeSua.
- 184 THE DRAMA FROM IBSEN TO BECKETT (3). The main currents of European drama from the end of the nineteenth century to the present. *Fall*. Falk.
- 185 APPROACHES TO THE NOVEL (3). The narrative techniques of selected works by Proust, Joyce, Kafka, Mann, Faulkner, Sartre, Camus, and authors identified with contemporary realism. *Fall*. Falk.

DEPARTMENT OF COMPUTER AND INFORMATION SCIENCE

FREDERICK PHILLIPS BROOKS, JR., *Chairman*

The Department of Computer and Information Science offers instruction and performs research in the theory, techniques, and applications of automatic information processing and computing. Although primarily a graduate department, it offers

basic courses to advanced undergraduates majoring in other fields and to those preparing to do graduate work in Computer and Information Science.

The introductory courses in computer use are Computer and Information Science 16, 17, 18, 19. One of these is prerequisite to all other courses in this discipline and is open to all undergraduates. We especially urge that this be taken in the freshman or sophomore year. These courses have essentially the same content, but differ in that examples, exercises, and projects are specialized according to the field of computer application (mathematics, business, social sciences or language).

Many undergraduates, especially mathematics, business, and science majors, are interested in acquiring bachelor-level vocational competence in computer use. For mathematics and science majors, we recommend Computer and Information Science 16, 120, and 150 as a minimum sequence for vocational qualification. For business majors, we recommend Computer and Information Science 17, 106 or 120, and 135 as a minimum sequence. Either of these sequences can be substantially strengthened by adding Computer and Information Science 140.

The basic preparation for advanced work in this field is Computer and Information Science 120 and 140, the latter course in programming systems and advanced techniques. Elementary linguistics is also recommended, as is mathematical preparation through calculus and modern algebra, such as Computer and Information Science 125.

- 16 INTRODUCTION TO COMPUTER USE IN SCIENCE AND MATHEMATICS (3). Prerequisite, Mathematics 2 or Mathematics 15 or equivalent. Algorithms and their design. Capabilities and limitations of computers. Use of digital computers in the natural sciences. Basic computer programming skills using the PL/I language. *Two class hours per week and outside laboratory. Fall and spring. Staff.*
- 17 INTRODUCTION TO COMPUTER USE IN BUSINESS (3). Algorithms and their design. Capabilities and limitations of computers. Use of digital computers in business administration. Basic computer programming skills using the PL/I language. *Two class hours per week and outside laboratory. Fall and spring. Staff.*
- 18 INTRODUCTION TO COMPUTER USE IN SOCIAL SCIENCES (3). Algorithms and their design. Capabilities and limitations of computers. Use of digital computers in the social sciences. Basic computer programming skills using the PL/I language. *Two class hours per week and outside laboratory. Fall and spring. Staff.*
- 19 INTRODUCTION TO COMPUTER USE IN LANGUAGE PROCESSING (3). Algorithms and their design. Capabilities and limitations of computers. Use of digital computers in language. Basic computer programming skills using the PL/I language. *Two class hours per week and outside laboratory. Fall and spring. Staff.*

- 16A INTRODUCTION TO COMPUTER USE IN SCIENCE AND MATHEMATICS (3). Prerequisite or corequisite, Mathematics 31. Algorithms and their design. Capabilities and limitations of computers. Use of digital computers in mathematics and the natural sciences. Basic computer programming skills using the PL/I language. *Two class hours per week and outside laboratory. Fall and spring.* Elder and Magó.
- 103 INFORMATION SYSTEMS IN LANGUAGE RESEARCH (Library Science 103) (Sociology 103) (3). Prerequisites, one of Computer and Information Science 16-19, preferably 19. Concepts of information and information processing as they relate to language research in the humanities and social sciences. Hardware and software systems for language research. Programming projects required. *Fall and spring.* Dillon and Koubourlis.
- 106 DATA PROCESSING TECHNIQUES (3). Prerequisite, one of Computer and Information Science 16-19. Data processing and reduction as used in the social sciences and business. Data representation, storage and manipulation, with emphasis on large files. Programming packages and special purpose programming languages. *Fall and spring.* Foley and Weiss.
- 120 DATA REPRESENTATION AND MANIPULATION (Linguistics 105) (3). Prerequisites, one of Computer and Information Science 16-19 or equivalent experience, at least 6 hours of mathematics, and (except by permission of the instructor) junior standing. Representation of elementary data and their manipulation by assembler language coding. Elementary switching circuits, organization of computers, and execution of machine language instructions. Data structures and searching methods. *Fall and spring.* Calingaert and Pizer.
- 125 MATHEMATICAL STRUCTURES IN INFORMATION SCIENCE (3). Prerequisite, 2 semesters of calculus. An introduction to logic and algebra germane to computer and information science. Formal models of computation. Introduction to theory of automata and formal languages. *Fall.* Stanat.
- 128 INTRODUCTION TO DESCRIPTIVE LINGUISTICS: GRAMMAR (Linguistics 130) (3). *Fall.* Anderson.
- 132 STOCHASTIC METHODS OF OPERATIONS RESEARCH (Statistics 180) (3). Prerequisites, introductory course in probability, integral calculus. Queueing theory (Markov models, birth and death, busy-period distribution), decision making under uncertainty (Bayesian, admissible and minimax decision rules), game theory (minimax theorem), Monte Carlo and other simulation techniques, inventory models. *Fall and spring.* Walter Smith.
- 133 DETERMINISTIC METHODS OF OPERATIONS RESEARCH (Statistics 181) (3). Prerequisites, matrix algebra, integral calculus. An introduction to linear and nonlinear optimization models, including linear and dynamic programming, selected elements of nonlinear programming such as Kuhn-Tucker theory, and topics in network analysis. Applications to decision problems. *Fall and spring.* Gould.
- 135 DATA PROCESSING AND FILE MANAGEMENT (4). Prerequisite, Computer and Information Science 106 or 120. Manual, semi-automatic, and automatic systems for the routine processing of data. Accounting concepts and data-processing implications. Organization of sequential

and direct access files. Checking and control techniques. Students in small teams will study actual business applications and recommend data processing systems. *Three lecture and two laboratory hours. Spring.* Danziger.

- 138 STOCHASTIC ANALYSIS OF INFORMATION SYSTEMS (3). Prerequisite, Computer and Information Science 120. Stochastic modeling of computer networks and systems. Markov, semi-Markov and renewal processes applied to problems in time-sharing, data communication, file control and performance evaluation. (1971-1972 and alternate years.) *Fall.* Wallace.
- 140 PROGRAMMING SYSTEMS (3). Prerequisites, Computer and Information Science 120 and 125. Structure and design of programs which process programs. Assemblers, interpreters, compilers, generators, input-output control systems, supervisors. Formal programming languages, syntactic descriptions, symbolic functions, and manipulations. *Spring.* Elder.
- 145 SOFTWARE ENGINEERING LABORATORY (Formerly COMP 140L) (2). Prerequisite or corequisite, Computer and Information Science 140. Organization and scheduling of software engineering projects. Each team will design, code, and debug program components and synthesize them into a tested, documented program product. *Spring.* Brooks and Calingaert.
- 150 INTRODUCTION TO NUMERICAL METHODS (Mathematics 110) (3). May not be taken for credit in addition to Computer and Information Science 151-152. Prerequisites, programming and two semesters of calculus. Error and its propagation. Numerical approximation, interpolation, differentiation, integration. Computer solution of algebraic equations, matrices and systems of linear equations, ordinary differential equations. *Fall and spring.* Magó and Wallace.
- 151- NUMERICAL METHODS IN APPLIED MATHEMATICS (Mathematics 152 171-172) (3 each). May not be taken for credit in addition to Computer and Information Science 150. Prerequisites, calculus through differential equations, elementary linear algebra, and programming. A problem-oriented approach to applied mathematics emphasizing understanding of the generation and application of both analytical and numerical methods. Topics will include linear systems, approximation, solution to nonlinear, differential, and integral equations, transform analysis, and orthonormal systems. *Fall and spring.* Pizer.
- 160 INTRODUCTION TO AUTOMATIC DIGITAL CONTROL (4). Prerequisite, Computer and Information Science 120; corequisite, Computer and Information Science 150 or 151-152. Principles of servomechanisms, feedback, response speed, stability, realizability, accuracy. Digital control techniques, sampled-data systems. (1970-1971 and alternate years.) *Three lecture and two laboratory hours. Spring.* Wallace.
- 171 NATURAL LANGUAGE ANALYZERS (3). Prerequisite, one of Computer and Information Science 16-19 or passing programming examination. Physiological, psychological, syntactic and semantic models of natural language; emphasis upon implementation on the computer and related hardware of syntactic and semantic formalizations. (1970-1971 and alternate years.) *Spring.* Weiss.
- 172 INFORMATION RETRIEVAL (3). Prerequisite, one of Computer and Information Science 16-19. Study of information retrieval and ques-

tion answering techniques, including document classification, retrieval and evaluation techniques, handling of large data collections, and the use of feedback. *Spring*. Weiss.

- 178 PHILOSOPHY OF LANGUAGE (Philosophy 110) (Linguistics 110) (3). A study of important contemporary contributions in philosophy of language meaning, reference, and truth. *Fall*. Ziff.
- 184 COMPUTABILITY (3). Prerequisite, Mathematics 33. Introduction to computable functions. Turing machines, Post systems, recursive function theory, other equivalent systems. Church's thesis. Recursive and recursively enumerable sets. Gödel numbering. Nonstandard definitions of computability. (1970-1971 and alternate years.) *Spring*. Stanat.
- 186 SYMBOLIC LOGIC (Philosophy 101) (Linguistics 104) (3). Introductory. *Fall*. Resnik.
- 187 INTERMEDIATE SYMBOLIC LOGIC (Philosophy 111) (3). Presupposes propositional and quantificational logic as basis for further deductive development, with special attention to selected topics among the following: alternative systems, logical grammar of formalized languages, logical and semantical paradoxes, and foundations of mathematics. *Spring*. Snyder.
- 190 TOPICS IN COMPUTER AND INFORMATION SCIENCE (3). Prerequisite, Computer and Information Science 140. In 1970-1971 the topic will be optimization in computer system design. *Fall*. Wallace.

CREATIVE WRITING

See offerings in Department of Dramatic Art, Department of English and Department of Radio, Television, and Motion Pictures.

DEPARTMENT OF DRAMATIC ART

THOMAS M. PATTERSON, *Acting Chairman*

The Bachelor of Arts Program

The curriculum for the Bachelor of Arts degree in Dramatic Art is a two-year program, based upon the completion of the General College requirements¹ for this degree (see "General College," page 33) or the equivalent. The program is designed to provide instruction in the theory and practice of theatre and drama for students who wish to follow the traditional liberal arts curriculum with a major emphasis in this field.

Requirements for the A.B. Major: The candidate for the Bachelor of Arts degree in Dramatic Art must complete during the junior and senior years twenty courses, distributed as follows:

1. Dramatic Art 15, 51, and 59 are available as General College electives, and the student who intends to pursue the Bachelor of Arts program in Dramatic Art is urged to indicate these courses as electives in his General College program.

Major Courses (seven to ten)

Required (minimum of seven courses); 51m, 62, 64, 80, 150, or 81, 82 or 95, (195) and one other course in Dramatic Art. Elective: up to three additional courses in Dramatic Art.

Allied Courses

Five to eight courses in allied departments (Division of Humanities or Division of Fine Arts).

Non-allied Courses

Five to eight courses in non-allied departments (Division of Natural Sciences or Division of Social Sciences).

NOTE: The State of North Carolina does not grant a teacher's certificate in Dramatic Art. Therefore, Dramatic Art students wishing to prepare themselves for high school teaching and directing must choose a "double major" program, receiving a certificate in the second major of their choice, which may be selected from a wide variety of other departments in the University.

The Bachelor of Fine Arts Program

The curriculum for the Bachelor of Fine Arts degree in Dramatic Arts is a four-year academic program designed to provide (a) foundation courses in the theatre arts for students who intend to enter the professional theatre or related fields; (b) opportunity for the student to gain apprenticeship experience in the skills and practices of the theatre arts, with special emphasis in one area of his choice, namely Acting, Design-Technical, or Directing. The B.F.A. student must meet a minimum number of course requirements in the General College Curriculum (see "General College," page 35), and he must also take certain required major courses in the first two years. It is therefore necessary for the candidate for this degree to elect the B.F.A. program at the beginning of the freshman year.

The B.F.A. program in Dramatic Art is a rigorous one, highly demanding of the student's dedication, time and energy. Only those students with a clear commitment to enter the professional theatre should consider undertaking it.

Because of the extremely heavy course demands of this program, it is strongly recommended that the student plan on spending two summers in resident study at the University in addition to his four years of residence during the regular terms.

Requirements for the B.F.A. Major: The candidate for the B.F.A. degree in Dramatic Art must pursue the following four-year program:

Freshman Year: Fall Semester: English 1, foreign language 3 (or 1), or Mathematical Sciences, physical education, and the following Dramatic Art courses: 40, 44, 56, 64a.



GRAHAM MEMORIAL, HOME OF DRAMATIC ART ON THE CAMPUS.

Spring Semester: English 2, foreign language 4 (or 2), or Mathematical Sciences, physical education, and the following Dramatic Art courses: 41, 45, 57, 64b.

During the spring semester of his freshman year the student's work will be evaluated by the staff of the Department of Dramatic Art to determine whether the candidate will be allowed to continue in the B.F.A. program or advised to change to another program of study, e.g., the B.A. program. At this time the B.F.A. student must elect either the curriculum in Acting, in Design-Technical, or in Directing for the remainder of his program.

During his remaining year in the General College and his two years in the College of Arts and Sciences, the student will be expected to complete the following courses:

Three courses in the social sciences; two courses in the natural sciences (one of which must be a laboratory science); three courses in the humanities and fine arts; and a foreign language or mathematical science. In addition, he will be ex-

pected to complete a sufficient number of allied and non-allied elective courses to satisfy the requirements of the College of Arts and Sciences.

In the Department of Dramatic Art: During this three-year period the student will be expected to complete all of the Dramatic Art courses in whichever of the following programs he elects to pursue:

Acting Curriculum: 42a-f, 54a-f, 55, 58a-f, 62, 63, 90, 80, 81, 82.

Design-Technical Curriculum: 55, 62, 63, 64c, 65a-c, 80, 81, 82, 90, 100, 166, 167, 168. In addition, the Design-Technical major will be expected to take the following Art courses as his allied electives: Art 30, Art 44, Art 46, Art 49.

Directing Curriculum: 54a,b, 55, 62, 63, 64c, 65a-d, 80, 81, 82, 90, 100, 166, 167, 168.

Admission of Freshman Women

A limited number of women may be admitted each academic year at freshman level as majors in the B.F.A. program in Dramatic Art. Application for admission should be made directly to the Admissions Office, and qualified applicants will be referred to the Department of Dramatic Art for final recommendation.

- 10 PLAY ANALYSIS (3). Open only to freshmen and sophomores. An introductory study of play structure and its relationship to theatrical production. (Not offered in 1970-71.) *Fall and spring*.
- 15 INTRODUCTION TO THE THEATRE (3). Open only to freshmen and sophomores. Analysis and demonstration of the theatre as a composite form of art. *Fall and spring*. Koch.
- 40 VOICE TRAINING I (3). Open only to majors in Dramatic Art. Fundamental principles underlying the effective use of the voice and speech in performance. *Fall*. Barnett.
- 41 VOICE TRAINING II (3). Open only to majors in Dramatic Art. Prerequisite, Dramatic Art 40. A continuation of Dramatic Art 40. *Spring*. Barnett.
- 42a-f APPLIED VOICE TRAINING (1). Limited to B.F.A. candidates. Prerequisites, Dramatic Art 40 and 41. Individual instruction in stage speech, focusing on individual problems of voice and articulation. Will normally be repeated for credit by students in the acting curriculum. *Fall and spring*. Barnett.
- 44 INTRODUCTION TO ACTING TECHNIQUES I (3). Open only to majors in Dramatic Art. *Nine studio hours a week, fall*. Graves; Koch.
- 45 INTRODUCTION TO ACTING TECHNIQUES II (3). Open only to majors in Dramatic Art. Prerequisite, Dramatic Art 44. *Nine studio hours a week, spring*. Graves; Koch.

- 51 ACTING (3). General College elective, open to juniors and seniors. Introductory course in the principles and practice of stage performance. *Fall and spring*. Staff.
- 51M ACTING (3). Open to Dramatic Art majors in the Bachelor of Arts program only. Introductory course in the principles and practice of stage performance. *Fall*. Koch.
- 52M ADVANCED ACTING (3). Open only to Dramatic Art majors in the Bachelor of Arts program. Prerequisite, Dramatic Art 51M. A continuation of Dramatic Art 51M. *Spring*. Koch.
- 54 ADVANCED ACTING (6). Limited to B.F.A. candidates. Prerequisite, Dramatic Art 45. Application, under supervision, of the techniques of the actor in major productions and regularly scheduled laboratory meetings. It includes all advanced instruction in speech, movement, and acting. Will normally be repeated for credit by students in the acting and directing curricula. *Fifteen studio hours a week, fall and spring*. Barnett, Fitz-Simons, Graves, Koch.
- 55 STAGE MAKEUP (2). Open only to majors in Dramatic Art. An introduction to the fundamental principles and techniques of theatrical makeup. *Six studio hours a week, spring*. Davis.
- 56 STAGE MOVEMENT I (2). Open only to majors. An introduction to the basic elements of stage movement exclusive of dance, including: basic spatial relationships, notation, theatrical effectiveness, control, concentration. *Six studio hours a week, fall*. Fitz-Simons.
- 57 STAGE MOVEMENT II (2). Open only to majors in Dramatic Art. An introduction to the basic forms and disciplines of dance movement, particularly as they apply to the work of the actor. *Six studio hours a week, spring*. Fitz-Simons.
- 58a-f APPLIED STAGE MOVEMENT (1). Limited to B.F.A. candidates. Prerequisite, Dramatic Art 57. A continuing program of personal development in stage movement and dance. Will normally be repeated for credit by students in the acting curriculum. *Four studio hours a week, fall and spring*. Fitz-Simons.
- 59 THE DANCE (3). General College elective, open to juniors and seniors. Foundation course in the history of the dance and its relationships to the other arts. Lectures and laboratory training in basic forms of lyric and narrative movement. *Fall and spring*. Fitz-Simons.
- 62 DIRECTING I (3). Permission of the instructor required. An introductory course in the principles of stage directing. An undergraduate student may not offer both 62 and 190 for degree credit. *Fall*. Graves, Rezzuto.
- 63 DIRECTING II (3). Open only to majors in Dramatic Art. Prerequisite, Dramatic Art 62. A continuation of Dramatic Art 62. *Spring*. Graves.
- 64abc TECHNICAL METHODS (3 each). Introduction to equipment and procedures in the design and execution of plans for the scenery, lighting and costuming of theatre presentations. One unit will concentrate on scenery, one unit on lighting, and one unit on costuming. All three units will be handled as a single class each semester. Will normally be repeated for credit by students in the B.A. and B.F.A. curricula. *One*

lecture and ten laboratory hours per week, plus assigned crew work with Carolina Playmaker productions, fall and spring. Davis, Pearlman, Rezzuto.

- 65a-d TECHNICAL PROJECTS (1-3). Limited to juniors and seniors in the design-technical or directing curricula in the B.F.A. program. Intensive project work in scenery, costuming, lighting, and/or directing. Will normally be repeated for credit. *Fall and spring.* Staff.
- 80 THEATRE HISTORY AND LITERATURE FROM THE EARLIEST TIMES TO THE RENAISSANCE (3). General College elective, open to juniors and seniors. Survey of theatre practice and writing from the Greek through the middle ages. *Fall.* Jurgensen.
- 81 THEATRE HISTORY AND LITERATURE FROM THE RENAISSANCE TO THE AGE OF REALISM (3). General College elective, open to juniors and seniors. Survey of theatre practice and writing from the Renaissance to 1880. *Spring.* Whitty.
- 82 THEATRE HISTORY AND LITERATURE FROM 1880 TO THE PRESENT (3). General College elective, open to juniors and seniors. Survey of the history and literature of the modern theatre from realism and the well-made play to the theatre of the absurd. *Fall.* Rogers.
- 90 INTRODUCTION TO PROFESSIONAL PRACTICE (3). Open only to senior B.F.A. majors. An introduction to the current professional practices in the theatre, including contracts, agent relationships, production principles, union regulations, etc. *Spring.* Parker.
- 95 ENGLISH AND AMERICAN DRAMA OF THE TWENTIETH CENTURY (English 95) (3). A survey of movements and writers from 1900 to the present. *Fall and spring.*
- 97 COURSES FOR HONORS (6). Reading and preparation for essay and
- 98 other Honors projects. Staff.
- 100 TECHNICAL DIRECTION (3). Prerequisites, 64a-c, or equivalent technical practice in theatre production. An advanced study of the technical and engineering problems in production, and of the relation of theatre architecture to production methods. *Fall.* Pearlman.
- 150 SHAKESPEARE IN THE THEATRE (3). A study of the literary, stage history, and production problems of representative plays. *Fall.* Jurgensen.
- 155 PLAYWRITING (3). A practical course in the writing of the stage play. *Fall and spring.* Patterson, Seldon.
- 156 PLAYWRITING (3). The principles of dramatic construction and practice in the writing of one-act plays. *Fall and spring.* Patterson, Seldon.
- 157 PLAYWRITING (3). Prerequisite, Dramatic Art 155 or 156. The study and practice of the writing of the full-length play. *Spring.* Jurgensen.
- 166 SCENE DESIGN (3). Permission of the instructor required. General principles of visual design as applied to scenery for the theatre. Instruction in standard techniques of planning and rendering scene design. *Spring.* Rezzuto.

- 167 COSTUME DESIGN (3). Permission of the instructor required. A study of historical styles of dress as applied to costuming for the theatre. Instruction in standard techniques of planning and rendering costume designs. *Fall*. Davis.
- 168 LIGHTING DESIGN (3). Permission of the instructor required. General principles of lighting design as applied to the performing arts. Theory and instruction in standard techniques of lighting for the stage. *Spring*. Pearlman.
- 190 THEORY AND PRACTICE OF PLAY DIRECTING (3). Under special conditions, this course may be substituted for Dramatic Art 62 with permission of the Department. *Summer session only*.
- 192 SPECIAL STUDIES (3). Open only to majors in the Department of Dramatic Art. Permission of the instructor required. Special study of a selected area of theatre or drama. Basic elements of dramatic composition. (Not offered 1970-71.) *Spring*.
- 193 THE HISTORY OF ACTING AND DIRECTING (3). A study of the major theories from Aristotle to Brecht. *Spring*. Rogers.
- 195 ENGLISH AND AMERICAN DRAMA OF THE TWENTIETH CENTURY (English 195) (3). *Summer session only*.

DEPARTMENT OF ECONOMICS

DAVID MCFARLAND, *Chairman*

The Department of Economics offers courses leading to an A.B. degree with a major in economics through the College of Arts and Sciences. The M.A. and Ph.D. degrees in economics are offered through the Graduate School. Courses in economics are elected by and/or required of students in other departments and schools.

Undergraduate Major

Opportunities for Economics Majors: The courses leading to an A.B. degree with a major in economics comprise a large area of inquiry into the problems and structure of the economic segment of society. The curriculum available provides the opportunity to achieve one or more of the following objectives.

1. General education for intelligent citizenship with special emphasis upon the development of the understanding of the principles and problems of modern economic life.
2. Preparation for private employment. In pursuing this objective, supplementary courses in business administration may be selected and integrated with the student's program.
3. Preparation for governmental employment.

4. Preparation for postgraduate work leading to the degrees of M.A. and Ph.D. in economics.
5. Specialized combination undergraduate programs such as pre-law and international studies, and either of the ROTC programs available at the University.

Requirements: For the degree of A.B. with a major in economics:

1. Students should have completed the work of the General College, including Economics 31 and Economics 32 with grades of C or better in each course. In addition, Economics 70 may be taken as a General College elective. In mathematics, one calculus course and one probability course are required. These should be taken in the freshman year if possible. To fulfill this requirement Mathematics 21 and 22 are recommended; Mathematics 1, 2, and 15 are not acceptable.
2. In the College of Arts and Sciences a minimum total of twenty (20) courses (i.e., 60 semester hours) must be selected in accordance with the following distribution:
 - A. Seven (7) full semester courses in economics (in addition to Economics 31 and 32) including Economics 70, Economics 131 and Economics 132 are required and must be taken prior to the end of the junior year, preferably before taking other advanced economic courses. Eight (8) full semester courses in economics may be taken. If Economics 70 is taken as a General College elective, another economics course may be substituted for it as one of the required courses. The remaining four (4) or five (5) courses must be taken from at least three (3) of the following areas:
 - (1) Economics 91—Resources and Industries
Economics 111—International Resources and National Policy
 - (2) Economics 120—Location and Space Economy
Economics 121—Regional Science Techniques
Economics 122—Urban Economics
 - (3) Economics 135—Economic Development in the United States
Economics 136—Economic Development in Western Europe

- (4) Economics 140—Economics of Social Expenditures
Economics 141—Public Finance
Economics 143—Problems in State and Local Finance
- (5) Economics 145—Industrial Organization
Economics 146—Industrial Concentration and Public Policy
- (6) Economics 151—American Transportation System
Economics 152—Transportation as a Regulated Industry
Economics 153—Public Utilities
- (7) Economics 159—History of Economic Doctrines
- (8) Economics 161—International Economics
- (9) Economics 163—Economic Development
- (10) Economics 170—Fundamentals of Statistics
- (11) Economics 185—Economic Fluctuations
- (12) Economics 191—An Introduction to the Labor Problem
Economics 192—Collective Bargaining
Economics 193—History of the Labor Movement
Economics 194—Social Insurance
Economics 195—Human Capital and the Labor Market
- (13) Economics 196—Comparative Economic Systems
- (14) Economics 197—Government and Business

B. From six (6) to seven (7) full semester allied courses (18 to 21 semester hours) within the Division of Social Sciences are required. *With the permission of the Chairman of the Department*, a maximum of three (3) business administration courses with a grade of *C* or better on each may be counted as allied courses if they constitute a part of a well-developed and integrated program of study. The combined maximum number of courses in economics and business administration shall not exceed ten (10) (i.e., 30 semester hours).

C. From six (6) to seven (7) full semester non-divisional courses within the Divisions of Humanities, Fine Arts, and Natural Sciences are required.

3. Course distribution in 2 above can be summarized briefly as follows: The required distribution of twenty (20) College of Arts and Sciences courses is seven (7) courses in Economics; six (6) allied courses in the Division of Social Sciences; six (6) non-divisional courses from the Divisions of Fine Arts, Humanities and Natural Sciences; and one (1) additional course from any of the three areas.

Programs for Honors Work: A student may, as a result of distinguished work, be awarded a degree with Honors or Highest Honors. The details of this program of special studies are available from the Chairman of the Department.

NOTE: *Economics 31 and 32 or equivalents, are prerequisite to all other courses in Economics, except those Economics courses numbered under 100, Economics 91, and as otherwise indicated. For Economics majors, the grade of C or better must have been attained in Economics 31 and 32 or equivalents. Economics 61 with a grade of C or better may, under certain circumstances, be substituted for Economics 31 and 32.*

- 31 GENERAL ECONOMICS I (3). The organization and underlying principles of modern economic life. The production, exchange, distribution, and consumption of wealth, and auxiliary economic problems. *Fall and spring.* Staff.
- 32 GENERAL ECONOMICS II (3). The organization and underlying principles of modern economic life. The production, exchange, distribution, and consumption of wealth, and auxiliary economic problems. *Fall and spring.* Staff.
- 61 PRINCIPLES OF ECONOMICS (3). For juniors and seniors not majoring in economics or business administration; not open to students in the General College. The structure, functions, and underlying principles of modern economic life. May be used as general economics prerequisite for advanced courses if grade C or better is earned. *Fall and spring.* Mouzon.
- 70 ELEMENTARY STATISTICS (3). Prerequisites, Mathematics 1 or 15, and 2 or 31. Sources and collection of data, tabular and graphic presentation, averages, dispersion, time-series analysis, correlation, index numbers, reliability of statistics and tests of significance. *Fall and spring.* Staff.
- 91 RESOURCES AND INDUSTRIES (3). Not open to students in the General College. Survey by industry analysis of selected social and economic problems related to the appraisal and utilization of world resources. An international studies course. *Spring.* Mouzon.
- 98 HONORS COURSE (3). Directed readings in several fields of economics. Required of all candidates for graduation with honors in economics. *Fall.* Staff.
- 99 HONORS COURSE (3). Reading and preparation of an essay under

the direction of a member of the faculty. Required of all candidates for graduation with honors in economics. *Spring*. Staff.

- 111 INTERNATIONAL RESOURCES AND NATIONAL POLICY (3). International resource problems which necessitate United States policy decisions. National policy and objectives; production potentials; and international security. *Fall*. Mouzon.
- 120 LOCATION AND SPACE ECONOMY (City and Regional Planning 176) (3). The evaluation of models generalizing the effects of space on economic and social activity. *Fall*. Knox.
- 121 REGIONAL SCIENCE TECHNIQUES (City and Regional Planning (178) (3). The description, understanding and projection of income and employment variables within urban areas and regions. *Spring*. Knox.
- 122 URBAN ECONOMICS (3). Prerequisite, Economics 131 or equivalent. Economic analysis of urban growth, urban structure, and current urban problems: location theory, transportation and housing policy, racial issues, and the provision of urban services. *Fall or spring*. Knox.
- 131 INTERMEDIATE THEORY: PRICE AND DISTRIBUTION (3). The determination of prices and the distribution of income in a free-enterprise system. *Fall and spring*. Staff.
- 132 INTERMEDIATE THEORY: MONEY, INCOME AND EMPLOYMENT (3). An introduction to contemporary macroeconomic concepts and analysis. Topics include the level, fluctuations, and growth of national income, and monetary and fiscal policies designed to achieve economic goals. *Fall and spring*. Staff.
- 135 ECONOMIC DEVELOPMENT IN THE UNITED STATES (3). Principal factors governing American economic expansion since 1800. *Fall and spring*. Gallman, Orsagh.
- 136 ECONOMIC DEVELOPMENT IN WESTERN EUROPE (3). Main features of economic expansion under capitalism since 1700. *Fall and spring*. Gallman, Orsagh.
- 140 ECONOMICS OF SOCIAL EXPENDITURES (3). Theory and practice of public spending on health, education, welfare and related areas. Minority group problems considered. *Fall*. Staff.
- 141 PUBLIC FINANCE (Political Science 191) (3). Facts and theories of American public finance—federal, state, and local. *Fall and spring*. Wilde.
- 143 PROBLEMS IN STATE AND LOCAL FINANCE (Political Science 193) (3). Prerequisite, Economics 141 or equivalent. Selected problems relating to the financing of state and local functions. *Spring*. Staff.
- 145 INDUSTRIAL ORGANIZATION (3). The structure of industry and its relation to performance; causes and historical development of industrial concentration; investigation and analysis of specific industries in the current economy. *Fall*. McFarland.
- 146 INDUSTRIAL CONCENTRATION AND PUBLIC POLICY (3). Historical development of Federal policy toward business concentration and behavior; the economic interpretation of present Federal anti-trust policy toward business. *Spring*. McFarland.

- 151 THE AMERICAN TRANSPORTATION SYSTEM (3). A survey of the economic characteristics and basic problems of the several modes of transportation. *Fall*. Blaine.
- 152 TRANSPORTATION AS A REGULATED INDUSTRY (3). Economic problems and policies under state and federal regulation. *Spring*. Blaine.
- 153 ECONOMICS OF PUBLIC UTILITIES (3). Theory and policies as applied to the power and communications industries. *Fall*. Webbink.
- 159 HISTORY OF ECONOMIC DOCTRINES (3). A survey of the fundamental forms of economic thought from the scholastics through Keynes. *Fall*. Tarascio.
- 161 INTERNATIONAL ECONOMICS (3). An introduction to international trade, the balance of payments, and related issues of foreign economic policy. *Fall and spring*. Ingram, Appleyard, Howle.
- 163 ECONOMIC DEVELOPMENT (3). An introduction to the economic characteristics and problems of the less developed countries and to theories and policies applicable to the developing economy. *Fall and spring*. Ingram, Appleyard, Field.
- 170 INTRODUCTION TO ECONOMETRICS (3). Prerequisite, Economics 70 or equivalent. Intermediate topics of probability and regression theory; interval estimation; construction, application and testing of linear economic models. *Spring*. Murphy.
- 185 ECONOMIC FLUCTUATIONS (3). Prerequisite, Economics 132 or equivalent. Analysis of economic fluctuations. Macroeconomic theory. Stabilization policy. Macroeconomic forecasting. *Fall*. Lee.
- 191 AN INTRODUCTION TO THE LABOR PROBLEM (3). A survey of the field of labor with emphasis on the labor force, the structure of the labor market, collective bargaining, wages, hours, and hazards of modern industrial life. *Fall and spring*. Staff.
- 192 COLLECTIVE BARGAINING (3). Prerequisite, Economics 191 or equivalent. This course deals with collective bargaining agencies, the procedures and subject matter of collective bargaining. *Fall and spring*. Guthrie, Johannesen.
- 193 HISTORY OF THE LABOR MOVEMENT (3). Prerequisite, Economics 191 or equivalent. A history of the labor movement in the United States, with special reference to its economic significance. *Fall*. Guthrie.
- 194 SOCIAL INSURANCE (3). Prerequisite, Economics 191 or equivalent. The origin and development of social insurance as a means of dealing with the hazards of modern industrial life. Special consideration of the development of social insurance systems in the United States. (1970-1971 and alternate years.) *Spring*. Guthrie.
- 195 HUMAN CAPITAL AND THE LABOR MARKET (3). Prerequisite, Economics 140 or 191 or equivalent. Advanced treatment of topics in wage determination, human capital theory and methodological problems. *Spring*. Staff.
- 196 COMPARATIVE ECONOMIC SYSTEMS (3). A review of the basic institutions of our American economic system and a comparison with other existent or proposed economic systems. *Fall*. Staff.

- 197 GOVERNMENT AND BUSINESS (Political Science 197) (3). The regulation and control of business by government. Constitutional provisions, the antitrust laws, public utilities, taxation, labor laws, and transportation are the fields explored. *Spring*. Carter.

SCHOOL OF EDUCATION

NORTON LEWIS BEACH, *Dean*

General Information

(See also page 57.)

Students who plan to meet the requirements for a teaching certificate in Elementary Education or Secondary Education are under the joint direction of the School of Education and the respective subject matter departments.

Students interested in preparing to teach should consult the Dean of the School of Education, who will give information about the requirements in various teaching fields. Students are admitted to the School of Education for professional work at the beginning of the junior year.

The professional work in preparation for teaching must be taken over a two-year period. For that reason juniors should begin their work promptly in order to meet their requirements.

NOTE: For undergraduate courses in physical education see the Department of Physical Education.

- 41 EDUCATION IN AMERICAN SOCIETY (3). (*The School*). This course or its equivalent is required of all prospective teachers. *Fall and spring*. Staff.
- 52 MATERIALS AND METHODS IN THE LANGUAGE ARTS (3). Required of all elementary education majors and should be taken during the semester preceding student teaching. Also open to other education majors. Brown, Lane, Jones, Mathews.
- 71 EDUCATIONAL PSYCHOLOGY (3). (*The Pupil*). Required of all prospective teachers. Second course in the professional sequence and should be taken during the junior year. *Fall and spring*. Staff.

THEORY AND PRACTICE OF TEACHING (6 each). Open only to seniors in the School of Education. Staff.

In this block program, time is devoted to study of school organization, appropriate methods and materials of teaching.

- 61 THEORY AND PRACTICE OF TEACHING IN THE ELEMENTARY SCHOOL (*Fall, spring*);
- 65 THEORY AND PRACTICE OF TEACHING THE MENTALLY RETARDED IN THE ELEMENTARY SCHOOL (*Spring*);
- 81 THEORY AND PRACTICE OF THE TEACHING OF ENGLISH IN THE SECONDARY SCHOOL (*Fall, spring*);
- 85 THEORY AND PRACTICE OF THE TEACHING OF SOCIAL STUDIES IN THE SECONDARY SCHOOL (*Fall, spring*);
- 89 THEORY AND PRACTICE OF THE TEACHING OF MATHEMATICS IN THE SECONDARY SCHOOL (*Fall*);

- 91 THEORY AND PRACTICE OF THE TEACHING OF SCIENCE IN THE SECONDARY SCHOOL (*Spring*);
- 93 THEORY AND PRACTICE OF THE TEACHING OF PUBLIC HEALTH (*Spring*);
- 95 THEORY AND PRACTICE OF THE TEACHING OF LANGUAGE ARTS AND SOCIAL STUDIES IN THE JUNIOR HIGH SCHOOL (*Spring*);

METHODS AND MATERIALS IN TEACHING (3 each). (*Teaching*).

These courses are taught six hours per week during the first half of the semester indicated. Open only to seniors in the School of Education. Staff.

NOTE: Students deficient in quality points will not be admitted to the professional block program.

- 63 HEALTH AND PHYSICAL EDUCATION (*Spring*);
- 67 SPEECH (*Spring*);
- 69 DISTRIBUTIVE EDUCATION (*Spring*);
- 75 INSTRUMENTAL MUSIC (*Spring*);
- 76 CHORAL MUSIC (*Spring*);
- 77 ART (*Spring*);
- 83f FRENCH (*Spring*);
- 83g GERMAN (*Spring*);
- 83s SPANISH (*Spring*);
- 87 LATIN (*Spring*).

STUDENT TEACHING (6 each).

Student teaching is designed to emphasize learnings in the three areas of *The School*, *The Pupil*, and *Teaching*, as outlined in many state plans of professional courses. It is conducted on a full-time basis during the second half of the semester indicated and is carried out under University supervision in cooperating public schools in the State. Open only to seniors in the School of Education. Staff.

- 62 ELEMENTARY GRADES (*Fall, spring*);
- 64 HEALTH AND PHYSICAL EDUCATION (*Spring*);
- 66 STUDENT TEACHING IN THE PROGRAMS FOR THE MENTALLY RETARDED (*Spring*);
- 68 SPEECH (*Spring*);
- 70 DISTRIBUTIVE EDUCATION (*Spring*);
- 78 INSTRUMENTAL MUSIC (*Spring*);
- 70 DISTRIBUTIVE EDUCATION (*Spring*);
- 80 ART (*Spring*);
- 82 ENGLISH (*Fall, spring*);
- 84f FRENCH (*Spring*);
- 84g GERMAN (*Spring*);
- 84s SPANISH (*Spring*);
- 86 SOCIAL STUDIES (*Fall, spring*);
- 88 LATIN (*Spring*);
- 90 MATHEMATICS (*Fall*);
- 92 SCIENCE (*Spring*);
- 94 PUBLIC HEALTH (*Spring*);
- 96 JUNIOR HIGH SCHOOL (*Spring*).

- 72a CHILD GROWTH AND DEVELOPMENT (3). Required of all prospective elementary school teachers. To be taken during the first half of the semester in which student teaching is done. *Fall and spring*. Staff.



- 72b ADOLESCENT GROWTH AND DEVELOPMENT (3). Required of all prospective secondary school teachers. To be taken during the first half of the semester in which student teaching is done. *Fall and spring.* Staff.
- 99 THE SECONDARY SCHOOL (3). This course meets six hours per week during the first half of the semester in which student teaching is done. Required of all secondary teachers majoring in health and physical education, instrumental music, distributive education, vocal music, art, French, German, Spanish, speech, Latin, or public health. *Spring.* Staff.
- Undergraduate students who are not in the School of Education must get the permission of the dean to enroll in these courses.
- Attention is called to courses listed under psychology, sociology, physical education, dramatic art, and other departments as of particular importance in present-day preparation of teachers and educational administrators. For advanced courses in physical education see the Department of Physical Education.
- 101 EDUCATIONAL ADMINISTRATION (3). *Fall.* Ball, Tracy, Tarbet, A. Perry, Eargle, Harkin.
- 103 INTRODUCTORY STATISTICS FOR EDUCATIONAL RESEARCH (3). Orientation to statistics; principles and methods of descriptive statistics: central tendency, variability, the normal curve(standard scores, centiles, correlation; introduction to statistical inference: sampling, *t*, Chi square, simple analysis of variance; introduction to non-parametric methods. Application to educational research. *Fall.* Sommerfield, White.
- 106 INTRODUCTION TO GUIDANCE PRINCIPLES AND PRACTICES IN THE ELEMENTARY SCHOOL (3). A consideration of the elementary

school's role as a major agency in helping the child develop individual and group relationships; the role and staff relationships of the counselor; existing guidance programs in the elementary school; and problems and issues related to guidance in the elementary school. Rosser.

- 120 MUSIC EDUCATION IN THE HIGH SCHOOL (3). *Summer session.* Carter (of the Music Department).
- 121 INVESTIGATIONS AND TRENDS IN MUSIC EDUCATION (3). *Summer session and fall.* Carter (of the Music Department).
- 122 INTRODUCTION TO SCHOOL PSYCHOLOGY (3). A course designed to provide the student with an introduction and concepts and methods involved in school psychology. *Fall, summer.* Brantley.
- 129 ADULT EDUCATION: A GENERAL SURVEY (3). Prerequisite, permission of the instructor. The history and philosophy of adult education. Current developments in this and other countries. Forms of adult education today. Problems in adult learning. *Spring.* Watson, Hardy, Fay.
- 130 PROGRAM PLANNING IN ADULT EDUCATION (3). Prerequisite, permission of the instructor. Designing of programs, courses, and classes for adult community groups; business and industrial groups; governmental and voluntary agencies; and continuing higher education. Emphasis upon evaluation and appraisal. *Summer.* Hardy, Rhyne, Fay.
- 131 GROUP PROCESS AND BEHAVIORAL CHANGE (3). Prerequisite, permission of the instructor. Study of how group learning takes place. Current trends in research on group interaction. Workshop approach to an understanding of problems through group processes. *Fall.* Watson, Smallegan.
- 132 FUNCTION AND STRUCTURE OF DISTRIBUTIVE EDUCATION (3). *Summer Session.* Staff.
- 133 SUPERVISION OF THE COOPERATIVE DISTRIBUTIVE EDUCATION PROGRAM (3). *Summer session.* Staff.
- 135 AUDIO-VISUAL INSTRUCTION: TECHNIQUES AND MATERIALS (3). *Fall, spring, and summer.* Wileman, Gale.
- 136 INTRODUCTION TO INSTRUCTIONAL MATERIALS PRODUCTION (3). The planning and production of two and three dimensional instructional materials, television graphics, slides, overhead transparencies, manipulative tactile materials and audio recordings. Wileman.
- 137 SYSTEMATIC INSTRUCTIONAL DEVELOPMENTS (3). The course delineates systematic strategies for instructional development including: task analysis, instructional system analysis, criteria for media selection, criteria for sequencing, instructional management and control techniques, and cost effectiveness. *Spring and summer.* Gale.
- 140 SOCIAL FOUNDATIONS OF AMERICAN EDUCATION (3). A study of the historical developments, philosophical theories and social force influencing American Education. Not appropriate in a doctoral program. *Fall, spring and summer.* Holton, Schlechty, Phillips, Unks.
- 141 PHILOSOPHY OF MODERN EDUCATION (3). *Fall.* King, Holton, Phillips.

- 142 EUROPEAN FOUNDATIONS OF MODERN EDUCATION (History 130) (3). *Fall*. Holton, Phillips.
- 143 SOCIAL AND EDUCATIONAL HISTORY OF THE UNITED STATES (History 170) (3). *Spring*. Holton, Phillips.
- 144 EDUCATIONAL SOCIOLOGY (3). An application of sociological theory and research to problems of concern to educators. *Fall*. Schlechty.
- 145 MIND, LANGUAGE, AND EDUCATION (3). An examination of the nature, methods, and limits of education and what makes it possible by a philosophic exploration of mind and language. Emphasis on habits, skills, motivation, experience and thought and their roles in the formulation of an educated mind. *Summer*. Adams.
- 147 CULTURAL CONSTRAINTS IN EDUCATIONAL DEVELOPMENT (Anthro. 147) (3). An anthropological analysis of social structure, land tenure, poverty, health and illness, population pressures and education, linking the concerns of the Carolina Population Center, The School of Education, and the Department of Anthropology. *Spring*. Burleson.
- 150 EARLY CHILDHOOD EDUCATION (3). The development of early childhood education; growth and development characteristics of very young children; providing an environment for learning; and organizing and administering programs and services. *Fall and summer*. Staff.
- 151 THE CURRICULUM OF EARLY CHILDHOOD EDUCATION (3). The objectives of early childhood education, and curricula in language development, science, social living, number, music, art, and dramatic play. *Spring and summer*. Staff.
- 154 THE SOCIAL STUDIES IN THE ELEMENTARY SCHOOL (3). *Fall*. Lane.
- 155 NATURAL SCIENCE IN THE ELEMENTARY SCHOOL (3). *Spring*. Price.
- 156 MATHEMATICS IN THE ELEMENTARY SCHOOL (3). *Spring*. Jones, Ballew.
- 160 THE SCHOOL CURRICULUM (3). Open to seniors and graduate students with 15 semester hours of credit in education or by permission of the instructor. *Fall and spring*. Hennis, Blackburn, Perry.
- 161 ELEMENTARY EDUCATION IN THE UNITED STATES (3). *Fall*. Brown, Cobbs.
- 164 SEX EDUCATION IN THE SCHOOL CURRICULUM (3). A survey of current and historical studies related to sexuality and population, with attention to sex-related problems of man. Emphasis is given to materials and methodology for teaching in the area. *Fall*. Scott.
- 170 PSYCHOLOGICAL FOUNDATIONS OF EDUCATION (3). The nature and relevance of educational psychology; sources and interpretation of educational and psychological data; components of teaching-learning situations, evaluation, and reporting. *Fall and spring*. Sommerfield, Scott, Stuck, White, Coop.
- 171 GROWTH AND DEVELOPMENT OF THE SCHOOL CHILD (3). *Fall and spring*. Sommerfield, Scott, Stuck, Coop.

- 172 PSYCHOLOGY OF LEARNING IN THE SCHOOL (3). Prerequisite, Education 71 or equivalent. *Spring and summer*. Stuck.
- 173 PSYCHOLOGY OF ADULT LEARNING: INTERACTION OF VALUES, PERSONALITY AND COGNITION (3). This course will study the interaction of personality, motivation, values, attitudes, and cognition of students from late adolescence through middle age. A research project applying the course, content to an area of the student's concern will be required. *Spring*. Chambers.
- 174 EDUCATIONAL MEASUREMENT AND EVALUATION (3). *Spring*. Sommerfield.
- 176 MENTAL HYGIENE IN TEACHING (3). Prerequisite, introductory courses in psychology and education. *Fall and spring*. Rosser.
- 180 INTRODUCTION TO THE STUDY OF EXCEPTIONAL CHILDREN (Psychology 180) (3). *Fall and spring*. Ragland, Taylor, Wyne.
- 181 TEACHING THE MENTALLY HANDICAPPED CHILD (3). *Spring*. Mitchell, Taylor.
- 182 THE GIFTED CHILD IN SCHOOL AND SOCIETY (3). *Spring*. Taylor.
- 183 PRINCIPALS OF SPEECH CORRECTION (3). *Fall and summer session*. Staff.
- 184 CLINICAL PROCEDURES IN SPEECH CORRECTION (3). *Spring and summer session*. Staff.
- 185 PSYCHOLOGY OF MENTAL RETARDATION (3). Prerequisite, Education 174 or equivalent or permission of the instructor. *Spring and summer session*. Wyne.
- 186 PHONETICS (3). The recognition, analysis, production, and transcription of the sounds of the English language, using the international phonetic alphabet. Attention to foreign dialects and American regional differences in speech. *Summer session*. Staff.
- 187 EDUCATIONAL EVALUATION OF HANDICAPPED CHILDREN (3). Prerequisite, permission of instructor. An in-depth study and practice in the use of both formal and informal diagnostic assessment and observational techniques appropriate for the teacher of children with learning problems. *Fall*. Lillie.
- 188 CURRICULUM DEVELOPMENT IN SPECIAL EDUCATION (3). Prerequisite, Education 187. Designed to help the student put diagnostic and assessment procedures into practice in the classroom. Includes analysis of and practice in administering both commercially-available and student-produced curriculum materials. *Spring*. Lillie.
- 195 SEMINAR AND SUPERVISED INTERNSHIP IN EDUCATIONAL ADMINISTRATION (3). A supervised internship or field problem explicitly relevant to the program in administration and to the student's progress toward certification in the principalship. Tarbet, Perry, Ball, Tracy, Harkin, Eargle.
- 196 THE JUNIOR HIGH SCHOOL (3). *Fall*. Staff.
- 199 SECONDARY EDUCATION IN THE UNITED STATES (3). *Fall and spring*. Staff.

DEPARTMENT OF ENGLISH

C. CARROLL HOLLIS, *Chairman*

Prerequisites: Except for those exempting by placement examination, English 1 and 2 are prerequisite to all other courses offered by the English department.

Majors in English in the College of Arts and Sciences: A student choosing English as his major field should take (a) English 58; (b) two of the following: English 45, 51, 52, 54, 60, 64; (c) one of the following: English 66, 72, 73; (d) one of the following: English 81, 82, 83; (e) one to three courses chosen as free electives from the advanced courses offered by the Department (courses numbered from 30 to 199, with the exception of 32 and 33). In accordance with University regulations a student must have a grade of C or better in at least eighteen semester hours in the major.

Majors in English in the College of Arts and Sciences with a concentration in Speech: A student choosing English as his major field with a concentration in Speech should take (a) English 58; (b) two of the following: English 45, 51, 52, 60, 64; (c) one of the following: English 66, 72, 73; (d) one of the following: English 81, 82, 83; (e) one of the following: Speech 40, 41, 50; (f) one of the following: Speech 44 or 54; (g) two electives from the courses in Speech numbered from 30 to 199.

Majors in English in the School of Education: A student who desires to secure a certificate in the public high schools with a major in English should consult the School of Education for the courses in education and for the minor. (See "School of Education" in Part III.) The English requirements are: (a) English 30; (b) English 36; (c) English 58; (d) English 81 or 82; (e) Speech 40 or 41; (f) one of the following: English 52, 54, 60, 64, 66; (g) one of the following: English 72, 73, 78; (h) two electives in literature (one of which may be taken during the freshman or sophomore year). In accordance with University regulations a student must have a grade of C or higher in at least eighteen semester hours in the major.

Majors in Speech in the College of Arts and Sciences: A student choosing Speech as his major field should take one course from each of the following three areas: voice production (Speech 40, 50, 130, 140, 170, 183); the oral interpretation of literature (English 40, Speech 41, 140, 141); and rhetoric and public address (Speech 44, 45, 54, 56, 87, 144, 151, 154, 160, 165, 187, 188). Of the six to eight courses needed for a major in speech,

at least three must be at the 100 level. Speech 55 will not be accepted as part of the major.

Majors in Speech in the School of Education: A student who desires to secure a certificate in the public high schools with a major in Speech should consult the School of Education for the courses in education and for the minor. (See "School of Education" in Part III.) Students who choose Speech as their teaching will take the following courses or alternates which have been approved by their adviser: (a) Speech 40, 41, 44, 183; (b) Speech 45 or 54 or 87; (c) Speech 50 or 140 or 170; (d) Dramatic Art 31 or 51 or 63; R-TV-MP 60; Speech 141, or T-TV-MP 140; (f) any combination of additional courses in speech, dramatic art and R-TV-MP to make a minimum total of 30 semester hours.

Honors in English and Honors in Writing: See College of Arts and Sciences, Part III.

- C THE WRITING LABORATORY (0) Prerequisite, English 2. Not open to foreign students. A review of grammar, vocabulary, spelling, and composition with special emphasis on writing. May be used to remove a composition condition (cc). *Fall and spring*. Bourdette, Director; staff.
- 1 ENGLISH COMPOSITION AND RHETORIC (3). Required of all students except those exempting by placement tests. *Fall and spring*. Powers, Director; staff.
- 2 ENGLISH COMPOSITION AND RHETORIC (3). Required of all students except those exempting by placement tests. *Fall and spring*. Powers, Director; staff.
- 9 FRESHMAN SEMINAR (3). Freshmen only. Introduction, by senior faculty members, to studies in humanities at the University. Topics are chosen by individual instructors; students should consult General College advisors or the English Department for current offerings.
- 20 CRITICAL APPROACHES TO LITERATURE (3). Freshman and sophomore elective, open to juniors and seniors. Illustration of major perspectives such as historical, formal, moral, mythic, "New Critical," philosophical, psychological, or sociological through study of representative literary works. Designed to enrich the critical resources of the student in the humanities. *Fall and spring*. Powers, Director; staff.
- 21 ENGLISH LITERATURE (3). Sophomore elective, open to juniors and seniors. Substantial readings in Chaucer, Shakespeare, and Milton. *Fall and spring*. Powers, Director; staff.
- 21A ENGLISH LITERATURE (3). Freshman elective. A special section of English 21 for students who are exempted from taking English 1 and 2 because of high SAT and Advanced Placement scores. Substantial readings in Chaucer, Shakespeare, and Milton, with more written work than is required in English 21. *Fall*. Powers, Director; staff.

- 22 MAJOR BRITISH AUTHORS (exclusive of Chaucer, Shakespeare, and Milton) (3). Freshman and sophomore elective, open to juniors and seniors. A study of approximately six major British authors representative of the various periods of British literature. Periods to be studied and possible representative authors include the following: 16th century, Spenser, Marlowe; 17th century, Donne, Jonson; 18th century, Pope, Swift; Romantic, Wordsworth, Keats; Victorian, Tennyson, Browning; Modern, Shaw, Yeats, or others. Strongly recommended for prospective English majors. *Fall and spring*. Powers, Director; staff.
- 22A MAJOR BRITISH AUTHORS. Freshman elective. A special section of English 22 for students who are exempted from taking English 1 and 2 because of high SAT and Advanced Placement scores. Special attention will be given to students' written work. *Fall and spring*. Powers, Director; staff.
- 23 INTRODUCTION TO FICTION (3). Freshman and sophomore elective, open to juniors and seniors. Novels and shorter fiction by Smollett, Conrad, Faulkner, Wolfe, Orwell, James, Cary, Malamud, Golding, and others. *Fall and spring*. Powers, Director; staff.
- 23W INTRODUCTION TO FICTION (3). Freshman and sophomore elective, open to juniors and seniors. Novels and shorter fiction by Chekhov, James, Conrad, Kafka, Joyce, Hemingway, Salinger, Flannery O'Connor and others are examined with special attention to technical details. Students write and discuss fiction of their own, using fictional techniques learned discussing established writers. *Fall and spring*. Staff.
- 24 CONTEMPORARY LITERATURE (3). Freshman and sophomore elective, open to juniors and seniors. The literature of the present generation. *Fall and spring*. Powers, Director; staff.
- 24A CONTEMPORARY LITERATURE (3). Freshman elective. A special section of English 24 for students who are exempted from taking English 1 and 2 because of high SAT and Advanced Placement scores. Special attention will be given to students' written work. *Fall and spring*.
- 25 INTRODUCTION TO POETRY (3). Freshman and sophomore elective, open to juniors and seniors. Wide variety of poetic styles, with formal rather than chronological orientation. *Fall and spring*. Powers, Director; staff.
- 25W INTRODUCTION TO POETRY (3). Sophomore elective, open to juniors and seniors. Critical reading and creative writing of poetry. The poets examined are modern, including Wallace Stevens, Richard Eberhart, James Dickey, Louis Simpson, and James Wright. *Fall and spring*. Staff.
- 26 INTRODUCTION TO DRAMA (3). Freshman and sophomore elective, open to juniors and seniors. Jonson, Webster, Congreve, Sheridan, Ibsen, Shaw, Wilder, Arthur Miller, T. Williams, Samuel Beckett, Edward Albee, and others. *Fall and spring*. Powers, Director; staff.
- 27 STUDIES IN LITERATURE (3). Freshman and sophomore elective, open to juniors and seniors. Consideration of selected aspects of English and American literature. Topics are chosen by individual instructors; students should consult General College advisors of the English Department for current offerings. Powers, Director; staff.

- 28 MAJOR AMERICAN AUTHORS (3). Freshman and sophomore elective open to juniors and seniors. A study of approximately six major American authors drawn from Emerson, Thoreau, Hawthorne, Melville, Whitman, Twain, Dickinson, James, Eliot, Frost, Hemingway, O'Neill, Faulkner, or others. *Fall and spring*. Powers, Director; staff.
- 28A MAJOR AMERICAN AUTHORS (3). Freshman elective. A special section of English 28 for students who are exempted from taking English 1 and 2 because of high SAT and Advanced Placement scores. Special attention will be given to students' written work. *Fall and spring*. Powers, Director; staff.
- 29 HONORS: TYPES OF LITERATURE (3 or 6). Freshman and sophomore honors students only. A continuing study of literary forms, beginning in the fall term and concluding in the spring, with 3 hours credit for each term. Students should consult the Associate Dean of Honors or the English Department for current offerings. Formerly ENGLISH 21H and ENGLISH 22H.
- 30 ADVANCED EXPOSITORY WRITING (3). Effective organization and presentation of facts and ideas. Concentration upon the most frequent needs for expository writing: communicating information, explaining ideas, clarifying complex interrelationships, interpreting and evaluating, making a logical case, presenting it persuasively, adapting presentation to circumstances and readers, planning and writing for oral presentation. Recommended for students planning to enter the professions or public service. *Fall and spring*. MacIntosh, Director; staff.
- 32 BUSINESS WRITING (3). Communication factors; clarity, conciseness, and effectiveness of statement; logical and psychological patterns of organization; adaptation to varying audiences; memoranda, reports, proposals, letters. *Fall and spring*. MacIntosh, Director; staff.
- 33 SCIENTIFIC WRITING (3). Designed to aid the science student in the communication situations of his professional career. Clarity, conciseness, and effectiveness of statement; organizing and presenting facts, principles, and concepts; abstracts, proposals, progress reports, final reports, oral reports, professional papers, journal articles. *Fall and spring*. MacIntosh, Director; staff.
- 34F CREATIVE WRITING I: INTRODUCTION TO THE SHORT STORY (3). Class discussion of short stories, longer fiction, and general literary principles; technical training in the writing of original short stories. *Fall and spring*. Steele, Director; staff.
- 34P CREATIVE WRITING I: INTRODUCTION TO POETRY (3). Permission of instructor required. A workshop class in the essentials of a successful poem in the making. Course work consists of reading contemporary poets and of writing poems. *Fall and spring*. Steele, Director; staff.
- 35 CREATIVE WRITING II (3). Prerequisite, permission of the instructor. An advanced course in imaginative writing for students who have had some previous experience in this field. *Fall and spring*. Steele, Director; staff.
- 35P CREATIVE WRITING II (3). Advanced poetry writing. Prerequisite, English 34P or permission of instructor. Staff.

- 36 ENGLISH GRAMMAR (3). A study of modern English grammar with special attention to such current problems as the confusion of grammatical terminology, attacks on traditional rules, conflict between prescriptive and descriptive grammar. The course is designed especially for prospective English teachers, but others may take it. *Fall*. Kennedy, Wittig; *spring*. Kennedy, Wittig.
- 38 THE ENGLISH LANGUAGE (3). Present day English, British and American, standard and dialectal—its historical background and development. The language as a whole is considered, i.e., vocabulary, pronunciation, spelling, etc.; grammar is treated only incidentally. *Spring*. Wittig.
- 40 INTERPRETATION OF POETRY (3). Exploration of the significance of poetry for thought and human experience. Consideration of forms and substance.
- 41 PRINCIPLES OF LITERARY ART (3). A study of the theories of literature through their application to specific English masterpieces.
- 42 MOVIE CRITICISM (RTVMP 42) (3). *Fall*. Hardy, King; *spring*. King, Nickell.
- 43 THE ENGLISH NOVEL (3). The English novel in the eighteenth and nineteenth centuries. *Fall*. Edge; *spring*. Holman.
- 45 THE ENGLISH DRAMA (3). The English drama from the beginning to 1700. *Fall*. Kennedy; *spring*. Kennedy.
- 46 STUDIES IN DRAMA (3). An intensive study of a single writer, group, movement, theme, or period in this genre. Staff.
- 47 STUDIES IN FICTION (3). An intensive study of a single writer, group, movement, theme, or period in this genre. *Spring*. Ludington, Raper.
- 48 STUDIES IN POETRY (3). An intensive study of a single writer, group, movement, theme, or period in this genre. *Fall*. Gallacher.
- 49 STUDIES IN LITERARY TOPICS (3). An intensive study of a single writer, group, movement, theme or period in this genre. *Spring*. Wright.
- 51 ENGLISH LITERATURE OF THE MIDDLE AGES (3). English writing from the eighth to the fifteenth centuries, exclusive of Chaucer. *Fall*. Kennedy.
- 52 CHAUCER (3). The development of Chaucer as a man and as an artist as revealed in certain minor poems, the *Troilus*, and most of *The Canterbury Tales*. *Fall*. Brookhouse, Wittig; *spring*. Brookhouse, Gallacher.
- 54 ENGLISH LITERATURE OF THE RENAISSANCE (3). Poetry and prose of representative authors, including More, Wyatt, Sidney, Spenser, Raleigh, Bacon; with selected plays of Marlowe, Dekker, and Jonson. *Fall*. Devereux, Mills; *spring*. Mills, Donovan.
- 58 SHAKESPEARE (3). Study of about twenty representative comedies, histories, and tragedies. *Fall*. Christopher, Lyons, McNamara, McQueen, Phialas, Read; *spring*. Devereux, Lyons, Mills, Phialas, Read.
- 60 ENGLISH LITERATURE, 1616-1700 (3). Bacon, Donne, Herbert, Browne, Herrick, Dryden. *Fall*. McQueen, Voitle; *spring*. Christopher, McQueen.

- 63 THE LITERARY ASPECTS OF THE BIBLE (3). The Old Testament and the New Testament will be taken up in alternate semesters—New Testament, fall; Old Testament, spring. *Spring*. Stumpf.
- 64 MILTON (3). The works of Milton studied in the light of the life, times, and culture of the poet. *Fall*. Christopher, Sedelow; *spring*. Voitle.
- 66 PROSE AND POETRY OF THE CLASSICAL PERIOD (3). Dryden, Addison, Steele, Swift, Pope, Johnson, Boswell, Gray, and Cowper. *Fall* MacIntosh, Stumpf; *spring*. Haig, Stumpf.
- 72 THE CHIEF ROMANTIC POETS (3). Wordsworth, Coleridge, Byron, Shelley, and Keats. *Fall*. Fogle, Reed; *spring*. Kirkpatrick, Reed, West.
- 73 VICTORIAN LITERATURE (3). Major English writers, 1832-1890. *Fall*. Barnes, Wright; *spring*. Bailey, West.
- 78 ENGLISH LITERATURE, 1890-1920 (3). Hardy, Henley, Housman, Kipling, Wilde, Shaw, Conrad, Galsworthy, and the Irish Revival. *Fall*. McMillan, West; *spring*. Cotten.
- 81 AMERICAN LITERATURE (3). Major authors from the beginning to 1890. *Fall*. Patterson, Powers, Rubin; *spring*. Leary, Patterson, Rust.
- 82 AMERICAN LITERATURE (3). Major authors from 1890 to the present. *Fall*. Hollis, Lensing, Patterson, Rust; *spring*. King, Lensing, Powers, Rust, Zug.
- 83 THE AMERICAN NOVEL (3). Hawthorne, Melville, Twain, Henry James, Sherwood Anderson, Hemingway, Faulkner, and others. *Fall*. Gonnaud, Leary, Lensing, Raper, Rust; *spring*. Bain, Blotner, Flora, Ludington.
- 84 AMERICAN NEGRO LITERATURE (3). An historical and critical survey of the fiction, poetry, dramatic and other writings by black Americans. *Fall and spring*. Jackson.
- 92 TWENTIETH CENTURY POETRY (3). Yeats, Eliot, Auden, and others. *Fall*. Armitage, Wright; *spring*. Armitage, Lensing.
- 93 THE BRITISH NOVEL FROM 1870 TO WORLD WAR II (3). Hardy, Conrad, Joyce, Lawrence, Cary, Greene, and others. *Fall*. Blotner, McMillan, Thornton; *spring*. Barnes, Edge, Harper.
- 94 BRITISH AND AMERICAN FICTION SINCE WORLD WAR II (3). Beckett, Durrell, Golding, Sillitoe, Bellow, Ellison, Malamud, Flannery, O'Conner, and others. *Fall*. Bryan, Harper, Ludington; *spring*. Brookhouse, Bryan, Raper.
- 95 ENGLISH AND AMERICAN DRAMA OF THE TWENTIETH CENTURY (3). *Fall*. Armitage, Avery, Flora, Zug; *spring*. Armitage, McMillan, Thornton, Zug.
- 96 DIRECTED READINGS IN LITERATURE (3). Intensive reading on a particular topic under the supervision of a qualified member of the staff. Not to be elected without special permission of department. Staff.
- 97 COURSE FOR HONORS (6). See the Program for Honors Work in the
- 98 College of Arts and Sciences. Reading and the preparation of an essay under the direction of department advisers.

- 99 HONORS IN WRITING (3). See description on page 49.
- 101X ENGLISH AS A SECOND LANGUAGE (0). Practice in understanding, reading, speaking, and writing English, with considerable attention to the oral-aural approach. Required of all foreign students whose scores on the English proficiency examination indicate need for further training. *Fall*. McMillan.
- 130 ADVANCED EXPOSITORY WRITING (3). *Summer*. MacIntosh.
- 134 CREATIVE WRITING (3).
- 136 MODERN ENGLISH (3). *Fall*. Eliason; *spring*. Gaskin.
- 140 INTERPRETATION OF LITERATURE (3).
- 141 LITERARY CRITICISM (3).
- 147 THE ENGLISH BALLAD (3).
- 151 ENGLISH LITERATURE OF THE MIDDLE AGES (3). *Spring*. Gallacher.
- 152 CHAUCER (3).
- 154 ENGLISH LITERATURE OF THE RENAISSANCE (3). *Fall*. Mills.
- 158 SHAKESPEARE (3).
- 160 A SURVEY OF SEVENTEENTH-CENTURY LITERATURE (3).
- 161 ENGLISH DRAMA, 1600-1642 (3).
- 164 MILTON (3).
- 165 RESTORATION AND EIGHTEENTH-CENTURY DRAMA (3).
- 166 ENGLISH LITERATURE, 1700-1780 (3).
- 172 THE CHIEF ROMANTIC POETS (3). *Fall*. Kirkpatrick.
- 174 MAJOR FIGURES IN VICTORIAN LITERATURE (3).
- 175 NINETEENTH-CENTURY DRAMA, ENGLISH AND AMERICAN (3).
- 181 AMERICAN LITERATURE TO 1900 (3). *Fall*. Bain.
- 183 THE AMERICAN NOVEL (3).
- 184 AMERICAN NEGRO LITERATURE (3).
- 188 SOUTHERN AMERICAN LITERATURE (3). *Spring*. Rubin.
- 190 A SURVEY OF TWENTIETH-CENTURY BRITISH AND AMERICAN LITERATURE (3). *Fall*. Thornton.
- 195 ENGLISH AND AMERICAN DRAMA OF THE TWENTIETH CENTURY (3).

Courses in Speech

- 37 FUNDAMENTALS OF ORAL COMMUNICATION (3). Sophomore elective; open to juniors and seniors. Introduction to the major areas of speech training and study, including voice and pronunciation, oral reading, and public speaking. Special attention to factors common to all oral communication. *Fall and spring*. Staff.
- 40 VOICE AND DICTION (3). Designed to establish good habits of speech by study of principles and analysis of the individual's voice, articulation, and pronunciation. *Fall and spring*. Staff.
- 41 ORAL INTERPRETATION OF LITERATURE (3). Emphasis on understanding and appreciation; voice and articulation receive attention, but systematic training in the mechanics of speech is reserved for Speech 40. *Fall and spring*. Staff.

- 44 PUBLIC SPEAKING (3). Prerequisite Speech 37 or permission of the instructor. Composition and delivery of original speeches: content, organization, style, delivery, and adaptation to the audience. *Fall and spring*. Staff.
- 45 ARGUMENTATION AND DEBATE (3). Analysis of issues, use of evidence, reasoning, brief-making, and refutation. Argumentative speeches and debates on legal cases and on current issues. Designed for prospective law students, speech teachers, and college debaters. *Fall and spring*. Pence.
- 50 ADVANCED VOICE AND DICTION (3). Prerequisite, Speech 40 or permission of instructor. A continuation of Speech 40. Detailed study of phonetics. Practice in oral reading, public speaking, and dramatic interpretation. *Fall*. Morgan.
- 54 ADVANCED PUBLIC SPEAKING (3). Prerequisite, one course in speech or permission of the instructor. Composition and delivery of original speeches; study of model speech and discussion techniques. *Fall and spring*.
- 55 PARLIAMENTARY PROCEDURE (1). Brief history of parliamentary law, including precedents established by House of Commons, by Jefferson's *Manual*, and by Cannon's *Precedents*. A study of Robert's *Rules of Order* and their application. *Fall and spring*. Brandes, Callaghan.
- 56 GROUP LEADERSHIP (3). A study of conference leadership, including establishment of agenda; moderation of and participation in discussion, including the symposium, the colloquy, the panel, and the interview; methods and means of motivating through group work; and an investigation of brainstorming and the buzz session as tools to group leadership. *Fall and Spring*. Barnes.
- 95 TOPICS IN SPEECH (3). Subject matter on a problem in Speech to designed by instructor and student in conference. Staff.
- 97 HONORS IN SPEECH (3). Prerequisite, enrollment in the honors program.
- 103 INFORMATION SYSTEMS IN HUMANISTIC AND SOCIAL SCIENCE RESEARCH (Information Science 103) (3). No prerequisite. An introduction to computer hardware and software systems, with an emphasis upon their use in the Humanities and the Social Sciences. Computer programming, with practice on the computer, will be stressed. *Fall and spring*. Sedelow.
- 111 CLASSICAL RHETORIC (Classics 111) (3). Lectures on the nature, development, and influence of Greek and Roman rhetoric, with class discussion of important rhetorical treatises, including Plato's *Phaedrus*, Aristotle's *Rhetoric*, Cicero's *De Oratore*, and Quintillian's *Institutio*, read in English translation; illustrations from the Attic orators and the speeches of Cicero. Students will make an independent study of one of more aspects of theory or the history of rhetoric and a rhetorical analysis of one speech. *Spring*. Kennedy.
- 120 CONTEMPORARY SPEECH COMMUNICATION THEORY (3). A study of contemporary theories of human communication, focusing on speech communication. Examines communication theories, variables, and research findings in light of their contribution to our understanding of speech communication. *Fall*.

- 130 INTRODUCTION TO PHONETICS (3). Prerequisite, Speech 40 or equivalent. A detailed study of the international Phonetic Alphabet with emphasis on the sound system of American English. Application of phonetics to problems of pronunciation and articulation. *Fall*. Morgan. *Spring*. Peters.
- 140 APPLIED PHONETICS (3). Prerequisite, Speech 130 or equivalent. A detailed study of the regional speech of American English; a study of the sound systems of major foreign languages. Application to correction of foreign dialects and the use of dialects in dramatic literature. A field project in samplings of regional speech.
- 141 ADVANCED ORAL INTERPRETATION (3). Prerequisite, Speech 41 or equivalent. Preparation for and participation in oral interpretation activities in both individual and group forms. Preparation will include detailed analysis of novels, plays, and poems and their adaptation to being read aloud. *Fall and spring*. Hardy.
- 144 A SURVEY OF RHETORICAL THEORY (3). Prerequisite, Speech 37, 44 or equivalent. An introduction to theories of rhetoric ranging from Plato and Aristotle through Burke and Perelman. A study of how rhetorical theory developed, its eclipse during the nineteenth century and its redevelopment in the twentieth century. A detailed study of the classical rhetorical figures.
- 145 PHILOSOPHY OF FORENSICS (3). Prerequisites, Speech 45 or equivalent. An examination of the role of argumentative discourse in decisionmaking. A study of representative forensic situations and of leading theorists.
- 151 MASS COMMUNICATION RESEARCH (3). Prerequisite, none. Fundamentals of communication research techniques (content analysis, historiography, survey research, experimental design), including an overview of computer science, statistics, theory of development, and trends in the published literature. *Fall and spring*. Danielson, McCombs.
- 154 PERSUASION (3). A study of the classical canons of invention, arrangement, style and delivery to determine how barriers to communication arise and what can be done to minimize them. *Fall and spring*. Brandes.
- 160 AN INTRODUCTION TO EXPERIMENTAL METHODS IN SPEECH (3). Prerequisite, Speech 154 or permission of the instructor. A study of the research methods in oral communication currently used by behavioral scientists, and an application of one methodology by each student in a term project.
- 165 COMMUNICATION AND OPINION (Journalism 165) (Psychology 165) (Sociology 165) (3). Prerequisites, any two of the following courses: Psychology 26, Political Science 41, Sociology 51. A survey of the methods, findings, and conjectures of behavioral scientists working in the field of persuasive communication. *Fall and spring*. Adams.
- 170 VOICE AND ITS PRODUCTION (3). Anatomy and physiology of the speech producing and aural mechanisms.
- 177 HISTORY AND CRITICISM OF BRITISH PUBLIC ADDRESS (3). Prerequisites, none. Emphasis on a critical study of the resources of selected speakers, the content of their speeches, and their effect on significant issues.

- 183 PRINCIPLES OF SPEECH CORRECTION (Education 183) (3). *Spring*.
- 187 HISTORY AND CRITICISM OF AMERICAN PUBLIC ADDRESS FROM COLONIAL TIMES TO THE CIVIL WAR PERIOD. (3). Emphasis on a critical study of the resources of selected speakers, the content of their speeches, and their effect on significant issues. *Fall*. Bradley.
- 188 HISTORY AND CRITICISM OF AMERICAN PUBLIC ADDRESS FROM THE CIVIL WAR PERIOD TO THE NEW DEAL PERIOD. (3). Emphasis on a critical study of the resources of selected speakers, the content of their speeches, and their effect on significant issues. *Spring*. Bradley.
- 189 HISTORY AND CRITICISM OF AMERICAN PUBLIC ADDRESS FROM THE NEW DEAL PERIOD TO CONTEMPORARY TIMES (3). Emphasis on a critical study of the resources of selected speakers, the content of their speeches, and their effect on significant issues.
- 191 SPEECH DEVELOPMENT IN CHILDREN. (3). An investigation of the acquisition and development of speech in the normal child. Units in environmental factors, the sounds of the language, creative dramatics, choral speaking, story-telling, and similar oral communication experiences.
- 192 SPEECH OF THE CULTURALLY DISADVANTAGED. (3). An examination of dialects in North Carolina and a survey of the scholarship on culturally disadvantaged speech. *Spring*. Brandes.
- 193 PSYCHOLOGY OF SPEECH (3). An investigation of psychological aspects of speech, such as oral humor, stage fright, speech snobbery, the oral lie, and the relationships between speech and personality.

CURRICULUM IN FOLKLORE

DEAN OF THE GRADUATE SCHOOL, *Chairman*

This curriculum assembles the facilities of the University for those who desire a major or minor for the master's degree or a doctoral minor in folklore with a major in some related department, and mobilizes the pertinent instruction in this field now being offered in such departments as Anthropology, English, Germanic Languages, Music, Romance Languages, Slavic Languages, and Sociology. Advanced undergraduates are eligible to take courses in this curriculum.

(For description of courses below offered by the departments of Anthropology, Music, Romance Languages, and Sociology, see listings under department headings.)

- 103 PRIMITIVE AND ORIENTAL MUSIC (Music 103) (3). (1968-1969 and alternate years.) *Spring*. Mason.
- 104 FOLK MUSIC OF EUROPE AND THE NEW WORLD (Music 104) (3). (1967-1968 and alternate years.) *Spring*. Mason.
- 105 CELTIC: OLD IRISH (3). *On demand*. Holmes.
- 106 CELTIC: OLD WELSH (3). *On demand*. Holmes.

- 115 SLAVIC FOLK LITERATURE (Slavic 115) (3). *Spring*. Gasinski.
- 122 CULTURAL ANTHROPOLOGY (Anthropology 122) (3). *Fall and spring*. Staff.
- 123 ANTHROPOLOGY OF RELIGION (Anthropology 123) (3). (1968-1969 and alternate years.) *Fall*. Honigmann.
- 126 CULTURES OF SUB-SAHARAN AFRICA (Anthropology 126) (3). *Spring*. McEvoy.
- 127 ABORIGINAL CULTURES OF MEXICO AND CENTRAL AMERICA (Anthropology 127) (3). *Fall*. McEvoy.
- 129 SOUTHEAST ASIA: PEOPLES AND CULTURES (Anthropology 129) (3). *Spring*. Goethals.
- 130 INDIANS OF NORTH AMERICA (Anthropology 130) (3). *Spring*. Coe.
- 132 LATIN AMERICAN CULTURES (Anthropology 132) (3). *Spring*. Hafer.
- 135 THE NATURE OF CULTURE (Anthropology 135) (3). *Fall*. Peacock.
- 137 THE MIDDLE EAST: PEOPLES AND CULTURES (Anthropology 137) (3). *Fall*. Gulick.
- 138 PEOPLES OF THE FAR EAST: CHINA AND JAPAN (Anthropology 138) (3). (Not offered in 1969-1970.) *Fall*.
- 146 INTRODUCTION TO FOLKLORE (English 146) (Comparative Literature 146) (3). A survey of the primary genres (folk song, narrative, riddle, proverb, custom and belief, drama and art), with investigation of the history, problems, and issues of folklore. *Fall*. Zug.
- 147 BRITISH AND AMERICAN FOLK SONG (English 147) (3). *Spring*. Patterson.
- 186 FOLK NARRATIVE (Comparative Literature 186) (3). The origin, transmission and function of myths, legends, and folktales, with readings in folk and literary materials from Europe and America. *Spring*. Zug.
- 199 DIRECTED READINGS IN FOLKLORE. (3). *Fall and spring*. Staff.

FRENCH

(See Romance Languages)

DEPARTMENT OF GEOGRAPHY

DAVID GIOVANNI BASILE, *Chairman*

Geographers are concerned with an analysis of the location and spatial distribution of things and with the interrelationships among physical and cultural characteristics of places and regions. They find employment in several fields, with teaching attracting the largest number. Government agencies offer a variety of opportunities in such fields as cartography and map analysis, aerial photo interpretation, resource and land-use surveys, and

foreign area intelligence. Industrial concerns, research organizations, and federal, state, and municipal agencies employ sizeable numbers of geographers as field investigators, locational analysts, and planners.

Course requirements for an A.B. in geography are as follows:

(1) Geography 38, 148 and Geology 41, (2) six additional courses in geography (including 152, 157 and 171), (3) six or seven courses in allied studies and six or seven nondivisional courses selected with the approval of the undergraduate adviser.

Geography 38 and 48 or 148 are recommended as preparation for advanced geography courses.

- 9 FRESHMAN SEMINAR (3). The geographic spread of Western European and American values and systems throughout the world and their role in changing the environment and the geographic patterns of human activity. *Spring*. Eyre or Basile.
- 38 PHYSICAL GEOGRAPHY (3). Natural science credit. An assessment of the occurrence, characteristics and interrelationships of the earth's climates, landforms, natural vegetation and soils, especially as they result in problems and opportunities for man in his attempt to utilize his environment. *Fall and spring*. Staff.
- 48 THE CHANGING HUMAN ENVIRONMENT (3). A survey of the geography of human activity as it occurs throughout the world. Emphasis is placed upon current problems related to population, resources, regional development, urbanization, etc. *Fall and spring*. Staff.
- 51 HISTORICAL AND CULTURAL URBAN GEOGRAPHY (3). This course will explore some of the historical and cultural concomitants of human adjustment and accommodation to urban space through an examination of variations in the spatial patterns of urban settlements throughout the world. *Fall*. Moriarty.
- 52 ECONOMIC GEOGRAPHY (3). An introductory inquiry into the nature and geographical distribution of economic activity focusing upon physical and cultural environmental influences and "theories" of production and exchange. Variations in the pattern of economic activities between developed and underdeveloped countries are given special attention. *Fall*. Basile or Moriarty.
- 98 HONORS (3). Required of all senior students aspiring to Honors in Geography. Directed readings, research and writing. *Fall and spring*. Staff.
- 99 HONORS (3). Required of all senior students aspiring to Honors in Geography. Preparation of a senior thesis. *Fall and spring*. Staff.
- 110 METEOROLOGY (3). Prerequisite, Geography 38. Natural science credit. A systematic analysis of the lower atmosphere; weather elements and controls; methods of observation; means for synthesizing atmospheric conditions, and the principles of weather prediction are emphasized. *Fall*. Kopec.
- 115 CLIMATOLOGY (Formerly 155) (3). Prerequisite, Geography 38 or permission of the instructor. Natural science credit. A systematic/

regional approach to the study of climates. Emphasis is given to the physical processes underlying the distributional patterns of climates and the impact of climate on social activity. *Spring*. Kopec.

- 117 SOILS (3). Prerequisites, Geology 11, Chemistry 11-12 and/or permission of the instructor. Natural science credit. A study of the nature and geographic distribution of the soils of the world, with special emphasis on southeastern United States. *Three hours of lecture a week, in addition to field work. Fall*. Staff. (Not given (1970-1971).
- 121 PHYSIOGRAPHY OF THE WESTERN UNITED STATES (3). Prerequisites, Geography 38, Geology 41, or permission of the instructor. Natural science credit. Landforms and Pleistocene history of the western United States, including Alaska. *Fall*. Staff. (Not given 1970-1971).
- 122 PHYSIOGRAPHY OF THE EASTERN UNITED STATES (Geology 122) (3). Prerequisites, Geology 41 and 104 and/or permission of the instructor. Natural science credit. (1970-1971 and alternate years). *Spring*. White.
- 132 WORLD AGRICULTURAL PATTERNS AND ACTIVITIES (3). Prerequisites, Geography 38 or 48, or permission of the instructor. Agriculture's role in both industrial societies and the developing world. Crop distributions, farming systems and the world food problems are treated in detail. *Fall*. Hawley.
- 143 GEOBOTANY (Botany 143) (3). Description of the major vegetation types of the world including their distribution, structure, and physiognomy. The principle causes for the distribution of vegetation units, such as climate, soils, and vegetation history will be discussed. *Spring*.
- 148 FUNDAMENTAL CONCEPTS OF HUMAN GEOGRAPHY (3). A systematic study of the approaches, key concepts, and methods of human geography. Emphasis is given to the cultural landscape and location analysis within a thematic rather than a regional framework. *Fall*. Staff.
- 150 POPULATION GEOGRAPHY (3). A study of the spatial dimensions of population growth, density and movement and of the shifts in these patterns as they relate to changes in selected socio-economic and cultural phenomena. *Spring*. Florin.
- 151 URBAN GEOGRAPHY (3). A geographical study of the spatial structure and function of urban settlements. Emphasis on the regional relations of cities and central place theory. *Spring*. Browning.
- 152 ECONOMIC GEOGRAPHY (3). A study of the distribution, production, and utilization of the world's basic commodities. *Fall and spring*. (Not given Fall of 1970.) Basile or Moriarty.
- 153 POLITICAL GEOGRAPHY (3). Geographic elements in contemporary national and international affairs. Case studies are in Eurasia and Africa. *Fall and spring*. Eyre.
- 154 HISTORICAL GEOGRAPHY OF THE UNITED STATES (3). A study of selected past geographies of the United States with emphasis on the significant geographic changes through time. *Fall*. Florin.
- 155 RURAL SETTLEMENT (3). Prerequisites, Geography 48 or 152, junior standing, or consent of the instructor. Description and analysis of the

primary patterns of rural settlement morphology and the settling process in selected areas of the world. Staff. (Not given 1970-1971).

- 156 NATURAL RESOURCES (3). An analysis of selected natural resources with emphasis on distributions, use, management policy and conservation. Primary consideration given to the resources of Anglo-America. *Fall*. (Not given 1970-1971).
- 157 ANGLO-AMERICA (3). Topical and regional geography of America north of the Rio Grande, including elements of the physical, economic and cultural environment. *Fall and spring*. Florin and Hawley.
- 158 EUROPE (3). A survey of Europe west of the Soviet Union with an intensive study of the countries of western Europe. *Spring*. Staff. (Not given 1970-1971).
- 159 SOUTH AMERICA (3). A study of the environment, resources and activities of continental South America. *Fall*. Basile.
- 160 MIDDLE AMERICA (3). A correlation of the environment, resources and activities of the mainland countries from Mexico to Panama as well as of the Caribbean islands. *Spring*. Basile.
- 161 THE SOUTH (Formerly 131) (3). Present-day southern United States, approached historically through a study of its physical, economic, and cultural environment. *Fall*. Staff.
- 165 THE USSR (Formerly 175) (3). The natural environment and its significance in a Marxist society; agricultural problems; distribution of population; and the location of manufacturing in relation to resources and socialist planning principles. *Fall*. Lonsdale. (Not given 1970).
- 166 EASTERN ASIA (3). Geographical arrangements of population and human activities in their physical setting in China, Japan and Korea. *Fall*. Eyre.
- 167 SOUTHERN ASIA (3). Geographical arrangements of population and human activities in their physical setting in India, Pakistan, Ceylon and the countries of Southeast Asia. *Spring*. Eyre.
- 168 AFRICA (3). Primary emphasis on the dynamic spatial organization of Africa south of the Sahara. Individual countries will be studied in view of their geographic characteristics and problems. *Spring*. Birdsall.
- 171 CARTOGRAPHY (3). Introduction to maps and map-making, stressing drafting techniques, map design, and methods of representing data on maps. *One lecture and four laboratory hours a week, fall*. Kopec.
- 172 ADVANCED CARTOGRAPHY (3). Advanced study in map graphics. Application of graphic methods and material for illustrating spatial arrangements and relations of earth phenomena. Prerequisite, Geography 171. *Fall*. Kopec.
- 178 INTERPRETATION OF AERIAL PHOTOGRAPHY (3). Prerequisite, Geography 38 or permission of the instructor. An introduction to photographic interpretation techniques and applications. *Fall*. Hawley.
- 179 FIELD METHODS (3). Prerequisite, Geography 178, or permission of the instructor. Application of field techniques and procedures to specific problems in the local area. *Spring*. Hawley.

- 183 INDUSTRIAL LOCATION (3). Factors in the regional location of manufacturing, location theory, measures of manufacturing, locational decision-making, and a survey of selected industries. *Spring*. Lonsdale.
- 185 TRANSPORTATION GEOGRAPHY (3). Prerequisites, Geography 48, 148 or 152, or permission of the instructor. Examines transportation as a spatial factor in the economic and political integration of regions; also, regional variations in mode development, and applications of transportation as a movement system. *Spring*. Birdsall.
- 190 QUANTITATIVE METHODS IN GEOGRAPHY (3). Introduction to the application of statistical methods to geographic problems with some computer use in their solution. Attention given to analysis of areal data and areal sampling. *Fall*. Birdsall or Moriarty.

DEPARTMENT OF GEOLOGY

JOHN MANLEY DENNISON, *Chairman*

The course requirements for the A.B. degree with major in geology are as follows: (1) three to five courses in geology in addition to Geology 11 or 41, 42, 101, 110, and 111; (2) five to seven courses in allied sciences, including two courses each in introductory chemistry and physics (which may be taken in the General College); (3) five to seven courses outside the Division of Natural Sciences. The A.B. program is not considered sufficient training for professional work in geology.

For B.S. in Geology the following are required:

GENERAL COLLEGE

(For freshman and sophomore years, see page 36.)

COLLEGE OF ARTS AND SCIENCES

Division of Natural Science—11 courses; Non-divisional—8 courses.

MAJOR

Geology 103, 128, 129 and *two to four* of the following: Geology 102, 104, 105, 108, 109 or 165, 142, 144.

ALLIED SCIENCES¹

Physics 24, 25 (or 26, 27) and *four to two* courses in the Departments of Botany, Chemistry, Information Science, Mathematics, Physics, Statistics, or Zoology, *except* Botany 44 and Mathematics courses numbered below 33.

NON-DIVISIONAL

English 33, three Social Science, Humanities, or Fine Arts Electives and four non-divisional electives.

- 11 PHYSICAL GEOLOGY (4). Nature and origin of minerals and rocks, volcanoes, earthquakes, interior of the earth, mountains, soil, subsurface water, coastal features, landscape, and the geologic work of glaciers, streams, and wind. *Three lecture and two laboratory hours a week, fall and spring*. Staff.

1. With written permission of the departmental adviser, certain courses in the Division of Health Affairs may be substituted for the above allied science electives.

- 15 GEMS AND GEM MATERIALS (3). Mineral identification, crystal orientation, and the cutting and polishing of common gem stones. *Two lecture and two laboratory hours a week, fall and spring.* Mann, Hurlburt.
- 18 ENVIRONMENTAL GEOLOGY (3). Geologic hazards and pollution, geological processes in ecology, mineral exploitation and conservation, and urban geology. *Fall.* Staff.
- 41 PHYSICAL GEOLOGY FOR SCIENCE MAJORS (4). Open to all students majoring or intending to major in the Division of Natural Sciences, and to students with high school earth science credit or permission of the instructor. An interdisciplinary approach to physical geology emphasizing the principles of physics, chemistry, and mathematics which are pertinent to earth science. Recommended for those students intending to major in geology. Credit cannot be received for both Geology 11 and Geology 41. *Three lecture and two laboratory hours a week, fall and spring.* Ragland, Dunn, Fullagar, Watkins.
- 42 HISTORICAL GEOLOGY (4). Prerequisite, Geology 11 or 41. The geologic history of the earth as recorded in the rocks and the fossils they contain. The development of life on earth from its ancient beginnings through prehistoric man. *Three lecture and two laboratory hours a week, fall and spring.* Wheeler, St. Jean, Textoris, Dennison.
- 98 HONORS COURSES² (3). *Fall and spring.* Staff.
- 99
- 100 SPECIAL PROBLEMS IN GEOLOGY (1-4). (Registration requires approval of the departmental chairman. *Fall and spring.* Staff.
- 101 MINERALOGY (4). Prerequisites, Chemistry 11 and Geology 11 or 41. *Two lecture and six laboratory hours a week, fall.* Butler, Fullagar.
- 102 PRINCIPLES OF PALEONTOLOGY (3). Prerequisite, Geology 42. Fundamental theories and concepts basic to the interpretation of the fossil record. *Fall.* St. Jean.
- 103 STRUCTURAL GEOLOGY (5). Prerequisite, Geology 11 or 41. *Three lecture and six laboratory hours a week, spring.* Dunn.
104. GEOMORPHOLOGY (4). Prerequisite, Geology 11 or 41. *Three lecture and two laboratory hours a week, fall.* White.
- 105 STRATIGRAPHY (4). Prerequisite, Geology 42. *Three lecture and two laboratory hours a week, spring.* Wheeler.
- 108 ECONOMIC GEOLOGY (4). Prerequisites, Geology 103, 110, 111. A study of mineral deposits. *Three lecture and two laboratory hours a week, fall.* Mann.
- 109 ELEMENTS OF GEOPHYSICS (4). Prerequisites, Geology 103, general physics. *Three lecture and two laboratory hours a week, spring.* Watkins.
- 110 IGNEOUS AND METOMORPHIC ROCKS (3). Prerequisites, Geology 101, Geology 42, or permission of the instructor. The megascopic description and the origin of the igneous and metamorphic rocks. *Two lecture and three laboratory hours a week, spring.* Fullagar.

2. See requirements in College of Arts and Sciences.

- 111 SEDIMENTARY ROCKS (2). Prerequisites, Geology 101, Geology 42, or permission of the instructor. Megascopic description and origin of sedimentary rocks. *One lecture and two laboratory hours a week, spring.* Textoris.
- 115 GEOLOGIC HISTORY OF THE VERTEBRATES (3). Prerequisite, Geology 42 or Zoology 41. (1971-1972 and alternate years.) *Fall.* Wheeler.
- 116 MORPHOLOGY AND CLASSIFICATION OF MEGA-INVERTEBRATE FOSSILS (4). Prerequisite, Geology 102. (1971-1972 and alternate years.) *Three lecture and three laboratory hours a week, spring.* St. Jean.
- 117 CLAY MINERALOGY (4). Prerequisites, Geology 110 and 111. Includes X-ray diffraction studies of clay minerals. (1970-1971 and alternate years.) *Two lecture and four laboratory hours a week, spring.* Ingram.
- 122 PHYSIOGRAPHY OF THE EASTERN UNITED STATES (3). Prerequisites, Geology 11 or 41. Geology 104, or permission of the instructor. (1971-1972 and alternate years.) *Fall.* White.
- 128 SUMMER FIELD COURSES IN GEOLOGY (8). Prerequisites, Geology 101, 103, 110, 111. *Equivalent to eight hours a week for one semester, first summer session only.* Dunn, Butler.
- 142 PRINCIPLES OF GEOCHEMISTRY (4). Prerequisites, Geology 11 or 41, Chemistry 21, or permission of the instructor. (1971-1972 and alternate years.) *Three lecture and three laboratory hours a week, spring.* Ragland.
- 144 OPTICAL MINERALOGY (4). Prerequisites, Geology 101, 110, 111. *Two lecture and six laboratory hours a week, fall.* Mann, Ragland.
- 145 ELEMENTARY PETROGRAPHY AND PETROLOGY (4). Prerequisites, Geology 110, 144. *Two lecture and six laboratory hours a week, spring.* Butler.
- 147 ISOTYPE GEOLOGY (3). Prerequisites, Geology 101, 110, 111, general chemistry. Study of variations in the stable and radioactive isotopic composition of elements in geothermometry, geochronology, and origin of mineral deposits. (1971-1972 and alternate years.) *Three lecture hours a week, fall.* Fullagar.
- 148 X-RAYS AND THE SOLID STATE (Physics 168). (3). Prerequisites, Elementary physics, Mathematics 31, 32. The structure, symmetry, physical and chemical properties of crystals. *Fall.* Smith.
- 152 STATISTICAL METHODS IN GEOLOGY (3). Prerequisites, integral calculus and an introductory course in Statistics. Application of statistical techniques to geological problems. *Two lecture and three laboratory hours a week, spring.* Dennison.
- 161 APPLIED GEOPHYSICS (4). Prerequisites, Mathematics 32, Physics 24, 25. Relation of the earth's gravity and magnetic fields to geologic parameters. *Three lecture and two laboratory hours a week, fall.* Watkins.
- 162 APPLIED GEOPHYSICS (4). Prerequisites, Mathematics 32, Physics 24, 25. Seismic techniques in geologic investigations. *Three lecture and two laboratory hours a week, spring.* Watkins.

- 165 THE PHYSICS OF THE EARTH (3). Prerequisites, Math 32, Physics 24, 25, Chemistry 21. The interior of the earth deduced from seismology, heat flow, gravity; the earth's magnetic field; geophysical investigation of continents and ocean basins; age of the earth. *Spring*. Watkins and Palmatier.
- 166 VULCANOLOGY (3). Prerequisite, Geology 11 or 41. This course serves as an introduction to vulcanism and related phenomena. (1971-1972 and alternate years.) *Fall*. Watkins.
- 167 EARTHQUAKES AND RELATED PHENOMENA (3). Prerequisite, Geology 11 or 41. Earthquakes: their causes and effects; methods of investigation; the theory and operation of seismic recording devices. (1971-1972 and alternate years.) *Fall*. Watkins.
- 173 GEOLOGICAL OCEANOGRAPHY (4). Prerequisites, Geology 11 or 41, 42. Introduction to the geomorphology, sedimentation, stratigraphy, vulcanism, structure, and geologic history of continental shelves, slopes, and ocean basins. *Three lecture and two laboratory hours a week, fall*. Ingram, Textoris.
- 185 PALEONTOLOGIC TECHNIQUES (3). Prerequisite, Geology 102. Laboratory techniques applicable to the preparation and analysis of mega- and micro-invertebrate fossils. (1970-1971 and alternate years.) *One hour lecture and six hours laboratory a week, fall*. St. Jean.
- 186 PALEOCOLOGIC INTERPRETATIONS OF MEGA-INVERTEBRATE FOSSILS (4). Prerequisite, Geology 102 and 116 or permission of the instructor. (1970-1971 and alternate years.) *Three hours lecture and three hours laboratory a week, spring*. St. Jean.
- 187 PALEOZOIC INVERTEBRATE INDEX FOSSILS (4). Prerequisite, Geology 102, 105 or permission of the instructor. (1970-1971 and alternate years.) *Three hours lecture and three hours laboratory a week, fall*. Dennison.
- 188 MESOZOIC AND CENOZOIC INVERTEBRATE INDEX FOSSILS (4). Prerequisites, Geology 102, 105 or permission of the instructor. (1970-1971 and alternate years.) *Three hours lecture and three hours laboratory a week, spring*. Wheeler.

DEPARTMENT OF GERMANIC LANGUAGES

CHRISTOPH E. SCHWEITZER, *Chairman*

Students interested in having their undergraduate major in German should consult the departmental adviser in the second semester of their sophomore year, if possible. To fulfill the departmental requirements for the undergraduate major a minimum of six courses, in addition to German 21, must be taken from the following: German 22, 31 or 32 or both, 90, plus three literature courses from the 100 bracket. The Department offers to qualified undergraduate majors an opportunity to work for honors degrees. Prospective candidates for honors degrees should see the departmental adviser at the beginning of their junior year.

- 1-2 ELEMENTARY GERMAN¹ (6). *Both semesters.* Eger; staff.
- 1-2(I) INTENSIVE ELEMENTARY GERMAN (6 each). An intensive introduction to elementary German which permits two semesters' work to be completed in one semester. *Fall.* Eger.
- 3-4 INTERMEDIATE GERMAN² (6). *Both semesters.* Eger; staff.
- 3-4(I) INTENSIVE INTERMEDIATE GERMAN (6 each). An intensive introduction to intermediate German which permits two semesters' work to be completed in one semester. *Spring.* Eger.
- 21 ADVANCED GERMAN (3). Prerequisite, German 4 or equivalent. Reading of selected modern prose after 1880. *Both semesters.* Francke; staff.
- 22 ADVANCED GERMAN (3). Prerequisites, German 4 or equivalent and permission of departmental adviser. Reading of prose selected from the general areas of German Classicism, Romanticism, and Poetic Realism (ca. 1770 to ca. 1870). *Both semesters.* Mayo.
- 24 SELECTED READINGS IN GERMAN (3). Prerequisite, German 4 or equivalent. (May be substituted for German 21 to satisfy the language requirement for students not majoring in German.) Readings in modern German prose in the fields of science, philosophy literature and fine arts. *Both semesters.* Mayo.
- 31 CONVERSATIONAL GERMAN (3). Prerequisite, German 4 or equivalent. *Fall.* Stambaugh.
- 32 ADVANCED CONVERSATIONAL GERMAN (3). Prerequisite, German 31 or permission of instructor. *Spring.* Stambaugh.
- 90 ADVANCED GERMAN GRAMMAR (3). Prerequisite, German 22 or equivalent. Review, expansion, and drill. Required of undergraduate majors and candidates for advanced degrees in German. The course yields no credit for the latter. *Fall.* Stambaugh.
- 103 EXERCISES IN STYLISTICS (3). Prerequisites, German 32 and 90, or equivalents. A *rigorosum* in advanced oral and written composition. Open to undergraduate majors in German or permission of the departmental adviser. Required of candidates for advanced degrees in German. *Spring.* Stambaugh.
- 105 ELEMENTARY DUTCH (3 each). Prerequisites, permission of the
- 106 instructor. Rapid introduction to modern Dutch with emphasis on reading. *Alternate years, fall and spring.* Francke.
- 109 GERMAN PROSE IN THE NINETEENTH CENTURY (3). Prerequisite, German 22 or equivalent. Study of the major prose writers of the nineteenth century. Readings, lectures, and reports. *Fall.* Mews.
- 111 GERMAN DRAMA IN THE NINETEENTH CENTURY (3). Prerequisite, German 22 or equivalent. Kleist, Grabbe, Büchner, Grillparzer, Hebbel, Ludwig. Readings, lectures, and reports. *Spring.* Mews.
- 115 THE GERMAN LYRIC FROM HOLDERLIN TO THE PRESENT (3). Prerequisite, German 22 or equivalent. An analysis of the chief lyric

1. Upper-college students who have completed the language requirements are allowed credit for a single elementary language course, i.e., 1 or 2 in the 1-2 series.

2. German 3 and 4 may be taken separately for credit by properly qualified students who have fulfilled their language requirements.

poets, movements, and types of the past one hundred and fifty years. *Fall*. Reichert.

- 131 GERMAN LITERATURE OF THE EIGHTEENTH CENTURY (3). Prerequisite, German 22 or equivalent. The various literary trends of the eighteenth century (exclusive of Goethe and Schiller), with special emphasis on Lessing, Wieland, Klopstock, and Herder. *Spring*. Schweitzer.
- 139 GERMAN ROMANTICISM (3). Prerequisite, German 22 or equivalent. Prose literature of the first and second German romantic schools (1795-1830). *Spring*. Mayo.
- 141 SCHILLER (3). Prerequisite, German 22 or equivalent. (1) Life and time; (2) dramatic works; (3) philosophic and aesthetic theory. *Spring*. Reichert.
- 150 GERMAN NOVELLE FROM GOETHE TO THE PRESENT (3). Prerequisite, German 22 or equivalent. Study of the qualities and evolution of the German novelle by readings from Goethe, Jean Paul Eichendorff, Chamisso, Brentano, E. T. A. Hoffman, Keller, Meyer, Storm, Stifter, Mann, Hauptmann, Schnitzler, Bergengruen and Werfel.
- 152 THE GERMAN NOVEL SINCE 1890 (3). Prerequisite, German 22 or equivalent. A survey of eminent German novelists since Fontane, including among others Thomas and Heinrich Mann, Hesse, Kafka, Musil, Broch, Werfel, Wiechert, Böll, Frisch, and Grass. *Fall*, Reichert.
- 153 THE GERMAN DRAMA SINCE 1890 (3). Prerequisite, German 22 or equivalent. A comprehensive survey of modern German dramatists from Hauptmann to Brecht, Frisch and Dürrenmatt. *Spring*. Reichert.
- 155 GOETHE IN ENGLISH TRANSLATION (Comparative Literature 155) (3). *Fall*. Schweitzer.
- 158 THE GOLDEN AGE OF DUTCH LITERATURE (RENAISSANCE AND BAROQUE) (3). Prerequisite, permission of the instructor. Masterpieces of Dutch literature of Renaissance and mainly Baroque; literary relations with German and other literatures will be stressed. *Spring of alternate years*. Tax, Francke.
- 161 HISTORY OF THE GERMAN LANGUAGE (3). Prerequisite, a good reading knowledge of German. *Spring*. Smith.
- 171 GERMAN CIVILIZATION (3). Lectures given in German. Germany's cultural achievements in broad outline. *Fall*. Friederich.
- 181 ELEMENTARY NORWEGIAN (6). Prerequisites, satisfactory knowledge of German (represented by German 21 or equivalent) and permission of the instructor. Rapid introduction to modern Norwegian (bokmaal) with particular emphasis on reading. 181, *Fall*; 182, *Spring*. Smith.
- 187 INTRODUCTION TO MODERN SCANDINAVIAN LITERATURE (3). Prerequisite, junior standing or higher. An introduction to nineteenth century and twentieth century Scandinavian literature (in translation) with particular reference to the work of Ibsen and Strindberg, and modern fiction. *Fall*. Bergholz.
- 191 TEACHING METHODS AND MATERIALS (3 credit hours for undergraduate students only). For prospective teachers of German. *Fall of alternate years*. Eger.

GREEK
(See Classics)

HEBREW
(See Romance Languages)

DEPARTMENT OF HISTORY

JAMES L. GODFREY, *Chairman*

The undergraduate major program in history is designed to train the mind in the study of human affairs, prepare candidates for graduate training in history, and provide a general foundation for many occupations and interests.

The major requirement is eight courses in history. These are normally taken in the junior and senior years. Either four or five must be chosen from a single field of history and the rest from at least two other fields and/or from the History of Science. The fields are: Ancient and Medieval History; Modern Europe; English History; United States; Latin America; Russia and the Soviet Union; East Asia; Africa and the Middle East. Courses in Eastern European History may count in either Modern Europe, or in Russia and the Soviet Union, but not in both. Of the eight courses counted for the major, at least six must be completed with grades of *C* or better, and six of the eight be numbered 50 or above. Beyond these eight required courses, only two additional history courses are allowed; these must be counted as General College electives.

The twelve elective courses of the junior and senior years must be chosen from disciplines other than history. From five to seven of these must come from allied disciplines, or, in other words, from the offerings of departments classified in the same division as History. History is listed as a department in both the Division of the Social Sciences and the Division of the Humanities. Therefore, students who major in History in the Division of the Social Sciences will take their allied courses in other departments of the Division, and students who major in History in the Division of the Humanities will take their courses in other departments of the Division of the Humanities and the Fine Arts. *Non-divisional* electives will come from outside the Division of the student's choice and may include courses in the Natural Sciences. As far as junior-senior electives are concerned, no more than four may be chosen from the offerings of any single department. The departments of each division are listed in this bulletin in the section on the College of Arts and Sciences.

The departmental honors program is open to any qualified

history major whose overall academic average is *B* or better, though, in exceptional cases, the requirement of a *B* average may be waived. The first course (97) in the honors program should be taken in either semester of the junior year. The second course (98ab), a two-semester course with six semester hours of credit, should ordinarily be taken in the senior year. History 98ab is offered by any History Department staff member and requires either a research paper or an historiographical essay based on an extensive supervised reading program. An examining committee of three faculty members will recommend that the student who has completed History 97 and History 98ab, depending on the quality of his work, be graduated with highest honors, or with honors, or merely with credit for the honors courses he has passed.

- 11 HISTORY: FOUNDATIONS OF WESTERN CIVILIZATION (3). *Fall and spring*. Staff.
- 12 HISTORY: WESTERN CIVILIZATION FROM THE AGE OF DISCOVERY TO THE TWENTIETH CENTURY (3). *Fall and spring*. Staff.
- 13 HISTORY: WESTERN CIVILIZATION IN THE TWENTIETH CENTURY (3). *Fall and spring*. Staff.
- 21 AMERICAN HISTORY TO 1865: GENERAL COURSE (3). Sophomore elective, open to juniors and seniors. *Both semesters*. Staff.
- 22 AMERICAN HISTORY SINCE 1865: GENERAL COURSE (3). Sophomore elective, open to juniors and seniors. *Both semesters*. Staff.
- 23 TRADITIONAL EAST ASIA (3). Sophomore elective, open to juniors and seniors. *Fall*. Kessler.
- 24 EAST ASIA IN MODERN TIMES (3). Sophomore elective, open to juniors and seniors. *Spring*. Kessler.
- 25 A SURVEY HISTORY OF THE ISLAMIC MIDDLE EAST (3). Sophomore elective, open to juniors and seniors. *Fall*. Bodman.
- 27 HISTORY OF AFRICA I (3). Sophomore elective, open to juniors and seniors. *Fall*. Dunbar.
- 28 HISTORY OF AFRICA II (3). Sophomore elective, open to juniors and seniors. *Spring*. Dunbar.
- 30 RUSSIA FROM EARLIEST TIMES TO THE EMANCIPATION OF THE SERFS, 862-1861 (3). Open to sophomores, juniors, and seniors. *Fall*. Brooks, Griffiths.
- 31 HISTORY OF RUSSIA FROM 1861 TO THE PRESENT (3). Open to sophomores, juniors, and seniors. *Spring*. Anderle, Brooks.
- 41 ANCIENT HISTORY (3). Sophomore elective, open to juniors and seniors. *Fall*. Boren.
- 42 MEDIEVAL HISTORY (3). Sophomore elective, open to juniors and seniors. *Spring*. Behrends.

- 44 ENGLISH HISTORY TO 1660 (3). Sophomore elective, open to juniors and seniors. *Fall*. Cell. Pfaff, Baxter.
- 45 ENGLISH HISTORY SINCE 1660 (3). (Either 44 or 45 may be taken separately.) Sophomore elective, open to juniors and seniors. *Spring*. Cell, Pfaff, Soloway.
- 46 LATIN AMERICAN HISTORY: COLONIAL AND REVOLUTIONARY PERIODS (3). Sophomore elective, open to juniors and seniors. *Fall*. Woodward.
- 47 LATIN AMERICAN STATES DURING THE NATIONAL PERIOD (3). Sophomore elective, open to juniors and seniors. *Spring*. Bierck.
- 48 MODERN EUROPEAN HISTORY, 1500-1815 (3). Sophomore elective, open to juniors and seniors. *Both semesters*. Staff.
- 49 MODERN EUROPEAN HISTORY SINCE 1915 (3). Sophomore elective, open to juniors and seniors. *Both semesters*. Staff.
- 51 HISTORY OF THE ANCIENT NEAR EAST (3). Junior-senior elective, open to sophomores. *Spring*. Boren.
- 52 HISTORY OF GREECE (3). Junior-senior elective, open to sophomores. *Fall*. Boren.
- 53 HISTORY OF ROME (3). Junior-senior elective, open to sophomores. *Spring*. Boren.
- 65 EUROPE IN THE HIGH MIDDLE AGES, 900-1300 (3). Junior-senior elective, open to sophomores. *Fall*. Behrends.
- 68 HISTORY OF SOUTH AFRICA (3). Prerequisite: History 27 or 28. Historical development of a plural society from 1652 to the present, with attention to various traditions of historiography which have developed concerning South African history. *Fall*. Dunbar.
- 69 THE TRANS-ATLANTIC SLAVE TRADE (3). *Spring*. Dunbar.
- 75 AMERICAN BIOGRAPHY (3). Junior-senior elective, open to sophomores. *Fall*. Walker.
- 77 AMERICAN MILITARY HISTORY, 1776-1965 (3). *Fall and spring*. Leutze.
- 80 MODERN JAPANESE HISTORY (3). Junior-senior elective, open to sophomores. *Fall*. Kessler.
- 81 INTELLECTUAL HISTORY OF CHINA (3). Junior-senior elective, open to sophomores. *Spring*. Kessler.
- 85 THE UNITED STATES IN THE PACIFIC AREA (3). *Fall*. Miller.
- 90 TOPICS IN HISTORY (3). The subject matter of the course will vary with the instructor and the topic. Each course will concern itself with a study in depth of some problem in history. Open to history majors. Registration in the course must be preceded by a conference with the instructor. *Both semesters*. Staff.
- 91 INDEPENDENT STUDIES IN HISTORY (3). For the history major who wishes to create and pursue an historical project under supervision of a selected instructor. Permission required. Course may not be taken more than twice. *Fall and spring*. Staff.

- 97 INTRODUCTORY HONORS COURSE: THEORIES OF HISTORY (3). Required of all students reading for honors in history. Open to non-honors history majors, with the permission of the instructor. *Both semesters.* Ryan.
- 98ab SENIOR HONORS COURSE (6). Required of all students reading for honors in history. *Both semesters.* Staff.
- NOTE: Courses in Directed Teaching of the Social Sciences and in Materials and Methods of Teaching the Social Sciences will be found under the School of Education.
- 101 THE DEVELOPMENT OF ISLAMIC CIVILIZATION AND INSTITUTIONS (3). No prerequisites, although History 25 is recommended. *Spring.* Bodman.
- 104 HISTORY OF WEST AFRICA (3). Prerequisite: History 27 or consent of instructor. Select West African societies prior to 1900 will be studied. Discussions and readings from anthropological as well as historical studies concerning political and economic processes in traditional African societies. *Fall.* Dunbar.
- 105 RESISTANCE MOVEMENTS AND NATIONALISM IN AFRICA (3). Prerequisite: previous courses in African history and/or politics. An attempt to define the features of various movements in Africa during the nineteenth and twentieth centuries which sought to resist foreign domination in the cultural and political spheres. *Spring.* Dunbar.
- 107 HISTORY OF ROME, 133-27 B. C. (3). *Fall.* Boren.
- 109 GREEK AND ROMAN HISTORICAL LITERATURE (Classics 109) (3). *Spring.* Allen (of the Department of Classics).
- 110 EUROPEAN COLONIZATION OF AMERICA (3). Not open to graduate majors in American history. *Fall.* Nelson.
- 111 EARLY AMERICAN HISTORY, 1689-1789 (3). Not open to graduate majors in American history. *Spring.* J. Nelson, Ryan.
- 112 UNITED STATES HISTORY, 1789-1848 (3). Not open to graduate majors in American history. *Fall.* Cathey; *spring.* Williamson.
- 113 UNITED STATES HISTORY, 1848-1900 (3). Not open to graduate majors in American history. *Both semesters.* Klingberg, Walker.
- 114 UNITED STATES HISTORY, 1900-1932 (3). Not open to graduate majors in American history. *Fall.* Miller; *spring.* Sitterson.
- 115 UNITED STATES HISTORY SINCE 1932 (3). Not open to graduate majors in American history. *Spring.* Filene.
- 117 THE PROMISE OF URBANIZATION: AMERICAN CITIES IN THE NINETEENTH AND TWENTIETH CENTURIES (3). *Spring.* Lotchin.
- 120 MEDIEVAL CHURCH HISTORY (3). History of the Christian Church from c. 600 to c. 1300. *Spring.* (1971 and alternate years). Pfaff.
- 121 MEDIEVAL THOUGHT AND LEARNING (3). (1970-1971 and alternate years.) *Fall.* Behrends.
- 122 EUROPE IN THE EARLY MIDDLE AGES (3). (1969-1970 and alternate years.) *Fall.* Behrends.
- 123 HISTORY OF SPAIN (3). *Fall.* Woodward.

- 124 THE RENAISSANCE (3). *Fall*. Headley.
- 125 INTELLECTUAL AND SOCIAL HISTORY OF EUROPE, EARLY PERIOD (3). *Fall*. Headley.
- 126 INTELLECTUAL HISTORY OF EUROPE SINCE THE FRENCH REVOLUTION (3). (1969-1970 and alternate years.) *Spring*.
- 128 EUROPE UNDER THE OLD REGIME, 1715-1787 (3). *Fall*. Taylor.
- 129 FRANCE FROM 1787 TO 1870 (3). *Fall*. Taylor.
- 130 EUROPEAN FOUNDATIONS OF MODERN EDUCATION (Education 142) (3). *Fall*. King, Holton, Phillips (of the School of Education).
- 131 THE REFORMATION (3). *Spring*. Headley.
- 132 EUROPE IN THE SEVENTEENTH CENTURY (3). *Spring*. Headley.
- 133 EUROPE IN AN AGE OF REVOLUTION, 1787-1815 (3). *Spring*. Taylor.
- 134 EUROPE, 1815-1871 (3). *Fall*. Cecil.
- 135 EUROPE FROM 1871 TO 1918 (3). *Spring*. Snell.
- 136 EUROPE SINCE 1918 (3). *Fall*. Pegg.
- 137 MEDIEVAL ENGLAND (3). *Spring*. Pfaff.
- 138 TUDOR AND STUART ENGLAND, 1485-1660 (3). *Fall*. Baxter.
- 139 ENGLAND IN THE EIGHTEENTH CENTURY, 1660-1815 (3). *Spring*. Baxter.
- 140 GREAT BRITAIN FROM 1815 TO 1901 (3). *Fall*. Soloway.
- 141 GREAT BRITAIN FROM 1901 TO THE PRESENT (3). *Spring*. Godfrey.
- 142 DEVELOPMENT OF THE ENGLISH CONSTITUTION (Political Science 154) (3). *Fall*. Godfrey.
- 143 THE DIPLOMATIC HISTORY OF THE UNITED STATES, 1776-1914 (3). *Fall*. Wells.
- 144 THE DIPLOMATIC HISTORY OF THE UNITED STATES, 1914 TO THE PRESENT (3). *Spring*. Wells.
- 145 THE HISTORY OF AMERICAN IDEAS, 1607-1860 (3). *Fall*. Douglass.
- 146 THE HISTORY OF AMERICAN IDEAS, 1860 TO THE PRESENT (3). *Spring*. Miller.
- 147 AMERICAN CONSTITUTIONAL HISTORY TO 1876 (3). *Fall*. Semonche.
- 148 AMERICAN CONSTITUTIONAL HISTORY SINCE 1876 (3). *Spring*. Semonche.
- 149 STUDIES IN AMERICAN SOCIAL HISTORY (3). *Fall*. Mathews.
- 150 HISTORY OF SCIENCE: THE GREEKS TO NEWTON (3). *Fall*. McVaugh.
- 151 HISTORY OF SCIENCE: GALILEO TO EINSTEIN (3). *Spring*. McVaugh.

- 152 TOPICS IN THE HISTORY OF SCIENCE (3). Permission of the instructor. One year of college physics or history of science advantageous. *Spring*. McVaugh.
- 155 HISTORY OF THE CONGO (3). *Spring*.
- 158 THE BRITISH EMPIRE, 1485-1857 (Political Science 158) (3). *Fall*. Cell.
- 159 THE BRITISH EMPIRE AND COMMONWEALTH 1857 TO THE PRESENT (Political Science 159) (3). *Spring*. Cell.
- 161 NORTH CAROLINA I, 1524-1835 (3). Open only to seniors and graduate students. *Fall and spring*. Lefler, Powell, Patton.
- 162 NORTH CAROLINA II, 1835 TO THE PRESENT (3). Open only to seniors and graduate students. *Both semesters*. Lefler, Patton.
- 163 THE OLD SOUTH (3). *Both semesters*. Williamson, Copeland.
- 164 THE SOUTH SINCE RECONSTRUCTION (3). *Both semesters*. Tindall.
- 165 HISTORY OF THE NEGRO IN AMERICA (3). *Fall*. Pulley.
- 167 ECONOMIC HISTORY OF THE UNITED STATES, 1607-1865 (3). *Spring*. Cathey.
- 168 HISTORY OF AMERICAN BUSINESS DURING THE NINETEENTH CENTURY (3). *Spring*. Douglass.
- 170 SOCIAL AND EDUCATIONAL HISTORY OF THE UNITED STATES (Education 143) (3). *Spring*. King, Holton, Phillips (of the School of Education).
- 171 CHILE AND THE RIO DE LA PLATA REGION (3). *Fall*. Woodward.
- 172 INTER-AMERICAN ECONOMIC AND CULTURAL RELATIONS (3). *Spring*. Bierck.
- 173 THE BOLIVARIAN STATES SINCE INDEPENDENCE (3). (1971-1972 and alternate years.) *Fall*. Bierck.
- 174 HISTORY OF MEXICO (3). (1970-1971 and alternate years.) *Spring*. Bierck.
- 175 THE CONSTITUTION OF THE UNITED STATES (Political Science 155) (3). *Both semesters*. Wallace (of the Department of Political Science).
- 176 ECONOMIC HISTORY OF LATIN AMERICA SINCE 1760 (3). *Spring*. Woodward.
- 177 CENTRAL AMERICA AND THE CARIBBEAN SINCE 1821 (3). *Spring*. Woodward.
- 178 BRAZIL, 1500-1821 (3). *Fall*.
- 179 BRAZIL SINCE INDEPENDENCE (3). *Spring*.
- 180 IMPERIAL RUSSIA IN THE EIGHTEENTH CENTURY, 1689-1796 (3). *Spring*. Griffiths.
- 181 RUSSIA, 1796-1917 (3). *Spring*. Foust.
- 182 THE SOVIET UNION, 1917-1939 (3). *Fall*. Foust.

- 183 THE SOVIET UNION, 1939-PRESENT (3). *Spring*. Foust.
- 184 MEDIEVAL RUSSIA (3). *Fall*. Anderle.
- 185 THE HISTORY OF MUSCOVITE RUSSIA, 1462-1689 (3). *Fall*. Griffiths.
- 186 INTELLECTUAL HISTORY OF IMPERIAL RUSSIA (3). *Fall*. Brooks.
- 188 EASTERN EUROPE, 1815-1918 (3). *Fall*. Anderle.
- 189 EASTERN EUROPE SINCE 1918 (3). *Spring*. Anderle.
- 190 THE MODERN MIDDLE EAST: A CULTURAL HISTORY (3). *Fall*. Bodman.
- 191 THE MIDDLE EAST SINCE THE FIRST WORLD WAR (3). *Spring*. Bodman.
- 192 HISTORY OF CHINA, 1800-1914. *Fall*. Kessler.
- 193 HISTORY OF CHINA SINCE 1914 (3). *Spring*. Kessler.
- 194 DIPLOMATIC HISTORY OF THE FAR EAST, 1800-1914 (3). *Fall*. Kessler.
- 195 DIPLOMATIC HISTORY OF THE FAR EAST SINCE 1914 (3). *Spring*. (Not offered 1970-1971).
- 197 HISTORY OF ITALY 1870-PRESENT (3). Italian liberalism: balance sheet for 1870-1922; church and state: duel and dualism; Italy's Southern problem; Italy and World War I; the rise and fall of facism. *Spring*. Huddleston.
- 198 GERMANY 1815-1914. (3). *Fall*. Cecil.
- 199 HISTORY OF GERMANY SINCE 1914 (3). *Spring*. Snell.

SCHOOL OF JOURNALISM

JOHN BERRY ADAMS, *Dean*

Courses in the School of Journalism are open to juniors, seniors, and graduate students in the University who meet the prerequisites or obtain permission of the instructor or the Dean.

Journalism courses by arrangement with the College of Arts and Sciences have been grouped into three categories: (1) Courses allied to the Humanities; (2) Courses allied to the Social Sciences; and (3) Professional courses. Students enrolled in the College of Arts and Sciences may elect courses in the first two categories, but they may not take courses in the Professional category for credit toward a degree in the College of Arts and Sciences without prior approval by the Administrative Board of the College of Arts and Sciences.

Humanities-allied courses are 53, 56, 58, 60, 73, and 111. Those in the Social Science category are 154, 146, 151, 161, 165, 159, 170, 171, 172 and 173. (However, 170 and 172 are accepted for credit for majors in RTVMP.)

Journalism students interested in International Studies may take many of the courses in that curriculum, including the "core courses," in meeting journalism requirements in history and political science and as electives. Those interested should consult the Dean of the School of Journalism.

Curriculum leading to the degree of Bachelor of Arts in Journalism: The General College requirements for Journalism students are the same as those required of other candidates for the Bachelor of Arts degree. In addition, Journalism students should take Political Science 41 as their third social science requirement in General College. Students are required to take, in addition to Political Science 41, introductory courses in two of the following fields: economics, sociology, or psychology. Students are urged to complete the prerequisite social science courses in the sophomore year; otherwise they must be completed in the junior year.

The professional program of the School of Journalism consists of eight to ten journalism courses, four of which are specified; two American history or North Carolina history courses; Political Science 41; two advanced courses in any one of four social science departments: economics, political science, psychology, or sociology. Prerequisites for these advanced courses are respectively: Economics 31 and 32 or 61, Political Science 41, Psychology 26, or Sociology 51.

The four journalism courses required of all candidates for the Bachelor of Arts in Journalism degree are 53, News Writing; 57, News Editing; 161, History of American Journalism; and 184, The Press, the Constitution, and the Law.

Journalism assignments must be typewritten; therefore it is essential that each student be able to type with reasonable skill.

A student may earn the A.B. in Journalism with a double major by taking at least three courses more than the minimum required for the usual A.B. and by meeting all major requirements in the School of Journalism and the other discipline.

An honors program is available to students who have demonstrated their ability to perform distinguished work in journalism. Admission to the honors courses (98 and 99) is based upon an over-all average of B or better, recommendation from a faculty member in the School, and approval by the Chairman of the honors program. Students successfully completing the honors program are graduated "with honors" or "with highest honors," as recommended by the School.

Students who have an undergraduate major in journalism or the equivalent may earn the Master of Arts degree with a major

in journalism through the Graduate School. Areas of interest include advertising, theories of communication, research methods in mass communication, the audiences and effects of the mass media, history of journalism, and international communication and comparative (foreign) journalism.

The School of Journalism is the administrative center for an interdepartmental program leading to the Ph.D. degree with a major in Mass Communication Research. Course schedules are arranged on an individual basis; interested students should consult the Dean.

A graduate minor in journalism is also available for candidates for the A.M. and Ph.D. degrees in English, history, political science, psychology, and sociology, and the M.A. in Communication.

Students interested in the graduate program may obtain additional information from the School of Journalism Bulletin, the Graduate School Catalogue, or by consultation with the Dean of the School of Journalism.

(Description of journalism courses may be found in the special catalogue of the School of Journalism.)

- 53 NEWS WRITING (3). Prerequisites, sophomore standing and ability to type. *One lecture and four laboratory hours a week, fall and spring.* Staff.
- 55 ADVANCED REPORTING (3). Prerequisite, Journalism 53; Journalism 154 recommended. *One conference and eight laboratory hours a week, fall and spring.* Byerly, Spearman.
- 56 ARTICLE AND FEATURE WRITING (3). *Fall and spring.* Morrison.
- 57 NEWS EDITING (3). Prerequisite, Journalism 53. *One lecture and four laboratory hours a week, fall and spring.* Sechriest, Elam.
- 58 EDITORIAL WRITING (3). *Fall and spring.* Spearman.
- 60 BOOK REVIEWING AND DRAMATIC CRITICISM FOR NEWSPAPERS (3). *Fall and spring.* Spearman.
- 73 BROADCAST JOURNALISM (Radio, Television, and Motion Pictures 73) (3) Prerequisites, Journalism 53 and R-TV-MP 60. *One lecture and four laboratory hours a week, fall and spring.* Staff.
- 80 NEWS PHOTOGRAPHY (3). Prerequisite, permission of the instructor. *Two lecture and three laboratory hours a week, fall and spring.* Sechriest.
- 97 INDIVIDUAL STUDY (3). Prerequisites, senior standing and permission of the instructor. *Fall and spring.* Staff.
- 98 INTRODUCTORY HONORS COURSE (3). Required of all students reading for honors in journalism. *Fall.* Staff.
- 99 HONORS ESSAY COURSE (3). Required of all students reading for honors in journalism. *Spring.* Staff.

- 111 THE MASS MEDIA AND AMERICAN POPULAR CULTURE (3). Prerequisite, one course in American history. *Fall*. Morrison.
- 146 INTERNATIONAL COMMUNICATION AND COMPARATIVE JOURNALISM (Political Science 146) (Radio, Television, and Motion Pictures 146) (3). *Fall*. Bishop.
- 151 INTRODUCTION TO MASS COMMUNICATION RESEARCH (Radio, Television, and Motion Pictures 151) (Speech 151) (3). *Fall and spring*. McCombs, E. Shaw.
- 154 REPORTING OF PUBLIC AFFAIRS (3). Prerequisite, Journalism 53. *Spring*. McCombs.
- 159 NEWSPAPER MANAGEMENT POLICIES (3). Survey and analysis of newspaper policies, responsibilities, practices and problems with reference to news coverage, business management, promotion, editorials and public service. *Fall and spring*. Byerly.
- 161 HISTORY OF AMERICAN JOURNALISM (3). *Fall and spring*. Morrison, D. Shaw.
- 165 COMMUNICATION AND OPINION (Psychology 165) (Sociology 165) (Speech 165) (3). Prerequisites, any two of the following courses: Psychology 26, Political Science 41, Sociology 51. *Fall and spring*. E. Shaw.
- 170 PRINCIPLES OF ADVERTISING (3). *Fall*. Mullen.
- 171 ADVERTISING COPY AND COMMUNICATION (3). Prerequisite, Journalism 170, or Business Administration 161, or equivalent. *One lecture and four laboratory hours a week, fall*. Mullen.
- 172 ADVERTISING MEDIA (3). Prerequisite, Journalism 170, or Business Administration 161, or equivalent. *Two lecture and two laboratory hours a week, spring*. Mullen.
- 173 ADVERTISING CAMPAIGNS (3). Prerequisite, Journalism 170 or equivalent; Journalism 171 or 172 or concurrent. *Spring*. Mullen.
- 175 RESEARCH PROJECTS IN THE MASS MEDIA (Radio, Television, and Motion Pictures 175) (3). *Spring*. Gwyn.
- 184 THE PRESS, THE CONSTITUTION, AND THE LAW (3). *Fall and spring*. Adams.
- 191 FUNCTIONS AND RESPONSIBILITIES OF CONTEMPORARY JOURNALISM (3). Permission of the instructor for non-majors. *Fall and spring*. E. Shaw, D. Shaw.

LATIN
(See Classics)

SCHOOL OF LIBRARY SCIENCE

RAY L. CARPENTER, *Acting Dean*

Library Science 93 may be taken only by students in the School of Education who are majoring in elementary education.

Library Science 105, 107, 122, and 123 may be taken by advanced undergraduates in the College of Arts and Sciences with the approval of the Dean of the School of Library Science.

The remaining courses are open to students enrolled in the School of Library Science, and, under certain conditions, to advanced undergraduates and graduates in the School of Education. For specific information about the course requirements in both library science and education for students interested in qualifying for certification in North Carolina as School Librarians or Teacher-Librarians, consult the separate Catalogues of the School of Library Science and the School of Education.

- 931 SURVEY AND EVALUATION OF BOOKS AND RELATED MATERIALS FOR CHILDREN (3). *Fall and spring.* Kalp.
- 100 THE LIBRARY IN SOCIETY (3). *Fall and spring.* Shearer.
- 105 HISTORY OF BOOKS AND PRINTING (3). *Fall.* Miller.
- 107 CONTEMPORARY PUBLISHING AND THE BOOK INDUSTRY (3). *Fall.* Gambee.
- 110 BASIC REFERENCE SOURCES AND METHODS (3). *Fall.* Hall; *spring.* Miller.
- 120 SELECTION OF LIBRARY MATERIALS (3). *Fall and spring.* Gambee.
- 122 SELECTION OF BOOKS AND RELATED MATERIALS FOR YOUNG PEOPLE (3). *Fall.* Kalp.
- 123 SELECTION OF BOOKS AND RELATED MATERIALS FOR CHILDREN (3). *Fall and spring.* Stone.
- 130 ORGANIZATION AND OPERATION OF LIBRARY SERVICES (3). *Fall.* Hickey, Shearer; *spring.* Shearer.
- 150 INTRODUCTION TO TECHNICAL SERVICES IN LIBRARIES (3). *Fall.* Hickey, London; *spring.* London.

DEPARTMENT OF LINGUISTICS AND NON-WESTERN LANGUAGES

MARIE TSIAPERA, *Chairman*

In cooperation with the Departments of Classics, English, Germanic Languages, Romance Languages, Sociology, Anthropology, and Slavic Languages, the Department offers courses and directs research leading to the degrees of Master of Arts and Doctor of Philosophy. Students may specialize either in General or Historical Linguistics. In the departments just named and in some others, students may offer linguistics as their major or minor field for graduate degrees.

The Non-Western Languages available in the department such as Arabic, Chinese and Swahili are offered both on elementary and advance levels.

1. Not included in the certification program for school librarians; a special course for School of Education students majoring in elementary education.

The following list of courses includes mostly those offered by the Department; for those taught in cooperating departments, see course listings of these departments.

- 100 PRINCIPLES OF STATISTICAL INFERENCE (Statistics 100) (3). (See Statistics 100 for description.) *Fall*. Nicholson.
- 101 INTRODUCTION TO HISTORICAL AND COMPARATIVE LINGUISTICS (Anthropology 114) (3). Theories and methods of historical and comparative linguistics, with emphasis upon the Indo-European family. *Spring*. Tsiapera.
- 103 INFORMATION SYSTEMS IN HUMANISTIC AND SOCIAL SCIENCE RESEARCH (Computer and Information Science 103) (3). Introduction to computer hardware and software systems. Emphasis upon their use in Humanities and Social Sciences. Computer programing, with practice on the computer, will be stressed. *Fall and spring*. Koubourlis, Sedelow.
- 104 SYMBOLIC LOGIC (Philosophy 101) (Computer and Information Science 104) (3). Introductory. *Fall*. Heintz.
- 105 DATA REPRESENTATION AND MANIPULATION (Computer and Information Science 120) (3). *Fall and spring*. Page. Brooks.
- 110 PHILOSOPHY OF LANGUAGE (Philosophy 110) (Computer and Information Science 110) (3). See Philosophy 110 for description.) *Spring*. Travis.
- 111 ELEMENTARY SANSKRIT (3). Grammar and readings from the epic and didactic literature. Supplementary lectures intended to serve as a basis for Indo-European comparative grammar. *Fall and spring, on demand*. Lane.
- 115 TOPICS IN LINGUISTICS (3). Directed readings on linguistic topics not covered in specific courses. *On demand*. Bell, Tsiapera.
- 120 INTRODUCTION TO GENERAL LINGUISTICS I: PHONETICS AND PHONOLOGY (Anthropology 180) (3). General Phonetics, both articulatory and acoustic. Practice in phonetic transcription. Introduction to phonological analysis. Walsh.
- 123 PHONOLOGICAL ANALYSIS (Anthropology 183) (3). Prerequisite, Linguistics 120 or equivalent. Methods and theory of phonological analysis. Work with an informant in a language unknown to class members.
- 130 INTRODUCTION TO GENERAL LINGUISTICS II: GRAMMAR (Computer and Information Science 128) (Anthropology 190) (3). A survey of the literature, terminology and research methods of grammatical analysis.
- 133 GRAMMATICAL ANALYSIS (Anthropology 193) (3). Prerequisite, Linguistics 130 or equivalent. Methods and theory of grammatical analysis, with special reference to transformational grammar.
- 134 STRUCTURAL LINGUISTICS (3). Descriptive analysis of phonological and grammatical structures according to linguistic procedures developed in the Bloomfieldian and Post-Bloomfieldian schools.

- 140 MATHEMATICAL LINGUISTICS (3). Introduction to selected topics in set theory, logic and formal systems, modern algebra, automata theory and statistical techniques with elementary applications to linguistics. No previous mathematics assumed.
- 166 SOCIOLOGY OF LANGUAGE (Sociology 166) (3). (See Sociology 166 for description.) *Spring*. W. Sedelow.
- 170 AFRICAN SURVIVALS IN AMERICA (3). Research course on dialect and traditions of Black communities in North and South Carolina. Detailed comparison would be made with the Caribbean Creoles and Pidgin English of West Africa. *Fall*.
- 171 AFRICAN LANGUAGES AND HISTORY (3). An examination of the linguistic evidence on the intellectual and historical achievements of Africa. *Spring*.
- 184 LANGUAGES AND CULTURE (Anthropology 184) (3).

Arabic

Arabic 103, 104, 121 and 122 or 121, 122, 131 and 132 are accepted as satisfying General College requirements for foreign language.

- 103 COLLOQUIAL EGYPTIAN ARABIC (3). Intensive study of conversational Arabic with occasional lectures on the structure of the language. *Fall and spring*. Tsiapera.
- 104 BEGINNING CLASSICAL ARABIC (3). Learning of the script and basic grammar with emphasis on borrowings into Romance Languages. *Fall*. Cortés.
- 112 READINGS IN BASIC CLASSICAL ARABIC (3). Grammar and readings in classical Arabic with emphasis on borrowings into Romance Languages. *Spring*. Cortés.
- 121 MODERN STANDARD ARABIC (3 each). Lectures and readings in Modern Written Arabic with emphasis on linguistics analysis of the language. *Fall and spring*. Tsiapera.
- 131 CLASSICAL ARABIC (3). Lectures and readings in Quranic Arabic and Literature of the tenth century. *Fall and spring*. Cortés.
- 140 ARABIC LITERATURE IN TRANSLATION (3). A survey of Modern Arabic Literature and culture. Cortés.
- 141 ADVANCED READINGS IN MODERN STANDARD ARABIC—THE PRESS (3). Newspaper readings from the various Arab Countries. *Fall*. Cortés.
- 142 ADVANCED READINGS IN MODERN STANDARD ARABIC—LITERATURE (3). Reading in Modern Arabic Literature. *Spring*. Cortés.

Chinese

- 50 INTRODUCTION TO CHINESE CIVILIZATION (3). A course designed to introduce both beginning undergraduate majors in Far Eastern Studies and General College students to the Chinese world of past and present. *Spring*. Seaton.

- 101 **ELEMENTARY CHINESE (3).** Prerequisite, junior standing or permission of instructor. Introduction to Mandarin Chinese providing instruction in the basic grammar common to both the spoken and written language. Spoken Mandarin will be emphasized and text materials will be in romanization. A minimum of 100 basic characters will be introduced. *Five hours per week, three devoted to instruction in grammar and two to oral practice. Fall.* Seaton; staff.
- 102 **ELEMENTARY CHINESE (3).** Continued emphasis on spoken Mandarin but with accelerated presentation of characters. The aim is to present a total vocabulary of 600 characters by the end of the term. *Five hours per week, three devoted to grammar and two to oral practice and drill in the writing of characters. Spring.* Seaton; staff.
- 103 **INTERMEDIATE CHINESE (3).** Prerequisite, Elementary Chinese or permission of instructor. Second-year level of study of grammar of spoken language and written vernacular. Emphasis on reading and writing of characters. *Three hours per week, fall.* Seaton.
- 104 **INTERMEDIATE CHINESE (3).** Continuation of preceding course. *Three hours per week, spring.* Seaton; staff.
- 110 **ADVANCED CHINESE (3).** Prerequisite, Intermediate Chinese or permission of instructor. Advanced readings in Chinese. *Three hours per week, fall.* Seaton; staff.
- 111 **ADVANCED CHINESE (3).** Continuation of preceding course. *Three hours per week, spring.* Seaton; staff.
- 120 **LITERARY CHINESE (3).** An introduction to the literary language of the Chinese classics.
- 121 **LITERARY CHINESE (3).** Continuation of Chinese 120.
- 143 **CHINESE LITERATURE IN TRANSLATION (3).** (Comparative Literature 143). A survey of Chinese literature from the classic period to the modern period.
- 144 **CHINESE LITERATURE IN TRANSLATION (3).** (Comparative Literature 144). Selected topics in Chinese literature concentrating on one period or one genre.

Indic

- 111 **BEGINNING SANSKRIT (3 each).** Grammar and readings from the
- 112 epic and didactic literature. Supplementary lectures intended to serve as a basis for Indo-European comparative grammar. *Fall and spring, on demand.* Lane.

Swahili

- 121 **INTENSIVE SWAHILI (3).** Lectures and readings in Swahili with
- 122 special attention to its linguistic analysis. Taught 5 days a week. *Fall and spring.* Bell.
- 131 **ADVANCED SWAHILI (3 each).** An advanced study of Swahili culture,
- 132 speech and literature.

DEPARTMENT OF MATHEMATICS

FRED B. WRIGHT, *Chairman*

Students may work toward either an A.B. or a B.S. degree with a major in mathematics. The requirements (beyond those of the General College) are listed below for each of the degrees.

A.B. degree with a major in mathematics:

I. A. Mathematics 31, 32, 33, 34

B. Five to seven additional courses numbered 121 or above and including:

(a). (121, 122) or (126, 127)

(b). (134 or 136)

II. From five to seven courses in the Division of Natural Sciences but not in mathematics.

III. From five to seven courses not in the Division of Natural Sciences.

B.S. degree with a major in mathematics:

I. For freshman and sophomore years see "General College" Part III.

JUNIOR AND SENIOR YEARS

II. Seven to nine courses in mathematics numbered 121 or above, including:

(a). (121, 122) or (126, 127)

(b). (136, 137)

III. Four or more courses in the Division of Natural Sciences, including Physics 26, 27 (or 24, 25) if not taken during the first two years.

IV. Four courses outside the Division of Natural Sciences.

V. Free electives to bring the total semester hours credit for the four years to the minimum required for graduation.

Quality of work: A student must earn 18 hours of C or higher (not a C average) in the major. For the A.B. degree, this means in courses numbered 33 or higher; for the B.S. degree, this means in courses numbered 121 or higher.

Honors in mathematics: Promising students are encouraged to work towards a bachelor's degree with honors in mathematics. The course program shall consist of six or more courses approved by the departmental honors adviser. These will include

such upper level courses as 136, 137, 126, 127. Normally, 33A and 34A will be taken in the General College. At some time during the semester in which the student expects to graduate, a one-hour oral examination will be taken over the six courses approved by the honors adviser. Interested students should consult the departmental honors adviser before completing the second semester of calculus and in no case later than the beginning of their senior year.

Mathematics Placement Test: Students who wish to take mathematics will be given a qualifying test. The results of this test, along with other pertinent information, will determine the appropriate beginning course for the student. Any student who does not intend to take Mathematics 31, but who wishes to use mathematics to fulfill the General College requirement, should take Mathematics 1 and 2. Those who intend to take Mathematics 31 (or higher level mathematics courses) will be placed in Mathematics 15 or Mathematics 31 (or a higher level course) depending on the test scores. Mathematics 15 is designed specifically to prepare students for Mathematics 31. Freshmen who have had four years of high school mathematics, including a study of the trigonometric functions, normally qualify for Mathematics 31. No credit for Mathematics 15 will be given on the basis of any placement examination. The successful completion of Mathematics 31 is sufficient for satisfying the General College Mathematics requirement. A student will not be given credit for Mathematics 15 upon the completion of any mathematics course offered by the Department other than Mathematics 15.

Advanced placement: A student who makes a grade of 3 or higher on the AB Advanced Placement Examination will receive credit for Mathematics 31 and will have satisfied the General College Mathematics requirement. A student who makes a grade of 3 or higher on the BC Advanced Placement Examination will receive credit for both Mathematics 31 and Mathematics 32 and will have satisfied the General College mathematics requirement. No credit for Mathematics 15 will be given on the basis of any advanced placement examination.

Computer oriented curriculum: Many undergraduate mathematics majors will be interested in acquiring some vocational competence in the use of computers. Computer and Information Science 16, 120 and 150 (Mathematics 110) is considered a minimum sequence for such students.

Students in mathematics intending to teach: Students intending to teach mathematics in the public schools and students

enrolled in the School of Education who intend to major in mathematics should consult the appropriate section of the catalogue on the School of Education.

The names of faculty members in the following listing indicates only the most recent instructor of the course.

- 1 AN INTRODUCTION TO CONCEPTS IN MATHEMATICS (3 each).
- 2 These courses are designed for those students not intending to do further work in mathematics and can be best used to fulfill the General College requirement in mathematics. *Fall and spring.* Staff.
- 15 ELEMENTARY FUNCTIONS AND COORDINATE GEOMETRY (3). Real and complex numbers, inequalities, functions and their graphs, operations on functions, polynomials, rational and algebraic functions, exponential and logarithmic functions, trigonometric functions, elementary analytic geometry. Credit for Mathematics 15 is granted only when it is followed by the successful completion of Mathematics 31.
- 17 MATHEMATICS FOR ELEMENTARY SCHOOL TEACHERS (3 each).
- 18 A study of the algebraic structure of the number system, some elementary number theory, basic ideas of algebra, and intuitive foundations of geometry. The course is designed to prepare teachers to teach mathematics in the elementary school. *Fall and spring.* Smith.
- 21 PROBABILITY FOR BUSINESS AND SOCIAL SCIENCES (3). An introduction to probability for students in business administration and the social sciences. Elementary set theory, counting problems, probability in finite sample spaces, the mean, variance and standard deviation of a random variable, binomial distributions. Credit for both Mathematics 2 and Mathematics 21 will not be granted. *Fall and spring.* Staff.
- 22 CALCULUS FOR BUSINESS AND SOCIAL SCIENCES (3). An introductory survey of differential and integral calculus with emphasis on techniques and applications of interest for business and social sciences. Elementary function and graphs, sequences, limits, techniques of differentiation and integration and applications. Credit for both Mathematics 1 and Mathematics 22 will not be granted. *Spring.* Staff.
- 31 CALCULUS WITH ANALYTIC GEOMETRY (3 each). Prerequisite,
- 32 Mathematics 15 or satisfactory scores on qualifying tests. An integrated treatment of analytic geometry and the differential and integral calculus of functions of one variable. Differential equations. *Fall and spring.* Staff.
- 31A ONE-VARIABLE CALCULUS (3 each). Prerequisite, special placement
- 32A by examination or consent of instructor. A more comprehensive, deeper treatment of differential and integral calculus. Integrated discussion of differential equations. Infinite series. *Fall and spring.* Iltis, Geissinger, Mann.
- 33 LINEAR ALGEBRA (3). Normally taken after Mathematics 32, but calculus is not used in the course. An introduction to the theory of vector spaces, linear transformations, systems of linear equations, matrices, determinants, eigenvectors and eigenvalues, diagonalization. *Fall and spring.* Staff.

- 33A LINEAR ALGEBRA (3). Prerequisite, Mathematics 32A. Continues the A-sequence with one semester of linear algebra for applications in multi-variable calculus. *Fall*. Pettis.
- 34 MULTIPLE VARIABLE CALCULUS (3). Prerequisites, Mathematics 31, 32, 33. Vector functions of a single variable, calculus of functions of several variables, maxima and minima, multiple integration, differential equations. *Fall and spring*. Staff.
- 34A MULTIVARIABLE CALCULUS (3). Prerequisite, Mathematics 33A. Differential and integral calculus of scalar and vector fields. *Spring*. Mewborn.
- 90 UNDERGRADUATE READING AND RESEARCH IN MATHEMATICS (3). *Spring*.
- 95 SPECIAL TOPICS IN MATHEMATICS (3). *Fall and spring*.
- 98 UNDERGRADUATE SEMINAR IN MATHEMATICS (3). Prerequisite, permission of the instructor. A seminar on a chosen topic in mathematics in which the students participate more actively than in usual courses. *Fall*. Staff.
- 99 UNDERGRADUATE SEMINAR IN MATHEMATICS (3). Prerequisite, permission of the instructor. A seminar on a chosen topic in mathematics in which the students do most of the work and report to their fellow students. *Spring*. Staff.
- 108 MATHEMATICS FOR SOCIAL SCIENTISTS I (3). Prerequisite, permission of instructor. Introduction to various topics in pure mathematics of frequent application in behavioral models; sets and relations, graph theory and related topics, theory of probability for finite sample spaces. *Fall*. Davis.
- 109 MATHEMATICS FOR SOCIAL SCIENTISTS II (3). Prerequisites, Mathematics 32 and 108. More advanced topics chosen from linear algebra, applications of non-negative operators, difference equations, optimization problems, linear programming, and game theory. *Spring*. Davis.
- 110 INTRODUCTION TO NUMERICAL METHODS (3). (Computer and Information Science 150). Prerequisites, Mathematics 32, Computer and Information Science 120. Truncation, rounding error, error propagation. Interpolation quadrature, integration of differential equations. Relation of functional analysis to numerical analysis, eigenvalue theory to matrix and vector norms. *Fall*. Staff.
- 116 LINEAR ALGEBRA (3). Prerequisite, Mathematics 32. Introduction to the theory of finite dimensional vector spaces, linear transformations, and matrices. (Not ordinarily open to undergraduates. No one can receive credit for both Mathematics 116 and the Linear Algebra of Mathematics 33). *Summer*. Staff.
- 117 FOUNDATIONS OF EUCLIDEAN GEOMETRY (3). Prerequisite, Mathematics 32 or permission of instructor. Critical study, from an advanced standpoint, of basic notions of Euclidean geometry, order, congruence and distance. Elementary figures in two and three dimensions. Length, area and volume. *Summer*. Staff.
- 118 BASIC CONCEPTS OF ANALYSIS (3). Prerequisites, Mathematics 32 and consent of instructor. Limits, continuity, differentiability, uni-

form continuity. Riemann integration. Infinite sequences and series; uniform convergence; power series. *Summer*. Staff.

- 119 TOPICS IN GEOMETRY (3). Prerequisites, 117 and Linear Algebra or permission of instructor. *Summer*. Staff.
- 120 PROBABILITY (3). Prerequisite, Mathematics 34. Foundations of probability; random variables and distribution functions; the binomial, Poisson, and normal distributions; expectation, moments, moment-generating functions; compound events and joint distributions; limit theorems; applications. *Spring*. Staff.
- 121 ADVANCED CALCULUS I (3). Prerequisite, Mathematics 34. Continuity and differentiability, for real-valued functions of several variables and for vector-valued functions; chain rules; implicit function theory; Jacobians; theory of extrema, elementary theory of normed linear spaces. *Fall and spring*. Mann. Geissinger.
- 122 ADVANCED CALCULUS II (3). Prerequisite, Mathematics 121. Curves and surfaces; Riemann integration; improper integrals; line and surface integrals; theorems of Gauss, Green and Stokes; transformation of multiple integrals; series; uniform convergence. *Fall and spring*. Mann, Hoyle.
- 123 FUNCTIONS OF A COMPLEX VARIABLE WITH APPLICATIONS (3). Prerequisite, Mathematics 121 or 126. The algebra of complex numbers, elementary functions and their mapping properties, complex limits, power series, analytic functions, contour integrals, Cauchy's theorem and formulae, Laurent series and residue calculus, elementary conformal mapping and boundary value problems. Poisson integral formula for the disk and the half plane. *Spring*. Stephenson.
- 124 ELEMENTARY DIFFERENTIAL EQUATIONS (3). Prerequisites, Mathematics 34 and 33 (Linear Algebra). Introduction to ordinary differential equations, power series solutions, Laplace transforms, numerical methods. *Fall and spring*. Vaughan.
- 126 CALCULUS OF SEVERAL VARIABLES (3 each). Prerequisite, Mathematics 34. Multivariable calculus. Continuous functions, Riemann integrals, Taylor's theorem, sequences and series of functions, differentiation and differentials. Inverse and implicit function theorems. Transformation of integrals. Theorems of Gauss, Green and Stokes. (A student may take only one of the sequences Mathematics 121, 122 or Mathematics 126, 127. Credit for both sequences will not be granted.) *Fall and spring*. Staff.
- 130 PROJECTIVE GEOMETRY (3). Prerequisite, Mathematics 32. Introduction to analytic and synthetic projective geometry, projective transformations, theory of conics, non-Euclidean geometries and their models. *Fall*. Jenner.
- 133 ELEMENTARY THEORY OF NUMBERS (3). (Formerly Mathematics 181). Divisibility Euclidean algorithm, congruences, residue classes, Euler's functions, primitive roots, Chinese remainder theorem, quadratic residues, number theoretic functions, Farey and continued fractions, Gaussian integers. *Fall*. Smith.
- 134 ELEMENTS OF MODERN ALGEBRA (3). Prerequisite, Mathematics 33 (Linear Algebra). Sets and functions, rings, ordered integral do-

mains, integers, fields and rational numbers, real and complex numbers, polynomials, groups. *Fall and spring*. Pfaltzgraff.

- 136 ALGEBRA I (3). Prerequisite, Mathematics 33 (Linear Algebra). The integers, groups, permutation and matrix groups, homomorphisms and quotient groups, finitely generated abelian groups, rings, ideals and quotient rings, rings of matrices, field of fractions of an integral domain, unique factorization domains, polynomials, field extensions. Credit for both 134 and 136 will not be granted. *Fall and spring*. Cameron.
- 137 ALGEBRA II (3). Prerequisite, Mathematics 33 (Linear Algebra). Vector spaces, linear transformations, duality, diagonalization, primary and cyclic decomposition, Jordan canonical form, inner product spaces, orthogonal reduction of symmetric matrices, spectral theorem, bilinear forms, multilinear functions, tensor products. *Fall and spring*. Graves
- 143 PARTIAL DIFFERENTIAL EQUATIONS (3). Prerequisite, Mathematics 122 or 127; corequisite, Mathematics 123. Elliptic, parabolic and hyperbolic equations, existence and uniqueness theorems, boundary value problems. *Spring*. Staff.
- 146 INTRODUCTION TO PROBABILITY (3). (Statistics 126). Prerequisite, Mathematics 121 or 126. An introduction to the mathematical theory of probability, covering random variables, moments, binomial, Poisson, normal, and related distributions, generating functions, sums and sequences of random variables, combinatorial and statistical applications. *Fall*. W. L. Smith.
- 147 MATRIX THEORY (3). Prerequisite, Mathematics 33 (Linear Algebra). Emphasizes computational aspects of the algebra of matrices and its applications. Localizations; non-negative operators; functions of matrices. *Spring*. Staff.
- 148 COMBINATORIAL MATHEMATICS (Statistics 156) (3). Prerequisites, Mathematics 135 or 136, Mathematics 121 or permission of the instructor. Topics chosen from: Generating functions, Polya's theory of counting, partial orderings and incidence algebras, principle of inclusion-exclusion, Mobius inversion, combinatorial problems in physics and other branches of science. *Fall*. Kelly.
- 149 INTRODUCTION TO GRAPH THEORY (3) (Statistics 158). Prerequisite, Mathematics 137 or equivalent. Basic concepts of directed and undirected graphs. Partitions and distances in graphs. Planar and non-planar graphs. Matrix representation of graphs. Network flows. Applications of graph theory. *Spring*. Dowling.
- 156 INTRODUCTION TO ALGEBRAIC GEOMETRY (3). Prerequisite, Mathematics 34. Algebraic curves and surfaces in affine and projective space, rational curves, Segre and Veronese varieties. *Fall*. Jenner.
- 163 ELEMENTARY TOPOLOGY I (3). Prerequisite, Mathematics 121 or corequisite, Mathematics 126. Metric spaces, completion of a metric space, topological spaces, separation axioms, compact and locally compact spaces, connected and locally connected spaces, product topology. *Fall*. Cima.
- 164 INTRODUCTORY ALGEBRAIC TOPOLOGY (3). Prerequisites, Mathematics 163, and Mathematics 134 or consent of instructor. Fundamental group, homotopy, free groups, Van Kampen theorem, covering spaces.

Other topics may include: knots, graphs, simplicial complexes, simplicial approximation, homology, and higher homotopy groups. *Spring*. Staff.

- 165 INTRODUCTION TO FUNCTIONAL ANALYSIS (3). Prerequisite, Mathematics 163. Normed linear spaces, continuous linear functionals, Banach spaces, sequence spaces, Hilbert space; Hahn-Banach, closed graph, and uniform boundedness theorems. *Fall and spring*. Staff.
- 166 TOPICS IN GENERAL TOPOLOGY (3). Prerequisite, Mathematics 163. Topics chosen from: the theory of convergence, paracompactness, metrizations, compactifications; function spaces, applications of topology in analysis; topological groups; other areas of current interest. *Fall and spring*. Staff.
- 171 NUMERICAL METHODS IN APPLIED MATHEMATICS (Computer and Information Science 151-152). (3 each). *Fall and spring*. Staff.
- 173 TOPICS IN APPLIED MATHEMATICS (3 each). Prerequisite, Mathematics 122. Topics include boundary value problems, finite difference methods, integral equations, calculus of variations, and other areas of current interest. *Fall and spring*. Tolle.
- 178 SPECIAL FUNCTIONS (3). Prerequisite, Mathematics 123. Properties of Bessel, Hankel, and Neumann functions, gamma and beta functions, hypergeometric function, surface and spherical harmonics, Legendre, Laguerre, and Hermite polynomials. *Spring*. Mann, Jenner.
- 182 TOPICS IN NUMBER THEORY (3). Prerequisites, Mathematics 121 and 136. Elementary number theory, quadratic reciprocity, cyclotomic fields, Gaussian sums, ideal theory, zeta function and prime number theorem, L-series and Dirichlet's theorem, quadratic forms, diophantine approximation. *Spring*. Staff.
- 186 ALGEBRA III (3). Prerequisite, Mathematics 137. Groups acting on structures, isomorphism theorems, Sylow theory, Jordan-Hölder, categories, functors, universal mapping properties, rings and ideals, localization, principal rings, modules, sums and products, chain complexes, exact sequences, duals, direct and inverse limits, tensor products, polynomial rings. *Fall and spring*. Norwood, Jenner.
- 187 ALGEBRA IV (3). Prerequisite, Mathematics 186. Algebraic field extensions, cyclotomic fields, Galois theory, Noetherian rings and modules, integral dependence, integral extensions, homomorphism extension, transcendental extensions. Nullstellensatz, derivations, ordered fields, valuation theory, completions and extensions. *Spring*. Staff.
- 188 ALGEBRA V (3). Prerequisite, Mathematics 186. Linear algebra, bilinear forms, orthogonal sums, nondegeneracy, Witt's theorem, Clifford algebra, alternating forms, Hermitian forms, spectral theorem, decomposition of a space relative to a linear map, eigenspaces, tensor products, tensor-Grassmann-symmetric algebras, semisimple groups, orthogonality relations, induced representations. *Fall*. Staff.
- 191 DIFFERENTIAL GEOMETRY (3). Prerequisite, Mathematics 121. Differential forms, chains and integration, vector and frame fields, differentiation, Frenet formulas and congruences of curves, calculus on surfaces, notions of curvature isometries of surfaces, Gauss-Bonnet theorem. *Spring*. Staff.

- 193 ANALYSIS I (3). Prerequisite, consent of instructor. Introductory set theory, metric spaces, properties of continuity and convergence, Weierstrass-Stone theorem. *Fall*. Wright.
- 194 ANALYSIS II (3). Prerequisite, Mathematics 193. Lebesgue and abstract measure and integration, convergence theorems, differentiation, Randon-Nikodym theorem, product measures, Fubini theorem, L_p spaces. *Fall and spring*. Wright.
- 196 ANALYSIS III (3). Prerequisite, Mathematics 193. Complex integration and differentiation, power series, conformal mapping and linear fractional transformations, the Cauchy theory and applications, local behavior of analytic functions. *Spring*. Taylor.
- 198 THEORY OF SETS (3). Prerequisite, consent of instructor. Language of formal mathematics; terms, relations, theorems; logical, quantified, and equilitary theories; axioms of set theory; equivalence, functional, and collectivizing relations; unions and intersections; products and coproducts; universes. *Fall*. Staff.
- 199 PROSEMINAR (1). Cardinal and ordinal numbers, axiom of choice and its equivalents, other topics. *Spring*. Sonner.

DEPARTMENT OF MUSIC

WILTON MASON, *Chairman*

The Department of Music offers three curricula for undergraduates who major in music. The *Bachelor of Arts degree* provides a broad education in the liberal arts as well as more specialized training in music theory, history, literature, and performance. The *Bachelor of Music Education degree* emphasizes music teaching and qualifies the student for the North Carolina Class A teaching certificate while also providing the requisite background in music theory, history, literature, and performance. The *Bachelor of Music degree* puts emphasis on intensive training in music performance backed by theory, history, and literature and balanced by as rich an experience in the liberal arts as the program will allow.

The basic core of music theory, history, and literature courses (Music 11, 31, 32, 50, 51, 52, 53, 54, 55, 56, 57) is essential and therefore common to all three curricula. Three additional lecture courses in music are chosen in each degree plan. (For the B.M.Ed. candidate two of these are Music 68 and Music Education 120.) Also essential and common to all curricula is the involvement of every major in performance throughout his undergraduate residency, both through private instruction and practice and through participation in ensembles. Moreover, each curriculum includes a fundamental program in the humanities, natural sciences, and social sciences as outlined under General College requirements elsewhere in this catalogue. However, prospective music majors normally defer enough General

College courses to permit them to begin major courses in the freshman and sophomore years.

The music requirements and credits are the same for each potential major in the normal freshman year, but differences are made beginning with the sophomore year. Although decisions in some cases can be made later without great penalty, the student is urged to choose one of the three degree plans at the end of the freshman year. If his choice is the B.M. curriculum he is required to demonstrate his potential for performance through audition. The essential differences among the three curricula are as follows: The B.M. degree requires intensive effort and very high standards in performance and accordingly offers most credits in applied music and includes fewer courses outside of the major. The B.M.Ed. degree offers fewer credits in applied music, but includes professional education courses (Educ. 41, 71, 72b, 75 or 76, 99) and student teaching (Educ. 78 or 79). The A.B. degree offers fewest credits in applied music, but includes the richest experience in the liberal arts and sciences. Upper division requirements of the School of Education and of the College of Arts and Sciences are stated elsewhere in this catalogue. The total undergraduate program of a music major in any curriculum normally contains 130-136 semester hours.

Sample detailed four-year programs for all three degrees may be requested from the Music Department.

Honors in Music: Students interested in becoming candidates for a degree with honors in music should read the regulations governing the Honors Program in the College of Arts and Sciences and should consult the Chairman of the Department early in their junior year. Note, also, the Freshman and Sophomore Honors Program, as explained elsewhere in this bulletin.

Lecture Courses in Music

- 11 INTRODUCTION TO MUSIC LITERATURE (3). An orientation course in the masterworks of music, intended for those planning to major in music. Other students with musical background are admitted. *Fall*. Bower.
- 21 FUNDAMENTALS OF MUSIC I (3). Not offered to music majors. Rudimentary theory and ear-training, melody writing, harmonization, and keyboard facility. *Fall and spring*. Harding, Woodward.
- 22 FUNDAMENTALS OF MUSIC II (3). Not offered to music majors. Prerequisite, Music 21 or the equivalent. A continuation of Music 21 with the addition of basic instrumentation and arranging. *Spring*. Harding.
- 27 HONORS 27. SEMINAR IN THE FINE ARTS (3). Topics as announced. For nonmusic honors candidates; music majors admitted by permission of the instructor. Staff.

- 31 SURVEY OF MUSIC THEORY AND TECHNIQUES I AND II (4 each).
- 32 An intensive survey of the basic processes of music, with emphasis on the traditional harmonic idiom of 18th and 19th century choral and instrumental music. Includes analytical study, writing, keyboard realizations, sight singing, and dictation. Required for music majors and minors. Open to others. *Fall and spring*. Hannay, Porco.
- 41 MUSIC APPRECIATION: GENERAL SURVEY (3). Not offered to music majors. No prerequisite. A broad introduction to musical understanding emphasizing elements, styles, and forms in representative masterworks. *Fall and spring*. Griffith, Zenge, Bowers, Wing, Blickenstaff.
- 42 MUSIC APPRECIATION: OPERA AND ORATORIO (3). Not offered to music majors. No prerequisite. A survey through recordings, broadcasts, and live concerts of masterworks (especially by Handel, Haydn, Mozart, Mendelssohn, Wagner, Verdi, and composers for the contemporary lyric theatre). *Fall and spring*. Carter, Porco, Warburton.
- 43 MUSIC APPRECIATION: SYMPHONY AND CHAMBER MUSIC (3). Not offered to music majors. No prerequisite. An introduction to symphonic and ensemble literature from Haydn to the present. *Fall and spring*. Alden, Hoggard, Griffith.
- NOTE: Courses 50-57 are designed to give the music major as thorough as possible a background in the history and literature of music, as well as to train him in the techniques of hearing, analyzing, and writing music. The student normally will take these courses in pairs, i.e. 50 and 51 in one semester, 52 and 53 in another, etc., the even-numbered course being a historical survey of a certain period, the odd-numbered course emphasizing analysis and imitative writing in the style of that period. In the odd-numbered courses the various elements of traditional music theory, such as harmony, counterpart, form, and instrumentation, are taught as interrelated aspects of the music. Prerequisites, Music 11, 31 and 32 or equivalent.
- 50 THE HISTORY OF PRE-BAROQUE MUSIC (2). Prerequisite, Music 11 and 32. Required for music majors. Open to other students only with permission of the instructor. The history of music from its origins to about 1600. See note above. *Fall*. Warburton.
- 51 THE TECHNIQUES OF PRE-BAROQUE MUSIC (3). Required for music majors. Open to other students only with permission of the instructor. Analysis and imitative writing in Medieval and Renaissance styles. See note above. *Fall*. Warburton.
- 52 THE HISTORY OF BAROQUE MUSIC (2). Required for music majors. Open to other students only with permission of the instructor. From 1580 to 1750. See note above. *Spring*. Smither.
- 53 THE TECHNIQUES OF BAROQUE MUSIC (3). Required for music majors. Open to other students only with permission of the instructor. Analysis and imitative writing in Baroque styles. See note above. *Spring*. Kremer, Andrews.
- 54 THE HISTORY OF CLASSIC AND ROMANTIC MUSIC (2). Required for music majors. Open to other students only with permission of the instructor. From 1735-1915. See note above. *Fall*. Andrews, Alden.
- 55 THE TECHNIQUES OF CLASSIC AND ROMANTIC MUSIC (3). Required for music majors. Open to other students only with permission

of the instructor. Analysis and imitative writing in Classic and Romantic styles. See note above. *Fall*. Andrews.

- 56 THE HISTORY OF MUSIC IN THE TWENTIETH CENTURY (2). Required for music majors. Open to other students only with permission of the instructor. From 1890 to the present. See note above. *Spring*. Warburton.
- 57 THE TECHNIQUES OF TWENTIETH CENTURY MUSIC (3). Required for music majors. Open to other students only with permission of the instructor. Analysis and imitative writing in Twentieth Century styles. See note above. *Spring*. Hannay.
- 68 CONDUCTING (3). Practical experience in baton technique, score reading, and conducting of vocal and instrumental ensembles. *Fall*. Serrins.
- 70 PIANO PEDAGOGY I and II (3 each). Prerequisite, 2 years of piano instruction at the college level. I: Problems, materials and methods in teaching beginning piano to children. II: Problems, materials and methods in teaching piano to older students of high school and early college age. (Primarily for B.M. and B.M.Ed. candidates.) *Fall and spring*. Blickenstaff.

NOTE: The following courses come under the School of Education:

EDUCATION 75 METHODS AND MATERIALS IN TEACHING INSTRUMENTAL MUSIC (3). *Spring*. Harding.

EDUCATION 76 METHODS AND MATERIALS IN TEACHING CHORAL AND GENERAL MUSIC (3). *Spring*. Carter.

Education 75 and 76 meet six hours per week during the first half of the semester. As a part of the professional "block" program, they are open only to seniors who are candidates for the B.M.Ed. degree.

EDUCATION 78 STUDENT TEACHING IN INSTRUMENTAL MUSIC (6). *Spring*. Harding.

EDUCATION 79 STUDENT TEACHING IN CHORAL AND GENERAL MUSIC (6). *Spring*. Carter.

Education 68 and 79 provide essential practical experience in both the musical and the administrative problems of the school music teacher and occupy the full time of the student during the second half of the second senior semester. Student teaching is supervised by both the School of Education and the Department of Music in selected public schools.

- 81 THE EVOLUTION OF JAZZ (3). No prerequisite. Open to all undergraduates but music majors must have permission of the instructor. A study of the origins of Jazz and a survey of its types and styles. Lectures, readings, and recordings. *Fall and spring*. Christianson, Harding.
- 83 GREAT ORCHESTRAL LITERATURE FROM HAYDN THROUGH SCHUBERT (3). Not offered to music majors. A study of selected symphonies and concertos by Haydn, Mozart, Beethoven, Schubert, and their contemporaries. *Fall*. Hoggard.
- 84 GREAT ORCHESTRAL LITERATURE FROM MENDELSSOHN TO THE PRESENT (3). Not offered to music majors. A study of selected symphonies, concertos, and tone-poems by Mendelssohn, Schumann, Berlioz, Liszt, Bruckner, Brahms, Tchaikovsky, and twentieth-century composers. *Spring*. Hoggard.

- 89 STUDIES IN MUSIC LITERATURE (3). Not offered to music majors. Prerequisites, at least one of the following: Music 11, 21, 22, 31, 41, 42, 43, or permission of the instructor. More intensive study of a selected body of music literature for the non-major with some background in music. Topics, to be announced in advance of each semester's offerings, might include: Beethoven, Twentieth Century Music, The String Quartet, Romantic Opera, and others according to demand and faculty availability. *Fall and spring*. Staff.
- 98 SPECIAL STUDIES FOR UNDERGRADUATES (3). Intensive study on a particular topic under the supervision of a qualified member of the staff. For music majors with special permission of the department. *Fall and spring*. Staff.
- 99 HONORS PROJECT IN MUSIC (3). The completion of a special project, approved by the department, by a student who has been designated a candidate for undergraduate honors. *Fall and spring*. Staff.
- 101 INTRODUCTION TO MUSICOLOGY AND MUSIC BIBLIOGRAPHY (3). Scope and methodology through readings, bibliography and use of the library. Preparation for advanced seminars and sound research procedures are stressed. *Fall*. Pruett.
- 102 MUSIC AESTHETICS (3). Studies in the meaning, perception, philosophy, and criticism of music. *Spring*. Mason.
- 103 PRIMITIVE AND ORIENTAL MUSIC (3). A study of the folk music of primitive peoples throughout the world and of the traditional and folk music in Oriental countries. Lectures, readings, scores, and recordings. (1970 and alternate years.) *Fall*. Mason.
- 104 FOLK MUSIC OF EUROPE AND THE NEW WORLD (3). A study of folk music in European countries, emphasizing similarities in the British Isles and southern United States. Lectures, readings, scores and recordings. (1969 and alternate years). *Fall*. Mason.

Note: The following two courses comes under the School of Education:

EDUCATION 120 MUSIC EDUCATION IN THE PUBLIC SCHOOL (3). A study of the goals, historical development, and present curricular practices in music education at all levels. *Fall and alternate summers*. Carter.

EDUCATION 121 INVESTIGATIONS AND TRENDS IN MUSIC EDUCATION (3). A survey of recent studies in the psychology of music; current practices here and abroad as reported in professional journals; readings and reports on selected topics such as programmed instruction. *Alternate summers*. Carter.

Note: Among the following courses numbered from 130 to 158, the 130 series comprises historical surveys that emphasize main composers, styles, forms, trends, centers, theories, and attitudes; the 140 series comprises forms or style species; and the 150 series comprises composer studies that emphasize contemporary environment, works, styles, forms, influences, and comparisons. All of these courses include lectures, reports, readings, analyses, and musical illustrations. Most of the courses are included in a three-year cycle which is outlined in a special Music Department Catalogue that is available upon request to the Chairman; the remainder are offered as the demand warrants.

- 130 HISTORY OF WESTERN INSTRUMENTS (3). A study of the various classifications of musical instruments in Western music from their origins to the modern forms, including usage. *Fall*. Woodward.
- 131 THE BAROQUE ERA, 1580-1750 (3). From Gabriellis and Monteverdi to Bach and Handel. Newman.
- 132 THE CLASSIC ERA, 1735-1830 (3). From Bach's celebrated sons to Beethoven and Schubert. Alden, Mason, Newman, Warburton.
- 133 THE ROMANTIC ERA, 1790-1915 (3). From Mendelssohn, Schumman, Liszt, and Chopin to Strauss, Pucinni, Mahler, MacDowell, and Rachmaninoff. Alden, Carter, Mason, Newman.
- 134 THE MODERN ERA FROM 1890 (3). From Impressionism to the present. Hannay, Newman.
- 135 AMERICAN MUSIC (3). Its growth and development from the early colonies to the present. Alden.
- 136 PERFORMANCE PRACTICES (3). Problems of rhythm, ornamentation, articulation, and expression in both instrumental and vocal music, with emphasis on the period from 1550-1825 and practical applications in an informal collegium musicum. Newman.
- 141 THE MADRIGAL (3). Its international flowering, especially at the peak of music's Renaissance era. Mason, Smither.
- 142 OPERA (3). A survey of the types, national and international trends, conflicts, and chief masterworks from opera's beginning around 1600 to the present. Carter, Mason.
- 143 MUSIC FOR WINDS (3). A survey from the Gabriellis to the present, from the octet to the wind symphony. Christianson.
- 144 ART SONG (3). A study of the development of this genre, especially during its great flowering in the *lieder*, *mélodies*, and other national types of the nineteenth century. Carter, Mason.
- 145 THE SONATA (3). A survey of the meanings, uses, spread, scoring, and structural changes of this form type from its origins to the present. One era is emphasized each time, as announced in advance. Newman.
- 146 THE STRING QUARTET (3). From its origins in early chamber music to its culmination in the Classic, Romantic, and Modern eras, including problems of texture, form, and performance. Alden.
- 147 THE SYMPHONY (3). The growth of the symphony as an independent orchestral genre, especially in the masterworks from Haydn, Mozart, and Beethoven to Prokofiev, Piston, and other Moderns. Alden, Andrews.
- 148 KEYBOARD MUSIC (3). A historical survey that follows either stringed keyboard music through the harpsichord, clavichord, and piano, or organ music in its successive stages. Kremer, Newman, Zenge.
- 151 J. S. BACH (3). With special attention alternately to the vocal and the instrumental works. Alden, Kremer, Newman.
- 152 MOZART (3). Mason, Newman, Alden.
- 153 BEETHOVEN (3). Alden, Newman.
- 154 HANDEL (3). Carter, Mason, Smither.

- 155 BRAHMS (3). Alden, Newman.
- 156 WAGNER AND VERDI (3). Carter, Mason, Newman.
- 157 DEBUSSY AND RAVEL (3). Mason.
- 158 STRAVINSKY AND SCHOENBERG (3). Hannay.
- 159 STUDIES IN MUSIC HISTORY (3). Other specific surveys in keeping with the era, form, style, and composer surveys in the 130, 140, and 150 series. Staff.
- 162 ORCHESTRATION (3). Practical exercises in scoring and arranging for various combinations from single instrumental choirs to full concert orchestra, with trial group performances. *Fall*. Serrins.
- 163 INSTRUMENTAL ARRANGING (3). Exercises in arranging for various combinations of woodwind, brass, and percussion instruments, with practical application. Christianson.
- 164 CHORAL ARRANGING (3). Theory and practice of arranging music for voices in all standard choral combinations with emphasis upon historical traditions and stylistic differences. *Spring*. Hoggard.
- 165 MODAL COUNTERPOINT IN SIXTEENTH-CENTURY STYLE (3). Includes exercises in the five species and in the composition of motets. *Fall*. Kremer.
- 166 COMPOSITION (3). Prerequisite, Music 32. Original compositions in various forms. *Fall and spring*. Hannay.
- 167 THE ELECTRONIC STUDIO (1). Limited to majors in the Division of Fine Arts, with permission of the instructor. An introduction to the technical aspects of electronic music, including familiarization with the Moog Synthesizer. A semester lab fee of five dollars will be charged for one hour per week or twenty-five dollars for three hours per week usage of departmental equipment. Additional usage only by special permission of the instructor prior to registration.
- 168 ADVANCED CONDUCTING (3). Prerequisite, Music 68. *Fall and spring*. Hoggard, Serrins.

Applied Music Requirements and Credits

All study of applied music in the Department of Music, both individual and group, has a fourfold purpose: (1) full training in the skills and techniques of the particular instrument or voice, (2) broad exploration into its literature, (3) application of principles and stylistic approaches introduced in the theory and history courses, and (4) varied experience in public performance. However, the system of applied music credits differs with each curriculum, in keeping with different requirements, emphases, and standards.

One hour per week of individual instruction throughout a semester earns one semester hour credit for non-music majors, music majors in an area which is not the student's main performance medium, and A.B. music majors beginning with the sophomore year. One hour per week of individual instruction

in the main performance medium earns two semester hour credits for all music majors in the freshman year, and B.M.Ed. majors throughout their undergraduate study. (B.M. Ed. majors do not usually take private instruction in the last semester of the senior year when practice teaching.) One hour per week of individual instruction in the main performance medium earns four semester hour credits for B.M. majors beginning with the sophomore year. B.M. majors must give both junior and senior recitals. One-half hour per week of individual instruction is possible for non-majors and for music majors in a minor performance medium and earns one-half semester hour credit.

Class instruction in applied music will be given as the demand warrants, with two hours of class instruction weekly, plus daily practice. One hour credit is given for each semester. Class instruction is designated by the suffix z.

The Music Department has established standards and requirements for each level of applied study in each degree plan. Details of these requirements for each instrument and voice may be requested from the department. The appropriateness of any student's study at a particular level is determined by audition before or at the time of enrollment and by examination at the end of the term. Any student who does not meet the minimum performance requirements for a music major may enroll for "credit, not applicable to a music degree," which is designated by the suffix x.

Every music major must enroll throughout his undergraduate residency for at least one hour per week of individual instruction in his main performance medium and at least one appropriate large ensemble course. He may enroll for individual instruction in other media, or class instruction in applied music, or other ensembles, depending upon his abilities, needs, interests, and available time. Required secondary performance areas for B.M.Ed. students may be studied either privately or in class instruction.

All majors whose main instrument is piano or organ are required, in addition to a large ensemble, to take Piano Ensemble (Music 7K) for one-half hour credit each semester throughout their undergraduate study of these instruments.

Proficiency requirements in basic skills. Every music major must demonstrate before graduation that he has a certain competence in the basic musical skills of sight-singing, notating from dictation, and keyboard performance (in terms of both

technical fluency and also harmonization, improvisation, etc.). Tests of these skills will normally be scheduled toward the end of the junior year. Minimal standards are determined by the particular course of study. Further details are available from the department.

Applied music fees: Fees for individual instruction are \$50.00 per semester for one half-hour lesson a week or \$100.00 per semester for one hour lesson a week. Fees for class instruction, instrumental or vocal, are \$15.00 per semester for each student. The fee for one hour of daily practice in a room with piano is \$6.00 per semester; for two hours of practice daily, \$10.50 per semester. (Advanced piano students may arrange to do at least part of their practicing on grand pianos.) Other fees are in proportion. The fee for six hours practice a week on the Schlicker, Möller or Reuter practice organ, \$24.00 per semester. Harp practice fees are \$24.00 per semester for one hour of daily practice. Most of the standard orchestral instruments are available on a rental basis.

APPLIED MUSIC TEACHERS

Piano: Blickenstaff, *Chairman*, Newman, Zenge, Horowitz, Boardman, Martin, Steelman, Johnson, Rochester, Leinwand, Wolter.

Organ: Kremer, *Chairman*, Bower, Gossett

Voice: Carter, *Chairman*, Mason, Porco, Wing, Boyd, Parker, Ligo

Strings: Alden, *Chairman*

Violin: Alden, Boyce, Geoghegan,
Smith

Viola: Woodward

Guitar: Westafer

Violoncello: Griffith, Logan

String bass: Bjorkman

Wind and percussion instruments: Serrins, *Chairman*

Bassoon: Andrews

Clarinet: Gilmore

Flute: Bowers

French horn: Staff

Harp: Pence

Oboe: Serrins

Percussion: Staff

Recorder: Vinquist

Saxophone: Gilmore

Trombone: Christianson

Trumpet: Harding

Tuba: Christianson

Applied Music Courses

Individual instruction for one hour or one half-hour per week, each semester, is available in voice and most instruments, with fees and variable credit as described above. A large variety of ensembles are also open to students, subject to approval of the conductor after audition. Undergraduates receive one hour credit per semester for each ensemble course except Piano Ensemble

(Music 7K), which gives one-half hour credit. Applied Music Courses are designated as follows:

1A Piano	5A French Horn
1B Organ	5B Trumpet
1C Harpsichord	5C Trombone
1X Keyboard instrument, credit not applicable to a music degree	5D Tuba
1Z Class Piano	5X Brass instrument, credit not applicable to a music degree
2 Voice	5Z Class Brass
2X Voice, credit not applicable to a music degree	6 Percussion
2Z Class Voice	6X Percussion, credit not applicable to a music degree
3A Violin	6Z Class Percussion
3B Viola	7A University Symphony Orchestra
3C Violoncello	7B Chamber Orchestra
3D String Bass	7C University Wind Ensemble
3E Harp	7D New Music Ensemble
3F Guitar	7E Jazz Lab Band
3X String instrument, credit not applicable to a music degree	7F Brass Chamber Music
3Z Class strings	7G Woodwind Chamber Music
4A Flute	7H String Chamber Music
4B Oboe	7J Mixed Chamber Ensemble
4C Clarinet	7K Piano Ensemble
4D Saxophone	7L Marching Pep Concert Band
4E Bassoon	8A Carolina Choir
4F Recorder	8B University Mixed Chorus
4X Woodwind instrument, credit not applicable to a music degree	8C University Chamber Singers
4Z Class Woodwinds	8D Glee Club
	8E Opera Theatre
	8F Other Vocal Ensemble

DEPARTMENT OF NAVAL SCIENCE

VINCENT J. ANANIA, *Captain, USN*

General Information

The Naval ROTC unit of The University of North Carolina at Chapel Hill was established in 1941, as one of fifty-four college and university units authorized by Congress. The purpose of the Naval Reserve Officers Training Corps is to provide a source of highly qualified officers for the Naval service. Students who obtain a baccalaureate degree, and who satisfactorily complete the required course of study in Naval Science and participate in the summer training cruises, may be commissioned in the Navy or the Marine Corps or their reserve components.

Students are enrolled in the Naval ROTC in two categories: College Scholarship Program and Contract Program.

College Scholarship Category: These students are selected by a nationwide competitive examination and interview process. Normally all high school seniors and high school graduates under age twenty-one are eligible. Applications must be submitted by early November of each year.

Contract Category: These students are selected generally by an interview process from those students applying for enrollment during the summer preceding their entrance into the University or during Freshman Orientation Week. Students in this category are considered excellent prospects for the Regular Category should they desire to make application to enter this selection process.

Regardless of the category, all students enrolled in the Naval ROTC receive the same instruction, wear the same uniform and must meet the same academic standards.

General Eligibility Requirements

Each candidate for the Naval ROTC must:

1. Be a male citizen of the United States.
2. At the time of his enrollment, if a minor, have the consent of his parent or guardian.
3. Be not less than seventeen nor more than twenty-one years of age on July 1 of the year in which he enters the program. (Contract student may be enrolled if sixteen years of age on July 1 of the year in which he enters the program.)
4. Gain his own admittance to the University.
5. Enter into a contract with the Secretary of the Navy, agreeing to accept a commission, if offered.
6. Be physically qualified in accordance with the standards for midshipmen.
7. If a Contract student, agree to accept a commission, if offered, as an Ensign, U. S. Naval Reserve or Second Lieutenant, U. S. Marine Corps or U. S. Marine Corps Reserve, and serve three years on active duty upon completion of college training.
8. If a Scholarship student, agree to accept a commission, if offered, as an Ensign, U. S. Navy, or Second Lieutenant, U. S. Marine Corps, and to serve at the pleasure of the President.

Further information regarding application for and admission in the Naval ROTC may be obtained from any Navy Recruiting Station, any established Naval Reserve Unit, or by addressing an inquiry to the Professor of Naval Science, The University of North Carolina at Chapel Hill, Chapel Hill, N. C.

Campus Status

The Naval ROTC student is required to wear a Naval Midshipman uniform while attending scheduled drill and Naval Science laboratory exercises and at certain other designated campus functions that are associated with the Naval ROTC Unit. Other than the above, each student leads the same campus life as students not enrolled in the Naval ROTC. He may participate in any scholarship aid program and, if necessary, may obtain outside employment to assist in financing his educational expenses. He is also encouraged to participate in varsity and intramural sports, as he may desire, and in other campus student activities.

Military Status

A student enrolled in the NROTC College Scholarship Category enlists in the U. S. Naval Reserve and is appointed a Midshipman, Naval Reserve. He is, in fact, a member of the national military organization.

A student enrolled in the Contract Category has the status of a civilian who has entered into a contract with the Secretary of the Navy, and as such, initially has no official status. However, in order to be eligible for continuation in the program for advanced training, i.e., the last two academic years, Contract students must enlist in a reserve component of the Navy or Marine Corps.

Both categories are referred to as "NROTC Students" or "Midshipmen" and both categories wear the Midshipman uniform as required.

Draft Deferment

A student enrolled in the Naval ROTC will be deferred from the draft (Selective Service Act of 1948 and Universal Military Training Act of 1951) if:

1. He pursues the Naval ROTC courses for four full years, including the summer training period applicable to his status as Contract or Scholarship student.
2. As a Contract student, he signs an agreement to accept a commission, to retain this commission for a period

of six years, and to serve not less than three years on active duty as an officer.

3. As a Scholarship student, he signs an agreement to accept a commission, to retain this commission for a period of six years, and to serve not less than four years on active duty as an officer.

Summer Training

Scholarship students: A summer training period of approximately six to eight weeks is conducted between academic years. During the first and third summers, at-sea training, aboard modern warships provides practical shipboard training. In the second summer period, training in aviation and amphibious warfare is conducted at Corpus Christi, Texas and Little Creek, Virginia.

Contract students: Contract students are required to participate in summer training between their junior and senior years, for a period of approximately six-eight weeks.

Scholarship and Contract students who elect to become candidates for a Marine Corps commission will be ordered to Officers Candidate School at Quantico, Virginia, for a period of six weeks between their junior and senior years.

Travel expenses for both Scholarship and Contract students from the University to the summer training site and return are furnished by the government. In addition, all students receive active duty pay during summer training amounting to approximately \$160.00 per month.

Emoluments, Textbooks, and Uniforms

Students in each of the categories of Naval ROTC students receive certain emoluments and certain defrayments of expenses while so enrolled.

Scholarship category students: These students are granted the compensations and benefits authorized by law for a period not exceeding four years. The Navy pays the cost of tuition fees, and all textbooks. Necessary uniforms are provided and students receive retainer pay of \$50 per month except during summer training periods when the higher active duty rate of pay applies. Reimbursement is also provided for cost of initial travel to Chapel Hill.

Contract category students: For these students the Navy provides the necessary uniforms and Naval Science textbooks. During the last two years they receive retainer pay at the rate of \$50 per month, except during the summer training period when the higher active duty rate of pay applies.

Curriculum

Since the University does not grant a degree in the field of Naval Science, students in the Naval ROTC take Naval Science courses as electives. They are governed by the rules of the appropriate division regarding the distribution of such courses among departmental, divisional, and non-divisional courses.

Specifically, the six courses taken in the Department of Naval Science by a student who completes the normal four-year program prescribed by the Naval ROTC represent 18 semester hours entered in the students permanent record. Five of these courses (representing 15 semester hours) may be offered as electives for graduation credit by the student who satisfactorily completes the Naval ROTC program and, at the same time, meets all requirements of his particular degree program. The other Naval Science course (three semester hours) represents an addition to the minimum requirement for graduation.

The 15-semester hours graduation credit is secured by substitution of Naval Science courses for academic electives. In the General College, the Naval ROTC student may offer two Naval Science courses representing six semester hours as electives. In the College of Arts and Sciences or undergraduate professional school, he may offer three additional Naval Science courses, representing nine semester hours. Distribution of these electives must conform to the student's particular degree pattern and must be approved by his academic dean or adviser.

In addition to Naval Science subjects all NROTC students are required to complete three allied courses prior to graduation. Two of these courses (six semester hours), Computer and Information Science 16, 17, 18, or 19 and History 77, will normally be taken during the sophomore year when there are no Naval Science courses scheduled. The third required course, Political Science 149 (three semester hours), will normally be scheduled during either the junior or senior year.

All students take the same basic courses in the first two years. In the junior and senior years students who desire to apply for commissions in the Marine Corps, may elect courses 53 and 54. All courses are three lectures and two laboratory period a week, except 21 and 22 (see below).

- 13 INTRODUCTION TO NAVAL SHIPS SYSTEMS II (3). An extension of Naval Ships Systems I; ships engineering geared to a non-technical background. *Spring*. Hutton.
- 12 INTRODUCTION TO NAVAL SHIPS SYSTEMS (3). A survey of ship design, characteristics, propulsion (including nuclear power) and control systems, and the principles of ship stability. *Spring*. Hutton.
- 21 HISTORY OF SEA POWER/MARITIME AFFAIRS (1—no credit). A seminar Survey of Naval and Maritime History, emphasizing the evolu-

tion of sea power and its influence upon history. Includes sea power and its use as an instrument of national policy. *Fall*. Milioti.

- 22 HISTORY OF SEA POWER/MARITIME AFFAIRS (1—no credit). A continuation of Naval Science 21. *Spring*. Milioti.
- 53 EVOLUTION OF WARFARE (3). The evolution of warfare through the study of selected campaigns and classic battles, with emphasis on principles of war, the impact of leadership, and the evolution of tactics, weapons, and weaponry. (1971-72 and alternate years). *Fall*. Reed.
- 54 AMPHIBIOUS WARFARE (3). A historical survey of the projection of sea power ashore, with special emphasis on the evolution of amphibious warfare in the 20th century. (1970-71 and alternate years). *Fall*. Reed.
- 61 NAVIGATION AND NAVAL OPERATIONS I (3). A comprehensive study of the theory, principles and procedures of ship navigation, movements and employment. Course includes spherical trigonometry, mathematical analysis, study and practices, spherical triangulation, sextants, and publications and reports logs. Covers rules of the road, lights, signals and navigational aids, including inertial systems. *Fall*. Zynda.
- 62 NAVIGATION AND NAVAL OPERATIONS II (3). A continuation of Naval Science 61. *Spring*. Zynda.
- 81 PRINCIPLES OF NAVAL ENGINEERING (3) (Seniors only). Nuclear and thermo-dynamic principles and their application to Naval engineering systems; theoretical damage control and ship stability. (To be phased out after fall 1970). *Fall*. Morgan.
- 82 PRINCIPLES AND PROBLEMS OF LEADERSHIP (0) (Seniors only). A study of the psychological principles of human relations, stressing problems of command, management, and moral leadership. (To be phased out after Springs, 1971.) *Spring*. Dunnagan, Morgan.

DEPARTMENT OF PATHOLOGY

KENNETH MERLE BRINKHOUSE, *Chairman*

- 52 CLINICAL PATHOLOGY (3). Prerequisites, general chemistry and one course in zoology. An introductory course in the basic principles of human disease. Hematopathology, clinical chemistry, pathophysiology, diagnostic cytopathology, and clinical microbiology will be emphasized. *Two lecture and two laboratory hours a week, spring semester*. Staff.
- 90 PATHOLOGY FOR PHYSICAL THERAPY STUDENTS (3). Prerequisites, anatomy, histology, and physiology. A series of lectures and demonstrations of pathologic processes. *Four and a half lecture and laboratory hours a week, fall semester*. Geratz.
- 107 INTRODUCTION TO NEUROBIOLOGY (Biochemistry 107) (Neurobiology 107) (Pharmacology 107) (Physiology 107) (3). Prerequisites, one course in biological science, and permission of director neurobiology program. *Three lecture hours a week, fall semester, alternate years*. Staff.
- 155 GENETIC SYSTEMS (3). No prerequisites. A beginning course in genetics with the lectures arranged to develop the principles of inheritance while also acquainting students with the research potential

of various organisms commonly used in genetic investigations. *Three lecture hours a week, fall semester.* Graham, Goyer; staff.

- 161ab PATHOLOGY (13). Prerequisites, anatomy, histology, physiology, biochemistry. *Six lecture, eight laboratory hours a week, fall semester; two lecture, three and a half laboratory and one and a half clinicopathologic conference hours a week, spring semester.* Staff. (161F for dental students only. Six lecture and six laboratory hours, fall semester. Staff.)
- 162 EXPERIMENTAL PATHOLOGY. Hours, credits, and instructor to be arranged.
- 170S SPECIAL AND CLINICAL PATHOLOGY (3%). Prerequisite, Pathology 161F. Designed for dental students. *One lecture hour a week, spring semester.* Staff.

DEPARTMENT OF PHILOSOPHY

WERNER DAVID FALK, *Chairman*

The Department of Philosophy is a member of the Humanities, Social Sciences, and Natural Sciences divisions of the College of Arts and Sciences. Philosophy may be taken as an elective, as a major or as part of a double major by students in any of these divisions; it may also be taken to meet certain General College requirements (mathematics-logic-classics requirement and the sophomore social science requirement).

For beginners, Philosophy 20 is recommended as a first course for those interested in philosophical issues and their cultural significance; 21 for those interested in the nature of argument and training in clarity of thought and logic rigor; 22 for those seeking clarification and understanding of moral thought and experience; 31 for those who wish to investigate the logic of inquiry in both the formal and the empirical sciences. Philosophy 20, 21 and 31 may be taken to meet the General College mathematics-classics-logic requirement.

Philosophy 52, 56, 58, 59, and 60 are for beginning undergraduates with a more mature interest in philosophy. Courses on the 100 level are for advanced undergraduates, graduates and for students in the natural and social sciences, computer and information science, and literature, with an interest in philosophical problems connected with their special subject matter.

An undergraduate student planning a philosophy major will elect the Department of Philosophy as in one of the three divisions of Humanities, Social Sciences and Natural Sciences and will be governed by the rules of that division regarding the distribution of his work among departmental, divisional, and non-divisional courses. Each student will decide his junior and senior program in consultation with his adviser. He will have to take at

least six courses above the 50 level in the area of philosophy. Any two courses out of Philosophy 20, 21, 22, 31, are prerequisites for Philosophy majors.

(Higher-level courses may be substituted for these with the consent of the Department.) Philosophy 56, 58, and 96 are required. Philosophy 59, 97, 101, and 102 are especially recommended, though the student is welcome to make other choices according to his interests. Majors interested in a degree with honors should consult page 32 of this bulletin and their departmental adviser.

- 20 GENERAL INTRODUCTION TO PHILOSOPHY (3). The nature of philosophical thinking; philosophical ideas in Western civilization. *Fall and spring*. Adams, Aldrich; staff.
- 20A GENERAL INTRODUCTION TO PHILOSOPHY (3). Honors. *Fall and spring*. Staff.
- 21 INTRODUCTORY SYMBOLIC LOGIC (3). *Fall and spring*. Resnik; staff.
- 21A INTRODUCTORY SYMBOLIC LOGIC (3). Honors. *Fall and spring*. Resnik.
- 22 INTRODUCTORY ETHICS (3). *Fall and spring*. Staff.
- 25 INTRODUCTION TO PHILOSOPHY OF THE SOCIAL SCIENCES (3). Positive and normative social science. Models and levels for describing and explaining social phenomena: individual, statistical, holistic approaches; rational, causal, functional explanations. Mechanistic, behavioristic, evolutionary, cybernetic interpretations and their interrelations. *Spring*. Zaffron.
- 31 INTRODUCTORY LOGIC OF SCIENCE (3). *Fall and spring*. Schlesinger.
- 51 INTERMEDIATE SYMBOLIC LOGIC (3). A sequel to 21. Topics include the first-order predicate calculus, identity, descriptions, relations, soundness and completeness. *Spring*. Resnik.
- 52 INTRODUCTORY PHILOSOPHY OF RELIGION (Religion 52) (3). A philosophical inquiry into the problems of religious experience and belief, as expressed in philosophic, religious and literary documents from traditional and contemporary sources. *Fall and spring*. Staff.
- 56 ANCIENT PHILOSOPHY (3). No prerequisite. A philosophical examination of the writings of the Pre-socratics, Plato, Aristotle, Epicureanism, Stoicism, Neoplatonism, and Greek Skepticism. *Fall and spring*. Galligan.
- 58 BEGINNINGS OF MODERN PHILOSOPHY (3). No prerequisite. A critical study of selected works of Descartes, Spinoza, Leibniz, Locke, Berkeley, Hume, Kant. *Fall and spring*. Vance.
- 59 EXPERIENCE, KNOWLEDGE AND REALITY (3). Some previous course is recommended. Perception, introspection, truth, knowledge and belief, the external world and other minds will be among the topics selected for discussion. *Fall and spring*. Staff.

- 60 **EXISTENTIAL PHILOSOPHY FROM KIERKEGAARD TO SARTRE** (3). An examination of existentialism and the philosophy of being, as presented in the work of such authors as Kierkegaard, Nietzsche, Marcel, Heidegger, Jaspers and Sartre. *Fall and spring*. Smyth.
- 61 **FREE WILL AND DETERMINISM** (3). The nature of action, choice, will, and responsibility; cause, chance, and reason; universal determinism, fatalism, psychic determinism, and physical indeterminism. *Spring*. Zaffron.
- 65 **RECENT EXISTENTIAL THOUGHT AND ITS CRITICS** (3). An examination of existential philosophy since World War II and of its relations to other intellectual movements, including East European Marxism and French structuralism. *Spring*. Smyth.
- 66 **CLAIMS OF SCIENCE AND RELIGION** (Religion 66) (3). A study in conflict and complementarity; creation and evolution. Empiricism, miracles, revelation. Quantum mechanics and free will. The vindication of induction and Pascal's wager. *Spring*. Schlesinger.
- 96 **COLLOQUIUM FOR PHILOSOPHY MAJORS** (3). Discussion of selected philosophical topics. Required for Philosophy majors, normally to be taken in the spring semester of their junior year. *Spring*. Vance.
- 97 **ADVANCED COLLOQUIUM FOR PHILOSOPHY MAJORS** (3). Discussion and exercises in selected philosophical topics. *Fall*. Rosenberg, Smyth.
- 99 **DIRECTED READINGS** (3). See the Director of Undergraduate Studies of the Department. *Fall and spring*. Staff.
- 100a **COURSES FOR HONORS** (3 each). See the Director of Undergraduate
- 100b **Studies of the Department**.
- NOTE: Prerequisite for the following courses, one course below 100, or consent of the instructor.
- 101 **SYMBOLIC LOGIC** (Computer and Information Science 186) (Linguistics 104) (3). An introduction for graduates and advanced undergraduates not taking the 21-51 sequence. *Fall*. Heintz, Resnik.
- 102 **ETHICS** (3). A critical study of the major tendencies in the history of of the philosophy of ethics. *Fall*. Falk, Long.
- 103 **PHILOSOPHY OF ART** (3). Development of a comprehensive and systematic philosophy of art and criticism through examination of contrasting aesthetic theories and works of art. *Spring*. Aldrich.
- 104 **HEGEL, MARX AND THE PHILOSOPHICAL CRITIQUE OF SOCIETY** (3). Certain trends in modern social, political and psychological thought as found in the philosophies of Hegel, Marx, Nietzsche, and others. Ideology and conflict, alienation, dialectic. *Fall*.
- 105 **SOCIAL AND POLITICAL PHILOSOPHY** (Political Science 161) (3). The logic of social and political thought with an analysis of such concepts as society, state, power, authority, freedom, social and political obligation, law, rights. *Spring*. Falk.
- 106 **PHILOSOPHY OF MATHEMATICS** (3). Prerequisites, Philosophy 101 or equivalent background in logic or mathematics. Philosophical problems concerning logic and the foundations of mathematics. *Spring*. Resnik, Heintz.

- 107 PHILOSOPHY, HISTORY AND THE SOCIAL SCIENCES (Sociology 107) (3). The nature of historical explanation, structural and functional explanation, the weighing of historical testimony, the concept of meaning, normative judgments and predictions in the social sciences. *Fall*. Zaffron.
- 108 PHILOSOPHY OF NATURAL SCIENCES (3). Concept formation, verifiability, law, explanation, the role of logic and mathematics in the sciences, and other topics. *Fall*. Schlesinger.
- 109 PHILOSOPHICAL PROBLEMS IN PSYCHOLOGY (3). The nature and validation of psychological concepts, laws, and theories; theories of mind, with emphasis on the comparative study of such concepts as motivation, intention, emotion, and action. *Spring*. Zaffron.
- 110 PHILOSOPHY OF LANGUAGE (Computer and Information Science 178) (Linguistics 110) (3). A study of important contemporary contributions in philosophy of language, meaning, reference, and truth. *Fall and spring*. Ziff.
- 111 ADVANCED SYMBOLIC LOGIC (Computer and Information Science 187) (3). Presupposes propositional and quantificational logic as a basis for further deductive development with special attention to selected topics: alternative systems, modal and deontic logic, inductive logic, the grammar of formalized languages, paradoxes and foundations of mathematics. *Spring*. Heintz, Rosenberg.
- 115 FOUNDATIONS OF MATHEMATICS (3). The study of formal foundations for mathematics. Basic results concerning consistency, completeness and undecidability. Constructive consistency proofs for elementary number theory. *Fall*. Resnik.
- 120 RECENT SPECULATIVE PHILOSOPHY (3). A close study of one or more system(s) of speculative metaphysics, as represented in the work of such recent authors as F. H. Bradley, A. N. Whitehead, G. Santayana and E. Cassirer. *Fall*. Smyth.
- 142 PHILOSOPHY IN LITERATURE (Comparative Literature 142) (3). Selected literary classics from ancient times to the present, emphasizing changing approaches to such perennial problems as the nature and destiny of man; evil, freedom, and tragedy. *Fall*.
- 145 PHILOSOPHICAL ISSUES IN THE PRESENT CRISIS IN EDUCATION (Education 145) (3). The nature, methods, and limits of education by a philosophical exploration of mind and language. Emphasis on habits, skills, motivation, experience and discursive thought and their roles in the formation of an educated mind. *Summer*. Adams.
- 150 PLATO (3). An examination of some representative works of Plato, with reference to common emphases and basic problems, together with an analysis of their philosophic content. *Fall*. Galligan.
- 151 ARISTOTLE (3). An examination of some representative works of Aristotle, with reference to common emphases and basic problems, together with an analysis of their philosophic content. *Spring*. Galligan.
- 152 THE DEVELOPMENT OF MEDIEVAL PHILOSOPHY (Religion 152) (3). Philosophical topics from the writings of Augustine, Abelard, Thomas Aquinas, Duns Scotus, William of Ockham. To include: knowledge, universals, individuation, the theory of distinctions. *Spring*. Galligan.

- 153 CONTINENTAL RATIONALISM (3). The metaphysical systems of Descartes, Spinoza, and Leibniz as seventeenth-century attempts to reconcile the medieval tradition and the early developments of modern natural science. *Fall*. Smyth.
- 154 BRITISH EMPIRICISM (3). An epistemological study of Locke, Berkeley, and Hume. *Spring*. Smyth.
- 155 KANT (3). A study of Kant's critical philosophy as rooted in eighteenth-century rationalism and empiricism and as initiating German idealism. *Spring*. Smyth, Vance.
- 156 HEGEL (3). Hegel's Absolute Idealism: its roots in Kant's critical philosophy and its influence on subsequent thought in Europe and America.
- 158 EXISTENTIALISM AND PHENOMENOLOGY (3). A study of one or two major systematic works in this area by Sartre, Heidegger or Merleau-Ponty. *Spring*.
- 159 AMERICAN PHILOSOPHY (3). The emergence of systematic American philosophy from its matrix in earlier theological, social, and literary thought. Chief emphasis on the late nineteenth and early twentieth centuries. *Spring*. Smyth.
- 190 SET THEORY AND LOGIC (3). Natural and real numbers. Infinite cardinal and ordinal numbers. Alternative axiom systems and their consistency problems. *Spring*. Resnik.

DEPARTMENT OF PHYSICAL EDUCATION

CARL S. BLYTH, *Acting Chairman*

The purpose of the work of the Department of Physical Education can be stated as follows: (1) to teach the knowledge and skills of individual and team sports, aquatics and the dance; (2) to provide the professional education for teachers in the field of health and physical education; (3) to provide a program of adaptive physical education for the atypical student; (4) to provide for all students through the intramural program opportunities for voluntary participation in competitive and recreational activities.

Major requirements for students working for an A.B. in Education are: Physical Education 75, 76, 77, 78, 79, 86, 87, 88, 89 for men and women; and 65, 66, 67 for men or 55, 56, 57 for women.

For those working toward an A.B. in Arts and Sciences requirements in the major are: Physical Education 75, 76, 77, 86; two courses from Physical Education 78, 79, 87, 88, 89, and 127; and two courses from Physical Education 65, 66, 67 for men or 55, 56, 57 for women.

All majors in the School of Education must have for teacher certification in North Carolina the following: Zoology 11, Education 41, 71, 72b, 99, 63, 64.

- 1 PHYSICAL EDUCATION (1 each). Required of freshman men. *Four hours a week, fall and spring.* Staff.
- 3 PHYSICAL EDUCATION (1 each). Elective for sophomore, junior and senior men. *Four hours a week, fall and spring.* Staff.
- 21W PHYSICAL EDUCATION (1 each). Required of freshman women. *Four hours a week, fall and spring.* Staff.
- 31W PHYSICAL EDUCATION (1 each). Elective for sophomore, junior and senior women. *Four hours a week, fall and spring.* Staff.
- 41 PHYSICAL EDUCATION (3). Elective, open to all men. Personal and community health for men. This course deals with basic concepts of personal and community health in modern society. Mental health, physical fitness, health products and services, understanding chronic and degenerative diseases, and problems of medical care are considered. *Three hours a week, fall and spring.* Staff.
- 42 PHYSICAL EDUCATION (3). Elective, open to all women. Personal and community health for women. This course deals with basic concepts of personal and community health in modern society. Mental health, physical fitness, health products and services, understanding chronic and degenerative diseases, and problems of medical care are considered. *Three hours a week, fall and spring.* Staff.

For Women Who Are Majoring in Physical Education:

- 55 PHYSICAL EDUCATION (3). Methods and materials in volleyball, hockey, track and field, soccer, speedball, basketball, archery, and recreational games. (1971-1972 and alternate years.) *Ten laboratory hours a week, fall.* Hogan, Kellam, Fink, Steacy.
- 56 PHYSICAL EDUCATION (3). Methods and materials in folk, square, social and modern dance, elementary school physical education, and softball. *Ten laboratory hours a week, spring.* Kellam, Hogan.
- 57 PHYSICAL EDUCATION (3). Methods and materials in tennis, golf, swimming, gymnastics, stunts and tumbling, life saving, badminton and fencing. (1970-1971 and alternate years.) *Ten laboratory hours a week, fall.* Kellam, Hogan, Yarborough.

For Men Who Are Majoring in Physical Education:

- 65 PHYSICAL EDUCATION (3). Methods, materials, techniques and skills in teaching and coaching baseball, track, football, and basketball. *Ten hours a week, fall.* Lovingood, Newman, Mueller, Lotz.
- 66 PHYSICAL EDUCATION (3). Methods, materials, techniques and skills in teaching dancing, gymnastics, tennis, badminton, fencing, and wrestling. *Ten hours a week, spring.* Coxhead, Peacock, Skakle, Esposito, Sanders, Miller.
- 67 PHYSICAL EDUCATION (3). Methods, materials, techniques and skills in teaching and coaching swimming, golf, handball, volleyball, soccer, speedball, recreational games, and tumbling. *Ten hours a week, fall.* Earey, Allen, Mueller, Metzger, Ronman, Sanders, Glad.

For Undergraduate Majors in Physical Education:

- 75 ANATOMY (3). This course is designed to teach the fundamentals of anatomy as they apply functionally to the area of health and physical education. *Fall.* Blyth.

- 76 PHYSIOLOGY (3). Prerequisite, Physical Education 75 or the equivalent of Zoology 11, 41. A lecture course in elementary physiology, covering the various systems of the body. *Spring*. Blyth.
- 77 PRINCIPLES OF PHYSICAL EDUCATION (3). Open to all students as an elective course. A study of the relationship and contribution of physical education to general education; historical background, basic biological, physiological, psychological, and sociological backgrounds of the modern program. *Fall and spring*. Allen, Metzger, Dunham.
- 78 SCHOOL AND COMMUNITY HEALTH (3). Open to majors only. The purpose of the course is to give the student an understanding of the principles and problems of personal, school and community health as they apply to everyday living. *Spring*. Earey.
- 79 TESTS AND MEASUREMENTS IN PHYSICAL EDUCATION (3). This course is designed to acquaint students with tests and measurements in the fields of health and physical education, test construction, scoring and methods of using results. *Fall*. Dunham.
- 83a PHYSICAL EDUCATION FOR THE ELEMENTARY SCHOOL (3). This course deals with the selection of materials and methods of physical education in the elementary school. Elective for men majoring in physical education and required of elementary education majors; other students must secure written permission of instructor. *Fall and spring*. Kellam, Hogan, Metzger.
- 83b PHYSICAL EDUCATION (3). This course deals with the methods and materials of teaching physical education for girls in the junior and senior high school. *Summer session only*. Kellam, Fink.
- 84 HEALTH EDUCATION FOR THE ELEMENTARY SCHOOL (3). This course includes principles, practices, and procedures in health at the elementary level. The course is required of all majors in elementary education. *Fall and spring*. Earey, Glad.
- 86 ADMINISTRATION OF HEALTH AND PHYSICAL EDUCATION (3). This course deals with the policies and problems of organization and administration of health and physical education programs in schools. *Fall*. Allen, Hyatt, Kellam,
- 87 ADAPTED PHYSICAL EDUCATION (3). Prerequisite, anatomy and physiology. This course is a study of problems relating to body mechanics, and the needs of the physically handicapped student. *Fall*. Glad, Fink.
- 88 SAFETY, FIRST AID, ATHLETIC INJURIES (3). Open to majors in physical education, recreation and education; other students by permission of instructor. This course considers the problem of safety in public schools, the theory and practice of first aid, and the care and treatment of athletic injuries. *Spring*. Earey, Fink.
- 89 APPLIED PHYSIOLOGY OF EXERCISE AND KINESIOLOGY (3). Prerequisites, zoology, anatomy, and physiology, or their equivalents. The application of physiological and kinesiological principles applied to muscular activity. Emphasizes the mechanics of bodily movements and the role of exercise in physical growth and development. *Two lecture and two laboratory hours a week, fall*. Lovingood.

- 120 PRINCIPLES OF PHYSICAL EDUCATION (3). Prerequisite, undergraduate work in education and psychology. *Fall*. Metzger.
- 121 ADMINISTRATION OF PHYSICAL EDUCATION (3). *Spring*. Shepard, Fink, Allen.
- 123 SCHOOL HEALTH EDUCATION (3). Prerequisite, basic courses in science. *Fall*. Earey, Peacock.
- 126 ADAPTED PHYSICAL EDUCATION (3). Prerequisites, anatomy and physiology, or equivalent. *Spring*. Glad, Fink.
- 127 INTRAMURAL AND EXTRAMURAL ACTIVITIES FOR SCHOOLS AND COLLEGES (3). *Fall*. Allen.

DEPARTMENT OF PHYSICS

JAMES H. CRAWFORD, JR., *Chairman*

Students may work toward either a B.S. degree in physics or an A.B. degree with physics as the major. Students planning to do graduate work in physics will find the B.S. degree preferable.

Candidates for an A.B. degree with physics as the major must satisfy the requirements of the College of Arts and Sciences, and must complete the following specific departmental requirements: Chemistry 11, 11L, 12, 12L (or 11, 11L, 21, 21L); Mathematics 31, 32, 33, 34; Physics 24, 25, 54, 55 (or 26, 27, 28), 52 (or 103), 58 (or 107); and three additional courses selected from Physics 61, 101 (or 141), 104, 105, 106, 108, 115, 160, 161, 162, 169, Astronomy 32.

The Department also offers an honors program for students majoring in physics. This program includes advanced course work or research, and an oral examination. Students who wish to enter the honors program should consult with their departmental advisers not later than the preregistration period in the spring semester of their junior year.

Requirements for Bachelor of Science in Physics

GENERAL COLLEGE

(For freshman and sophomore years see page 38.)

JUNIOR YEAR

Physics 103, 104, 107, 108, and two courses from Mathematics 121 (or 126), 122 (or 127), and 124.

Three nondivisional electives

SENIOR YEAR

Physics 105, 106, 141, 160, and at least one of the following: 161, 162, or 169

Two nondivisional electives

1. Astronomy 32 may be substituted for any physics course in the program which is not an essential prerequisite for later work.

- 20 BASIC CONCEPTS OF PHYSICS (4). No prerequisite. Basic principles of physics with introduction to quantum physics, atoms, nuclei, and relativity. Not to be taken for credit after Physics 24-25, or 26-27. *Three lecture and two laboratory hours a week, fall and spring.* Staff.
- 21 FRONTIERS OF PHYSICS (3). No prerequisite. An elementary presentation, for non-science majors, of recent developments, such as lasers, quasars, elementary particles, nuclear energy, antimatter; with concepts necessary for understanding these developments. *Fall and spring.* Staff.
- 24 GENERAL PHYSICS (4 each). Corequisite (for Physics 24), Mathematics 15, or equivalent. *Two lecture, one recitation, and two laboratory hours a week, fall and spring.* Staff.
- 26 MECHANICS (4). Prerequisite, Mathematics 31, or by permission. Mechanics of particles and rigid bodies. Newton's laws; conservation principles. Oscillatory and wave motion. Sound. *Four hours lecture and recitation a week, fall and spring.* Staff.
- 27 THERMAL PHYSICS AND ELECTROMAGNETISM (4). Prerequisite, Physics 26. Heat and kinetic theory of gases. Electricity and magnetism; laws of Coulomb, Ampere and Faraday. Electromagnetic oscillations and waves. *Four hours lecture and recitation, two hours laboratory a week, fall and spring.* Staff.
- 28 OPTICS AND MODERN PHYSICS (4). Prerequisites, Physics 26 and 27. Light; diffraction and interference. Photons and electrons; wave-particle duality. Elements of atomic theory. Nuclei and fundamental particles. *Three lecture and three laboratory hours a week, fall and spring.* Staff.
- 31 DESCRIPTIVE ASTRONOMY (3). No prerequisite. A study of the celestial sphere, time, earth, moon, artificial satellites, eclipses, sun, solar system, stars, the Milky Way, extragalactic systems and cosmogony. *Fall and spring.* Staff.
- 31L DESCRIPTIVE ASTRONOMY LABORATORY (1). Corequisite Astronomy 31. Laboratory exercises, demonstration exercises and elementary calculations to illustrate methods used in astronomy. Some constellation study. *Two laboratory hours a week, fall and spring.* Staff.
- 32 GENERAL ASTRONOMY (3). Prerequisites, Astronomy 31, Mathematics 31, and Physics 24. A more intensive study of the subjects in Astronomy 31 with emphasis on such selected topics as spectroscopic analysis of stars, the Hertzsprung-Russell Diagram, typical stellar systems, and modern cosmogonies. *Spring. On demand.* Staff.
- 36 PHYSICS OF MUSIC (3). Oscillations and waves; the nature of sound, pitch, sound, and tone quality; numerical basis of scales and harmony; resonance, auditory response and acoustic response; properties of musical instruments; acoustics of auditoria; electronic generation of music. *Fall.* Staff.
- 37 PHYSICS AND SOCIETY (3). No prerequisites. The relevance of science is to be examined by tracing the impact of physics on society throughout history with emphasis on recent times. *Fall and spring.* Staff.
- 45 PHOTOGRAPHY (4). *Three lecture and three laboratory hours a week, fall and spring.* Staff.



- 52 BASIC MECHANICS (3). A one semester course in mechanics, statics, kinematics, simple harmonic motion, central forces and applications from modern physics. *Spring*. Staff.
- 54 MODERN DEVELOPMENTS IN PHYSICS (3). Prerequisite, Physics 27 (or 25 with permission of the instructor). *Fall*. Staff.
- 55 INTRODUCTION TO MODERN PHYSICS LABORATORY (1). Co-requisite, Physics 54. Laboratory course to accompany physics 54. *Three laboratory hours a week, fall*. Staff.
- 58 BASIC ELECTRICITY AND MAGNETISM (4). Prerequisite, Physics 25 and Mathematics 33. Electric fields and potentials; dielectrics; steady currents; magnetic flux and magnetic materials; electromagnetic induction; behavior of charged particles in electric and magnetic fields; transients; alternating currents. *Three lecture and three laboratory hours a week, spring*. Staff.

- 61 INTRODUCTION TO THE TECHNIQUES OF PHYSICS (4). Prerequisite, Physics 27 (or 25); corequisite, Mathematics 33. Calculus, vector analysis, differential equations, matrices and computer programming are considered with particular regard to their application to physical systems. *Three lecture and two computational laboratory hours a week, fall and spring.* (Primarily for physics majors during spring semester). Staff.
- 91 RESEARCH AND SPECIAL TOPICS FOR SENIORS (2 each). To be taken by honors candidates and other qualified seniors. Staff.
- 93 SENIOR SEMINAR (2). To be taken by seniors with permission of department adviser. *Upon demand.* Staff.
- 101 INTRODUCTORY ELECTRONICS I² (4). Prerequisite, introductory physics or permission of the instructor. This course is designed to give students a sound working knowledge of basic electronic principles. *Three lecture and three laboratory hours a week, fall and spring.* Staff.
- 102 INTRODUCTORY ELECTRONICS II² (4). Prerequisite, Physics 101, or permission of the instructor. This course, which is based directly on Physics 101, emphasizes the functional aspect of electronic equipment. *Three lecture and three laboratory hours a week, spring.* Staff.
- 103 MECHANICS I² (3). Prerequisites, Physics 27 (or by permission) and Mathematics 33. Particle kinematics. Central forces, planetary motion. Systems of particles and conservation laws. Statics. Motion of rigid bodies. Constrained motion. Wave motion on a string. *Fall.* Staff.
- 104 MECHANICS II² (3). Prerequisite, Physics 103. Elements of computer programming. Deformable bodies and wave motion. Hydrostatics and hydrodynamics. Lagrange's and Hamilton's equations; Hamilton's principle, small oscillations, normal coordinates. Special theory of relativity. *Spring.* Staff.
- 105 HEAT, THERMODYNAMICS, AND KINETIC THEORY² (4). Prerequisites, Physics 27 (or 25 by permission) and Mathematics 33. The thermodynamic laws, internal energy, enthalpy, entropy, thermodynamic potentials; the Maxwell equations. Equipartition theorem; the Maxwell velocity distribution. Classical and quantum statistics. *Three lecture and two recitation hours a week, fall.* Staff.
- 106 OPTICS² (4). Prerequisites, 107 and 108 (or 58 by permission). Elements of geometrical optics; Huyghens' principle, interference, diffraction, and polarization. Elements of the electromagnetic theory of light; Fresnel's equations, dispersion, absorption, and scattering. Photons. Lasers and quantum optics. *Three lecture and three laboratory hours a week, spring.* Staff.
- 107 ELECTRICITY AND MAGNETISM² (4 each). Prerequisites, Physics 108 and Mathematics 33 (or by permission). Brief treatment of d-c and a-c circuit theory. Electrostatics; dielectrics; the magnetic field; magnetic materials. Maxwell's equations and their application to electromagnetic waves. *Fall and spring.* Staff.
- 115 THE EVOLUTION OF PHYSICAL IDEAS² (History 153) (3). Prerequisites, Physics 25 and Mathematics 15 (or by permission). A systematic study of the growth of physics from the time of Copernicus,

2. Physics 101-115 are not to be taken for graduate credit by graduate students in physics.

concentrating on the Newtonian synthesis and on the nineteenth-century emergence of electromagnetism, wave optics, and thermodynamics. *Spring*. Staff.

- 131 INTRODUCTION TO CELESTIAL MECHANICS (3). Prerequisites, Physics 26, Mathematics 31 and 32. The differential equations and their integrals in the two-body program. Computation of orbits. The three-body problem. Perturbation theory. Satellite theory. *Upon demand*. Staff.
- 141 ELECTRONICS (3). Prerequisites, Physics 103 and 107 (or 58 by permission), Mathematics 124. Basic electronics with emphasis on circuitry. Solid state and vacuum tube oscillators, amplifiers and wave shaping circuits. *Two lecture and three laboratory hours a week, spring*. Staff.
- 146 ELECTRONS IN NONMETALS (3). Prerequisites, Physics 141 and 160. Electrical and optical properties of materials. Band structure, excitons, color centers, impurity states, phenomenological description, response time, sensitivity, recombination and trapping, space charge, effects, tunneling and injection, rectification. *Spring*. Staff.
- 160 INTRODUCTION TO QUANTUM MECHANICS (3). Prerequisites, Physics 103 and 108, or by permission. Origins of quantum theory. Uncertainty principle. Schrodinger equation for simple systems, including hydrogen atom. Perturbation theory. Spin. Identical particles. *Fall*. Staff.
- 161 NUCLEAR PHYSICS (3). Prerequisite, Physics 160 or equivalent. Nuclear structure, nuclear reactions, experimental techniques of producing and studying nuclear particles; models of the nucleus; nuclear forces. *Spring*. Staff.
- 162 ELEMENTARY PARTICLE PHYSICS (3). Prerequisite, Physics 160 or equivalent. Kinematics of particle collisions. Cross sections and transition amplitudes. Symmetry and conservation laws. Strong, electromagnetic, and weak interactions. Classification of hadrons. Production and detection of particles. *Spring*. Staff.
- 168 X-RAYS AND THE SOLID STATE (Geology 148) (3). Prerequisites, elementary physics, differential and integral calculus. The description of crystal types. X-ray diffraction theory. X-ray determination of crystal structure. The symmetry of crystals, microscopic and macroscopic. Anisotropic physical properties of crystals. Crystal chemistry. *Fall*. Staff.
- 169 INTRODUCTORY SOLID STATE PHYSICS (3). Prerequisite, Physics 160 or equivalent. Crystal symmetry, types of crystalline solids; electron and mechanical waves in crystals, electrical and magnetic properties of solids, semiconductors; low temperature phenomena; imperfections in nearly perfect crystals. *Spring*. Staff.
- 181 ADVANCED LABORATORY (3 each). Prerequisites, Physics 103, 108,
- 182 or by permission. *Six laboratory hours a week, fall and spring*. Staff.
- 191 MATHEMATICAL METHODS OF THEORETICAL PHYSICS I (3). Prerequisites, Physics 26, 27, 28, or equivalent; Mathematics 124 (Mathematics 121 desirable but may be taken concurrently). Calculus, including multiple integrals and partial differentiation. Ordinary differential equations, with emphasis on series solutions; special functions;

boundary-value problems and characteristic function representations. Vector analysis. *Fall*. Staff.

- 192 MATHEMATICAL METHODS OF THEORETICAL PHYSICS II (3). Prerequisite, Physics 191 or by permission. Matrices, determinants, and linear equations. Partial differential equations; Green's functions; integral equations. *Spring*. Staff.

DEPARTMENT OF PHYSIOLOGY

A. T. MILLER, JR., *Acting Chairman*

- 90 PHYSIOLOGY (6). Prerequisite, permission of the Chairman of the Department. Required of all physical therapy students. *Spring*. Staff.
- 91 PHYSIOLOGY (4-5). Prerequisites, Chemistry 11-21, Zoology 41. A general course in mammalian physiology with emphasis on the various organ systems and their interrelationships. Available to nursing students at 5 semester hours and other students at 4 semester hours. *Three to four lecture and two laboratory-conference hours a week, fall*. Ennis; staff.
- 107 INTRODUCTION TO NEUROBIOLOGY (Biochemistry 107) (Neurobiology 107) (Pathology 107) (Pharmacology 107) (3). Prerequisites, one course in the biological sciences and permission of the Director of the Neurobiology Program. This is an interdisciplinary course on modern concepts of neurobiology. Topics will include: organization of the nervous system, neurochemistry, neurophysiology, neuropharmacology, neurogenetics, and computers. *Three lecture hours a week, fall*, alternate years. Glasser; Neurobiology Program staff.
- 140a CELL AND ORGAN SYSTEM PHYSIOLOGY (3). Prerequisite, permission of the Chairman of the Department. *Fall*. Staff.
- 140b CELL AND ORGAN SYSTEM PHYSIOLOGY (3). Prerequisite, Physiology 140a. *Spring*. Staff.

DEPARTMENT OF POLITICAL SCIENCE

JOHN D. MARTZ, *Chairman*

Political Science is concerned with the description and explanation of political institutions and behavior, the rights and responsibilities of citizens, and the relations of people with their governments. The curriculum provides the student with a broad knowledge of both domestic and foreign political institutions, processes and problems. The undergraduate major is designed to make feasible the attainment of several objectives: (1) a broad understanding of political institutions and issues as the central element of a general education; (2) a basic knowledge of governmental techniques for those considering a career in public service; (3) pre-professional training for students planning to enter a law school; and (4) a basic foundation in Political Science for those contemplating specialization at the graduate level.

To graduate with a major in political science, a student must

pass a total of *eight* political science courses *plus* the introductory economics (Econ. 32 or 61) and sociology (Soc. 51 or 151) courses. *One* of the eight political science courses may be taken in the General College while the remaining *seven* will be counted in the upper college. A grade of "C" or better is required in *seven* of the eight courses. A student who receives a "D" in *more than one departmental course* will not receive credit for that course towards satisfying the requirements of the major.

The eight political science courses are divided into an equal number of requirements and electives. Each student will begin his major by taking the introductory course in American government (Political Science 41), international relations (Political Science 86), one lower level course in foreign governments (Political Science 52, 54, 55, 56, 57, 59, 60), and one course in political theory. The remaining four courses are left wholly to the discretion of the student and can be taken from any of the department's undergraduate offerings. However, no student will be permitted to take advanced courses in any of the four fields *until he has passed the required course in that field*.

During his junior and senior years the political science major will normally take a total of *twenty* courses. As already indicated *seven* of those will fall in the political science area, *five to eight* will be in subjects allied to political science and *five to eight* must come from those disciplines considered non-divisional to political science.

The distribution requirements in upper college are designed to enable the student to acquire a competent knowledge of political science and broad training in the liberal arts. Flexibility in the number of allied and nondivisional requirements will permit the undergraduate to adjust his program to his individual needs and preferences.

"A" Sections, Special Topic Seminars, and Independent Project Courses

The rapid growth of the student population in recent years has inevitably forced the educational process to occur in increasingly larger classes. In light of this development, the department has tried to preserve some opportunity for instruction in small seminars and individual conferences. To meet this objective, departmental offerings include a number of "A" sections of introductory and lower level courses, specialized seminars in the upper college, and an independent projects course.

Enrollment in "A" sections and seminars is intentionally limited so as to facilitate intellectual exchange and faculty-student interaction. These courses are open to any undergraduate major who has satisfied whatever prerequisites an individual

instructor may establish for the "A" section or seminar he is teaching. The student should consult with the individual instructor or the departmental undergraduate adviser to learn what, if any, prerequisites have been set.

Some students may wish to design an independent project or pursue certain academic interests which are not covered in the regular course offerings. To receive credit for such an undertaking the student must submit, *prior to registration*, a detailed prospectus of his project to the *Director of Undergraduate Studies*. Once it has been approved, the student will enroll in *Political Science 99* and receive three credits for his work.

Training for Public Service

For students seeking professional training for careers in the public service, the Department, with the cooperation of the Institute of Government, offers a program leading to the Master of Public Administration degree. This program is designed for graduate students interested in positions in urban management, public personnel administration, and other generalist or specialized posts in the public service. This degree can be completed in two academic years and includes basic required courses, an area of specialization, a thesis, and an extensive internship for a minimum of eight months in a public agency in the student's area of specialization. Students from varying undergraduate backgrounds are eligible for admission to this program provided they have had at least nine semester hours of work in political science.

The undergraduate major in political science provides a sound foundation for such professional training programs in public administration. Through the major in political science a student will also build the necessary foundation for entry into the public service and for effective performance on various civil service entrance examinations, even without the benefit of professional graduate education. For students planning to enter the public service, regardless of undergraduate major, the following courses are recommended consistent with other college requirements; Political Science 41, Economics 31-32 (or 61), Psychology 26, Political Science 101, History 72 or 114, Economics 70 and 74, and English 30.

The Honors Program

Students with an overall average of *B* or better in their political science, economics, and sociology courses may wish to consider participation in the Honors program. This program is *specifically* designed for individuals who seek a vigorous research

experience and who are seriously contemplating graduate study in political science. Students who successfully complete the program are awarded a degree with *honors* or *highest honors* in political science.

Those students enrolled in the honors program will begin by taking Political Science 91 in the Spring semester of the junior year which is primarily a methodology course to prepare the student for Political Science 92, taken in the fall semester of the senior year. This course is devoted to the final research and writing of an honors thesis.

Students interested in the honors program should consult the Director of Undergraduate Studies during the fall semester of their junior year.

- 41 INTRODUCTION TO GOVERNMENT IN THE UNITED STATES (3). An introductory course designed to explain the basic processes of the American political system. *Two lecture and one discussion meeting a week, fall and spring.* Wallace; staff.
- 51 STATE GOVERNMENT IN THE UNITED STATES (3). The organization and operations of state governments, including relationship with local governments. *Fall and spring.* Monroe; staff.
- 52 COMPARATIVE POLITICS: INTRODUCTION TO MAJOR FOREIGN GOVERNMENTS (3). An introductory course on comparative government and politics. *Fall and spring.* Robson, Schwartz, Obler.
- 53 THE FAR EAST IN WORLD POLITICS (3). A survey of the international relations of East Asia. Equal emphasis will be placed on the traditional system of foreign intercourse and contemporary political developments. (Not offered 1969-1970).
- 129 CONTEMPORARY JAPAN (3). Examines the Japanese political process in the period since World War II with emphasis on formulation of policy, and its application in both domestic and foreign affairs. *Fall.* White.
- 55 SOVIET GOVERNMENT (3). An explanation of the revolution of 1917 and a review of the subsequent power struggle and gradual development of the USSR. *Fall.* Schwartz.
- 56 INTRODUCTION TO GOVERNMENT AND POLITICS IN LATIN AMERICA (3). An examination of the principal patterns of the Latin American political process; attention is directed to governmental institutions and to political dynamics. *Fall and spring.* Martz, staff.
- 57 CONTEMPORARY CHINA—GOVERNMENT AND POLITICS (3). Examines the development of the political system of China with particular emphasis on its historical, social and cultural dimensions. *Fall.* Chi.
- 58 AN INTRODUCTION TO THE NATURE AND FUNCTION OF LAW (3). A non-technical course for students of the arts and sciences with a social science approach to the examination of the nature, sources and functions of law. *Fall.* G. B. Cleveland .
- 59 CONTEMPORARY AFRICA (3). Examines the development and operation of the political systems of contemporary Africa, emphasizing the

period since independence and giving primary attention to sub-Sahara Africa. *Fall*. Levine.

- 60 POLITICAL CHANGE AND MODERNIZATION (3). Interrelates changes in political, social, and economic variables over time. Selected trends are described in both pre-industrial and post-industrial political systems. *Fall and spring*. Searing, White.
- 63 INTRODUCTION TO POLITICAL THOUGHT—ANCIENT AND MEDIEVAL (3). Survey course designed to present historical, conceptual and methodological background for advanced courses in political thought covering the period between the 4th Century B.C. and the 16th Century. *Fall*. G. B. Cleveland.
- 64 INTRODUCTION TO POLITICAL THOUGHT—MODERN (3). Survey course designed to present a historical, conceptual and methodological background for advanced courses in political thought from the 16th Century to the present. *Spring*. G. B. Cleveland.
- 70 PUBLIC OPINION AND POLITICAL PARTICIPATION (3). A study of forces affecting public opinion and its expression in various political activities; the personal needs served by political participation and the effect of formal political institutions and social structure upon such participation. *Fall*. Lehnem.
- 71 INTRODUCTION TO PUBLIC POLICY ANALYSIS (3). A systematic analysis of the motives for governmental actions and investigation of the problems of policy formation, measurement and prediction of outcomes. *Fall*. Richard Richardson, Thomas Ribich.
- 75 POLITICAL PARTIES AND ELECTIONS (3). The electoral process and the role of parties in the staffing and operation of government, with emphasis on the United States. *Fall and spring*. Kovenock.
- 80 THE PRESIDENT, CONGRESS AND PUBLIC POLICY (3). An analysis of the roles of President and Congress in making national policy. *Fall and spring*. Matthews. Staff.
- 86 INTERNATIONAL RELATIONS AND WORLD POLITICS (3). The analysis of politics among nations. *Fall and spring*. Headley, Scott, Jones, Chi.
- 87 INTERNATIONAL RELATIONS OF THE LATIN AMERICAN REPUBLICS (3). Historical survey of diplomatic relations of the Latin American republics with the rest of the world with special emphasis upon relations with the United States. *Fall and spring*. Gil.
- 88 THE UNITED NATIONS (3). A survey of the background, organization, and procedures of the United Nations organization. Lectures, readings. *Fall and spring*. Headley, Frazer.
- 90 CONTEMPORARY PROBLEMS OF POLITICAL SCIENCE (3). Open to Political Science majors. Registration must be preceded by a conference with the instructor. Both semesters. *Fall and spring*. Staff.
- 91 HONORS COURSE (6). Required of all students reading for honors in
- 92 Political Science. Staff.
- 95 UNDERGRADUATE SEMINAR (3). A detailed examination of selected topics in the field of Political Science and a critical analysis of pertinent

theories. Open to Political Science majors. Registration must be preceded by a conference with the instructor. *Fall and spring*. Staff.

- 99 INDEPENDENT STUDY IN POLITICAL SCIENCE. Directed readings and research in a selected field under the direction of a member of the Department. Open to Political Science majors. *Fall and spring*. Staff. semesters. Staff.
- 101 PUBLIC ADMINISTRATION (3). The administrative process in government, emphasizing principles and practice or organizations and management, leadership, program planning and policy making, and the nature of bureaucratic politics in the Executive branch. *Fall*. Wright.
- 105 PUBLIC PERSONNEL ADMINISTRATION (3). Trends in the operation of personnel functions in municipal, state and federal governments, including position classification, recruitment, selection, training, supervision, and employee relations, with emphasis on unresolved problems of the career service. *Fall*. Hayman.
- 121 THE GOVERNMENT OF GREAT BRITAIN (3). The development and operation of British government in its local and national aspects and an examination of current developments in social and economic policy. *Spring*. Robson.
- 122 THE GOVERNMENT AND POLITICS OF FRANCE AND ITALY (3). A comparative analysis of government and politics in contemporary France and Italy. *Fall*. Robson, Obler.
- 123 COMMUNIST POLITICAL SYSTEMS (3). This course considers similarities and differences among major communist countries. *Spring*. Schwartz.
- 124 COMMUNISM IN ASIA (3). This course deals primarily with Russian-Chinese relations but also analyzes the USSR in Asia and the borderlands of Sinkiang and Mongolia. (Not offered 1969-1970). *Fall*.
- 125 GOVERNMENT AND POLITICS IN GERMANY (3). The methods of comparative politics are applied in a study of the Federal and Democratic Republics and Berlin. *Fall*. Robson.
- 126 THE HISPANIC EMPIRES IN AMERICA (3). A study of the political and social institutions in the Spanish and Portuguese colonial systems and their development. (Not offered in 1969-1970.) *Spring*. Gil.
- 127 GOVERNMENT OF LATIN AMERICAN STATES (3). Prerequisites, Political Science 56 or permission of instructor. The forms of organization, the functions, and the operations of government in Latin America with emphasis on present conditions, tendencies, and peculiar types of institutions. *Fall*. Gil.
- 129 GOVERNMENT AND POLITICS OF EAST ASIA (3). The indigenous political ideas and institutions of East Asia and Western influence on Asian government and politics with emphasis upon the political evolution and status of Japan and China. *Spring*. White.
- 130 GOVERNMENT AND POLITICS OF SUB-SAHARA AFRICA (3). The process of political modernization in Sub-Sahara Africa, analyzing current political change in selected areas, emphasizing the interrelationship of economic development, cultural change, and political modernization. *Fall*. Levine.

- 132 MUNICIPAL GOVERNMENT IN THE UNITED STATES (3). City and town governments; origin, history, forms, functions, and relations to national, state, and county governments. (Not offered in 1969-1970.) *Fall*.
- 133 MUNICIPAL ADMINISTRATION IN THE UNITED STATES (3). Administrative organization, procedure, and problems of cities and towns. *Spring*. Hayman.
- 135 STATE POLITICS AND PUBLIC POLICY (3). The comparison of development and implementation of public policy in the states. Special emphasis is placed on the impact of the political process and inter-governmental relations. *Fall*. Beyle.
- 138 THE STATES IN THE FEDERAL UNION (3). A study of the role of the states in our federal system, as illustrated in such fields as health, welfare, education, highways, and law enforcement. *Spring*. Monroe.
- 140 ASIA AND WORLD AFFAIRS (3). The international relations of East and Southeast Asia with emphasis on analysis of the contemporary politics of Asian countries in relation to each other, the United States, and other world powers. *Fall*. Chi. (Not offered 1970-1971).
- 141 INTRODUCTION TO INTERNATIONAL LAW (3). A study of the historical development, the principles, the basic rules and the institutions of the laws of nations. *Lectures, case studies and readings*. (Not offered 1969-1970). *Fall*. Frazer.
- 142 INTERNATIONAL ORGANIZATION FOR PEACE (3). A systematic analysis of development, organization and functions of institutions for international peace, and their relevance to the resolution of conflict. *Lectures, readings and reports*. *Spring*. Frazer.
- 143 CONTEMPORARY PROBLEMS OF SOVIET FOREIGN POLICY (3). General propositions about contemporary foreign relations of the USSR will be examined through analysis of selected "case studies." (Not offered 1969-1970). *Spring*.
- 144 THE ORGANIZATION AND CONDUCT OF THE FOREIGN RELATIONS OF THE UNITED STATES (3). Principal consideration is given to the organization of the government of the United States for the conduct of its foreign relations, e.g., the Department of State, the Foreign Service, etc. *Spring*. Scott.
- 145 CONTEMPORARY INTERNATIONAL RELATIONS OF THE UNITED STATES (3). The analysis of Foreign Policy and the factors shaping it at home and abroad. *Fall*. Jones.
- 146 INTERNATIONAL COMMUNICATIONS AND COMPARATIVE JOURNALISM (Journalism 146) (3). Prerequisite, six semester hours of upperdivision courses in international relations or recent European history. *Fall*. Adams.
- 147 CONTEMPORARY INTER-AMERICAN RELATIONS (3). The evolution of the inter-American security system, recent Pan-American conferences and the activities and problems of the various continental agencies. *Fall*. Martz.
- 148 THE MIDDLE EAST IN WORLD POLITICS (3). A study of the contemporary international relations of the Middle East, including analysis of internal forces such as nationalism, regionalism, and the policy of the Great Powers. *Spring*. Jones.

- 149 DEFENSE POLICY AND NATIONAL SECURITY (3). A study of national defense policy as affected by the constitutional and political setting, as well as its relation to foreign policy. Some attention to strategic doctrine. *Fall*. Dawson.
- 150 COMPARATIVE CIVIL-MILITARY POLICIES (3). Analysis of military institutions and organizations as related to the political system; forms and patterns of civil-military politics within democratic and totalitarian systems, and in the developing nations. (Not offered in 1969-1970). *Spring*. Dawson.
- 153 CONSTITUTIONAL POLITICS AND THE JUDICIAL PROCESS (3). Analysis of the structure and functions of judicial systems emphasizing the organization, administration, and politics of judicial bureaucracies and roles of judges, juries, counsel, litigants, and interest groups in adjudication processes. *Fall*. Richardson.
- 154 DEVELOPMENT OF THE ENGLISH CONSTITUTION (History 142) (3). Emphasis upon the major constitutional documents and the development of the national political institutions, with considerable attention to the leading constitutional cases and principles of law. *Fall*. Godfrey.
- 155 THE CONSTITUTION OF THE UNITED STATES (History 175) (3). A study of the fundamental principles of constitutional interpretation and practice in the United States by means of lectures, textbooks, and cases. *Fall and spring*. Wallace, Monroe.
- 156 URBAN POLITICAL SYSTEMS (3). Characteristics, political processes, and actor behavior in urban political systems. *Fall*. Daland.
- 157 CIVIL LIBERTIES IN THE UNITED STATES (3). An analysis of the complex political problems created by the expansion of protections for individual liberties in the United States. Emphasis will be on contemporary problems with some supplemental historical background. *Spring*. Wallace.
- 159 THE BRITISH COMMONWEALTH OF NATIONS (History 159) (3). From the old colonial system to the constitutional development of the Commonwealth; special attention to Canada and to the important documents of Commonwealth growth, including the most recent ones. *Spring*. Baxter.
- 161 SOCIAL AND POLITICAL PHILOSOPHY (Philosophy 105) (3). An examination of the logic of social and political thought with an analysis of such concepts as society, state, power, authority, freedom, social and political obligation, law, rights. *Spring*. Falk.
- 162 AMERICAN POLITICAL THOUGHT (3). An analysis of the ideas underlying government and politics in the United States. *Spring*. Robson.
- 163 MARXISM AND SOCIALISM (3). A consideration of the political thought of major Marxist and socialist schools, including Marx and Engels themselves, Lenin, contemporary Western Marxism, Utopian socialism, Revisionism, Fabianism, and contemporary socialist concerns. *Fall*. Lipsitz.
- 164 ELITE BEHAVIOR AND POLITICAL ORGANIZATION (3). Individual and elite leadership behavior in the context of the elite-mass relationships. Includes cross national analysis of the structure of rule in industrial societies. *Spring*. Searing.

- 165 PROBLEMS OF MODERN DEMOCRATIC THEORY (3). Major problem areas in democratic theory including definitions, presuppositions, and justifications of democracy, liberty, equality, minority rights, public interest, participation, dissent and civil disobedience. (Not offered in 1969-1970).
- 166 RECENT AND CONTEMPORARY POLITICAL THOUGHT (3). Prerequisite, Political Science 63, 64 or equivalent. Political theory since Marx with emphasis upon the contributions from other social sciences, the theoretical implications of recent methodological developments and related normative theory. *Spring*. G. B. Cleveland.
- 167 POLITICAL THOUGHT AND IDEOLOGY IN CONTEMPORARY LATIN AMERICA (3). Prerequisite, Political Science 56 or 127 or permission of instructor. Surveys 19th and 20th century political thought, with major focus placed on contemporary ideologies and movements. *Spring*. Martz.
- 171 RACE, POVERTY AND POLITICS (3). Analysis of causes and consequences of economic and racial inequality. A focus on the relationship between political power and conflicts over public policy. *Spring*. Schwartz.
- 172 EXECUTIVE POLITICS (3). An examination of political roles and behavior of chief executives and their advisory networks, with emphasis on the American presidency. *Spring*. Cronin. (Not offered in 1969-70).
- 177 PSYCHOLOGICAL FACTORS IN POLITICAL BEHAVIOR (3). A comprehensive introduction to the uses of three areas of psychological investigation (personality and psychodynamics, learning and complex processes, and social psychology) in the theories of political behavior. *Fall*. Lind.
- 181 RECENT NATIONAL POLICY AND ADMINISTRATION (3). The politics of formulating and administering national policies concerned with government and the economy, including such fields as business regulation, agriculture, labor and monetary and fiscal policy. *Spring*. F. N. Cleaveland.
- 182 ISSUES OF NATIONAL POLICY (3). An examination of the politics, development and administration of recent national public policies, with emphasis on welfare, education, housing, poverty, urban renewal, and federal metropolitan programs. *Spring*. Beyle.
- 191 PUBLIC FINANCE (Economics 141) (3). Additional prerequisite, Economics 31-32 or equivalent. *Fall and spring*. Spruill.
- 193 PROBLEMS IN STATE AND LOCAL FINANCE (Economics 143) (3). Additional prerequisite, Economics 141 or equivalent. *Spring*. Spruill.
- 194A SOCIAL STATISTICS (Sociology 191A) (3). Primarily for graduate students. Undergraduates must have permission of Chairman of Department to enroll. (See Sociology 191A for description.) *Fall and spring*. Lehen.
- 195 INTERMEDIATE SOCIAL STATISTICS (Sociology 195) (3). Prerequisite, Sociology 191 or equivalent. (See Sociology 195 for description.) *Spring*. Blalock.
- 197 GOVERNMENT AND BUSINESS (Economics 197) (3). Additional prerequisite, Economics 31-32 or equivalent. *Spring*. Carter.

PORTUGUESE
(See Romance Languages)

DEPARTMENT OF PSYCHOLOGY

EUGENE ROBERT LONG, *Chairman*

The emphasis in undergraduate study of psychology is not on specialization within the field. The program for majors includes three required courses, but beyond them allows latitude for the varying directions of interest that the student may express. There are some courses which are particularly recommended to the major if he anticipates pursuing graduate training in psychology. Students intending to major in psychology are advised to include courses in biology, physics, mathematics, sociology and anthropology in their studies.

The courses in the Department available to the undergraduate student are listed below in several groups. Each major is required to take a three-course sequence in Group A and at least five other courses in the Department. Students are encouraged to take Psychology 26 in the second semester of the freshman year or in the first semester of the sophomore year. Students may not register or receive credit for both Psychology 20 and Psychology 26. It is advisable to take Group A courses as early as possible in the major program. Psychology 27 need not be taken prior to Psychology 28. In addition, the major student must select at least one course from each groups B, C, and D. The remaining courses needed to complete his major may be selected from any of the other courses in groups B, C, D, and E. Group A: Psychology 26, 27, and 28; Group B: Psychology 100, 101, 102, 104, 106, 107, 120, 121, 122, 123, 125, 171; Group C: Psychology 126, 133, 140, 142, 143, 144, 146, 147, 188; Group D: Psychology 103, 30, 130A, 131, 132, 139, 148; Group E: Psychology 90, 99A, 99B, 112, 131, 135, 136, 137, 138, 151, 165, 180, or other departmental offerings such as honors and original problems. It is also strongly recommended that any student intending to pursue graduate studies in psychology include Psychology 30 in his major program. Details of the student's program are planned with his adviser.

Majors in psychology with an over-all average of *B* or better are eligible for enrollment in the honors program. Application should be made through his departmental adviser before registration for the first semester of the major's senior year. In this program, student of superior ability and industry will have an opportunity to carry out independent work in an area of his choice under the guidance of some departmental staff member.

Interested and qualified students should make inquiry of their departmental advisers.

For graduate students the emphasis is not on specific courses as such but rather on different areas of competence, in which progress is assessed by examinations. In consultation with his adviser, the student plans a program of study and research adapted to his needs and interests.

Practicum experience in advanced psychometric techniques is available to qualified students in connection with research projects of the Psychometric Laboratory.

Personnel and material facilities for graduate level professional training in clinical psychology are available both on and off the campus. Practicum experience in diagnostic and therapeutic procedures is available to qualified students through the North Carolina Memorial Hospital. The Department participates in the clinical training programs sponsored by the Veterans Administration and the United States Public Health Service.

The student is referred also to courses in educational psychology, statistics, neurology, physiology, sociology, and anthropology listed by other departments of the University.

Some courses will be given in alternate years or irregularly as demand warrants.

The advised prerequisites for each course are provided for the general guidance of the student in consultation with his adviser. In some cases, they may believe that the student needs a particular course and could succeed in it without having had the specified prerequisites. If so, the student should consult with the instructor of the course, who may waive a prerequisite.

26 GENERAL PSYCHOLOGY (3). No prerequisite. Open to both freshmen and sophomores. An overview of the facts and theories of conditioning, development, measurement, personality, and social factors in behaviorial science. Students typically participate in ongoing psychological research and may be required to take one or more psychological tests. *Three lecture hours a week, fall and spring.* Staff.

27 INTRODUCTION TO EXPERIMENTAL PSYCHOLOGY (3). Prerequisite, Psychology 26 or an equivalent course in general psychology. Open to both freshmen and sophomores. Areas include sensory processes, perception, emotion, conditioning and learning. Collection and quantitative treatment of behaviorial data. *Three lecture hours a week, fall and spring.* Long, Waller.

28 INTRODUCTION TO PERSONALITY (3). Prerequisite, Psychology 26 or an equivalent course in general psychology. Open to both freshmen and sophomores. A study of the normal human individual as an organic whole. Heredity and environmental sources of individual differences in personality dynamics. *Three lecture hours a week, fall and spring.* Staff.

NOTE: Psychology 28 will not meet the General College science requirement.

- 30 ELEMENTARY PSYCHOLOGICAL STATISTICS (3). Prerequisite Psychology 26. (For students who have not taken Math 31, 32). Principles and methods of descriptive statistics and introduction to statistical inference, with applications to psychological problems. *Two lecture and two laboratory hours a week, fall and spring.* Staff.
- 90 SENIOR SEMINAR IN PSYCHOLOGY (3). Prerequisite, faculty recommendation. Limited to senior majors in psychology. A comprehensive survey of current theoretical, methodological, and professional problems in psychology. *Four seminar hours a week, spring.* Several staff members present for each session.
- 99ab HONORS IN PSYCHOLOGY (3). Prerequisite, enrollment in the honors program. Reading and research problems. (See description above.) To be taken twice by each honors student and may be counted towards the major at the student's option. *99a, fall; 99b, spring.* Staff.
- NOTE: Psychology 26 or the equivalent is prerequisite to all courses numbered above 100.
- 100 THINKING AND COGNITION (3). Prerequisite, Psychology 27 or permission of the instructor. Considers problems in concept formation, problem-solving, and thinking. Emphasis will be on an examination of the experimental literature with attention to recent developments in information processing models and computer simulation. *Two lecture and two laboratory hours a week, fall.* Johnson.
- 101 CONDITIONING AND LEARNING (Neurobiology 101) (4). Prerequisite, Psychology 27 or permission of instructor. A comprehensive survey of the methods and findings of classical and operant conditioning. Students perform standard and original experiments in the laboratory. *Two lecture and four laboratory hours a week, fall and spring.* Clark, Eckerman, LoLordo, Waller.
- 102 BIOLOGICAL FOUNDATIONS OF BEHAVIOR (Neurobiology 102) (3). Prerequisite, Psychology 27 or permission of the instructor. Ethological, genetic, and physiological variables will be studied in relation to their behavioral effects. *Two lecture and three laboratory hours a week, spring.* Waller.
- 103 INTRODUCTION TO MATHEMATICAL PSYCHOLOGY (3). Prerequisites, Psychology 26 and 27, Mathematics 1 and 2 or 15 and 31. The use of mathematical models in Psychology with emphasis on learning and choice behavior. *Fall.* Young.
- 104 ADVANCED GENERAL PSYCHOLOGY (3). Prerequisite, permission of the instructor. A survey of refresher course offering a critical and detailed study of some of the major modern experimental findings and methods in contemporary experimental psychology. *Fall.* Waller.
- 106 PHYSIOLOGICAL PSYCHOLOGY (3). Prerequisites, Psychology 27, or special permission of the instructor. End organ, neurological, and muscle action patterns and their role in behavior. Related findings on endocrine, hormonal, and metabolic process. *Two lecture and two laboratory hours a week, fall.* King.
- 107 INTRODUCTION TO NEUROBIOLOGY (Neurobiology 107) (3). Prerequisites, one course in Biological Science and permission of Director of Neurobiology Program. An integrative view of modern concepts pertinent to behavior and mental disease. Topics to be discussed are: neurochemistry; neuropharmacology; neurophysiology; neurogenetics; etc. *Fall as announced.* King, Shinkman.

- 112 HISTORICAL TRENDS IN PSYCHOLOGY (3). Prerequisites, Psychology 27 or 28 or permission of the instructor. Limited to senior majors or to graduate students in psychology; others by permission of the instructor. Overview of the origins of psychological concepts, movements, and fields of study. *Fall and spring as announced.* McCurdy.
- 121 SENSATION AND PERCEPTION (3). Prerequisites, Psychology 26, 27 or permission of the instructor. The perception of shape, space, motion; complex psychophysics, and the role of past experience, set and motivational factors in perception. *Fall.* Long.
- 122 HUMAN LEARNING (3). Prerequisites, Psychology 26, 27. Motivation, conditioning, learning, and language. Relation of findings to educational procedures. *Two lecture and three laboratory hours a week, spring.* Long.
- 123 BEHAVIORAL PHARMACOLOGY (3). Prerequisites, Psychology 101 and Psychology 106 or equivalent. Behavioral and psychological effects of drugs. All major drug groups will be considered. Depressant, stimulant, tranquilizing, energizing, and other drug effects will be produced and analyzed in the laboratory with animals. *Spring.* Clark, Fiddleman, and Waller.
- 125 PSYCHOLOGY OF LANGUAGE (3). Prerequisites, Psychology 26 and 27, or permission of instructor. After an examination of the possible relations between psychology and linguistics, this course will consider problems in the acquisition of language and particularly recent work in experimental psycholinguistics. *Fall.* Fillenbaum.
- 126 CHILD DEVELOPMENT (3). Prerequisites, Psychology 26 and 28 (40). Development of the normal child, with particular attention to social relations. Biological and cultural factors are considered. *Fall and spring.* Staff.
- 131 INTERMEDIATE PSYCHOLOGICAL STATISTICS (3). Prerequisites, Psychology 26, 27, 130. Elements of probability theory, principles of statistical inference, including applications of binominal, normal, t , X^2 , and F distributions. *Fall.* Staff.
- 132 ADVANCED PSYCHOLOGICAL STATISTICS (3). Prerequisite, Psychology 131, or equivalent. Statistical estimation, hypothesis testing, use of quantitative models in design and analysis of experiments. *Two lecture and two laboratory hours a week, spring.* Jones, Gramer, Appelbaum.
- 133 INTRODUCTION TO SOCIAL PSYCHOLOGY (3). Prerequisites, Psychology 26, 28 (40); Psychology 28 highly desirable. Permission of the instructor in special cases. Examination of social systems from various points of view, stressing interpersonal relations and representing methods of observation, experiment, and analysis. *Fall and spring.* Thibaut, Schopler, Insko, Stroebe, Thompson.
- 134 COLLECTIVE BEHAVIOR (Sociology 134) (3). Prerequisite, Sociology 51. A study of the elementary forms of social organization. Forces external to the person that operate in social movements, crowds, revolution, fashion, and similar phenomena are emphasized. Special attention paid to the analysis of social movements. *Fall and spring.*
- 135 INDIVIDUAL CHOICE BEHAVIOR (3). Permission of instructor. Algebraic and stochastic models for individual decision making with

applications to behavioral science. (1970 and alternate years). *Fall*. Rapoport.

- 136 MEASUREMENT AND DATA ANALYSIS (3). Prerequisite, Psychology 130 or equivalent. Principles of psychological scaling, emphasizing constraints on prediction of measurement models employed; introduction to multidimensional scaling. *Three lecture hours a week, spring*. Jones.
- 137 GROUP CHOICE BEHAVIOR (3). Permission of instructor. Mathematical models for two and N-person zero and non-zero sum games with applications to the behavioral sciences. (1971 and alternate years). *Fall*. Rapoport.
- 138 APPLIED MATRIX ALGEBRA FOR THE BEHAVIORAL SCIENCES (3). Prerequisite, two courses in statistics. Covers elements of matrix algebra with applications particularly in statistics. Use of matrix subroutines on digital computers. *Three lecture hours a week, fall*. Cramer.
- 139 APPLIED MULTIVARIATE ANALYSIS (3). Prerequisite, Psychology 131, 132, or permission of instructor. Sampling from the multivariate normal distribution, testing of multivariate hypotheses, factor analytic models, and general multivariate correlational models as applied to behavioral research. (1970 and alternate years) *Fall*. Appelbaum and Cramer.
- 140 PERSONALITY (3). Prerequisites, Psychology 26, 28. Development and modern application of the concept of personality as a more or less self-determining system of beliefs, values, and behavioral tendencies. *Fall and spring*. Welsh, Galinsky.
- 142 PERSONALITY OF THE BLACK AMERICAN (3). Prerequisites, Psychology 26, 28, and/or permission of instructor. This course will focus upon the personal characteristics of black Americans as these have been identified and studied by psychologists and other behavioral scientists. Various methodological approaches will be considered. *Spring*. Baughman.
- 143 LABORATORY IN THE ANALYSIS OF INTERPERSONAL BEHAVIOR (3). Prerequisites, Psychology 26 and permission of the instructor. The study of interpersonal relationships and group processes in an unstructured discussion course. Written assignments stress the integration of group experience and relevant theory and research. The data generated by the group itself are analyzed in detail. *Spring*. Gibbard.
- 144 CREATIVE THINKING (3). Prerequisites, Psychology 26 and permission of instructor. An innovative course in the experimental fostering of creative thought, including group and individual exercises drawn from a variety of theoretical frameworks. *Fall*. Welsh.
- 146 BEHAVIOR DISORDERS (3). Prerequisites, Psychology 26, 28 (40). Major forms of behavioral pathology of children and adults, with an emphasis on understanding, treatment, and prevention of these personality disorders. *Fall and spring*. Dahlstrom, Burchard, Krugman, Galinsky.
- 147 PSYCHOPATHOLOGY IN THE MENTAL HOSPITAL (3). Prerequisites, Psychology 146 and permission of the instructor. In addition to classroom participation, the student will work with patients in a local

State Hospital. The course orientation aims towards an understanding of behavior disorders through patient contact. *Fall and spring*. Fiddleman.

- 148 TESTS AND MEASUREMENTS (3). Prerequisites, Psychology 26, 27; 130 also desirable. Survey of principal types of psychological measuring instruments. *Spring*. Welsh.
- 151 ORIGINAL PROBLEMS (3). Prerequisites, Psychology 26, 27, 28 (40), and permission of the instructor. *Six laboratory hours a week, fall and spring*. Staff.
- 165 COMMUNICATION AND OPINION (Journalism 165) (Sociology 165) (3). Prerequisites, any two of the following: Psychology 26, Political Science 41, Sociology 51. Theories of communication; persuasion and opinion formulation; propaganda and pressure groups; the mass media and public opinion; voting behavior. *Fall and spring*. Adams, Danielson.
- 171 MODERN BEHAVIOR THEORY (3). Prerequisites, Psychology 26, and 27, or permission of the instructor. A critical survey of recent theoretical developments in learning and behavior theory. *Spring*.
- 180 INTRODUCTION TO THE STUDY OF EXCEPTIONAL CHILDREN (Education 180) (3). *Fall and spring*. Harshman.
- 188 SMALL GROUPS (3). Prerequisite, Psychology (Sociology) 123 or permission of the instructor. Intensive survey of research on behavior in small groups combined with appropriate experience in studying various structured groups. *Fall*. Schopler.

SCHOOL OF PUBLIC HEALTH

WILLIAM FRED MAYES, *Dean*

Students other than those in schools of the Division of Health Affairs must obtain permission from their deans before registering for any course in public health.

For further information regarding these requirements and the curriculum see the catalogue of the School of Public Health.

DEPARTMENT OF RADIO, TELEVISION, AND MOTION PICTURES

WESLEY H. WALLACE, *Chairman*

The curriculum falls into five divisions: criticism; institutional, which includes historical, economic, social, and legal aspects of the media; production, which includes speech, performance, and directing; research; and writing. The undergraduate major will take the basic course in the production and writing areas. These courses are radio, television, and motion pictures (R-TV-MP) 60, and either 78 or 81. R-TV-MP 58 is a sophomore prerequisite to upper college work for all R-TV-MP majors; not counted as part of the major. In addition, the stu-

dent may elect four to six courses above the sophomore level from the remainder of the curriculum.

Consistent with University requirements, the student will take five to eight courses in departments allied with radio, television, and motion pictures (departments in the Division of Fine Arts and the Division of Humanities), and five to eight courses in other divisions of the College of Arts and Sciences. A departmental adviser will assist in guiding each student to a broad, liberal education through conferences and the periodic study of each student's class and extracurricular activities related to the Department's functions. These extracurricular activities are voluntary, but are faculty directed and are an important part of the teaching program. They include work in the radio and television stations of the University, and special projects in all three media.

- 42 MOVIE CRITICISM (English 42) (3). Prerequisite, English 21. An introductory course in the appreciation and criticism of cinematic art. Fifteen classic films from five genres will be studied, one film to be presented each week in conjunction with a lecture and a discussion period. Although the text is ultimately the movie itself, movie scripts will be employed frequently for purposes of examination and discussion. *Fall and spring.* Hardy, Nickell, King.
- 45 CRITICAL ANALYSIS OF RADIO, TELEVISION, AND MOTION PICTURES (3). Sophomore elective, open to juniors and seniors majoring in other departments. Students majoring in R-TV-MP may not take this course after they become juniors. Works of artistic merit are studied in terms of the intentions and attainments of the artists involved in their preparation. Through texts, scripts, radio recordings, and television and motion picture films, the student becomes acquainted with the contributions made by the writer, director, performers and other artists working in a production, and becomes acquainted with their relationships. *Fall and spring.* Hardy, Gwyn, Nickell.
- 58 DEVELOPMENT OF BROADCASTING, PART I (3). Sophomore elective, open to juniors and seniors. A sophomore prerequisite to upper college work for all R-TV-MP majors; not counted as part of the major. A survey of the evolution of broadcasting, its role in society, and its relation to the public interest. *Fall and spring.* Wallace.
- 78 WRITING FOR RADIO, TELEVISION, AND MOTION PICTURES, PART I (3). Either 78 or 81 is required of all R-TV-MP majors. Permission of the department is required. A basic course dealing chiefly with drama. *Fall and spring.* Hardy, Hashim.
- 98 SPECIAL TOPICS (3). A small class discussion-seminar for undergraduates, designed to explore a special topic of interest to the instructor and the students. *Fall and spring.* Wallace; Staff.
- 99 HONORS (3). Reading and preparation of an essay for honors or preparation of a creative work for Honors in Writing under a departmental adviser. A two-semester course with credit awarded at end of second semester. *Fall and spring.* Wallace; staff.

- 141 CONCEPTS OF PUBLIC BROADCASTING (3). Provide students with an understanding of the rationales, modes, and processes of public broadcasting; permit students to examine the underlying assumptions of public broadcasting and to contrast these with assumptions of commercial broadcasting. *Spring*. Bair.
- 146 INTERNATIONAL COMMUNICATION AND COMPARATIVE JOURNALISM (Journalism 146 and Political Science 146) (3). Development of international communications; the world's press systems; international communication and freedom of information; the foreign correspondent; international information programs. *Fall*. Bishop.
- 151 INTRODUCTION TO MASS COMMUNICATION RESEARCH (Journalism 151) (3). Fundamentals of communication research techniques (content analysis, historiography, survey research, experimental design) including an overview of computer science, statistics, theory development, and trends in published literature. *Fall and spring*. McCombs.
- 159 DEVELOPMENT OF BROADCASTING, PART II (3). Prerequisite, R-TV-MP 58. A study of audiences, station organization and operation, and economic, cultural, and political factors which influence broadcasting. Emphasis is placed upon factors affecting management and program policies and decision. *Fall*. Wallace, Elam.
- 171 IDEA, FORM, AND MEDIUM (3). An investigation of the relationship between the idea to be expressed, the form of the expression, and the medium chosen. Examples of this relationship will be studied in works chosen from four media: the stage, the motion picture, radio, and television, and will include examples from Greek, Tudor, and Modern Drama as well as selected examples of naturalism, expressionism, and related forms in radio, television, and motion pictures. *Spring*. Hashim.
- 179 WRITING FOR RADIO, TELEVISION, AND MOTION PICTURES, PART II (3) Prerequisite, R-TV-MP 78 and permission of the department. Three major projects will be completed by each student, either dramatic or non-fiction, and for any of the three media. *Spring*. Hashim.
- 190 SOCIAL ASPECTS OF MASS COMMUNICATION (3). Required of all graduate majors; undergraduates, by permission of the instructor. Media of mass communications are examined for their social and cultural roles in society—for their roles in reflecting, modifying, or creating attitudes, tastes, and opinions. While emphasis is upon the present, the course considers the historical development of the concept of mass communication and the rise of the mass media. *Spring*. Wallace.

Professional and Production Courses

Courses listed in this section are available in the College of Arts and Sciences only to those students majoring in radio, television, and motion pictures or in dramatic art. Students in other schools should consult their respective deans.

- 60 PRODUCTION FUNDAMENTALS (4). Permission of the department required. *Two lecture and four laboratory hours a week, fall and spring*. Wynn, Grills, Settle.
- 73 BROADCAST JOURNALISM (Journalism 73) (3). Prerequisites, R-TV-MP 60 and Journalism 53. Analysis of broadcast journalism; theory

and practice in communicating news in oral and visual modes. *Fall and spring*. Melson, Elam.

- 81 NONFICTION WRITING (3). Permission of the department required. Either 81 or 78 is required of all R-TV-MP majors. Theories and practices of writing nondramatic materials for radio, television, and motion pictures. *Fall and spring*. Hashim.
- 136 INTRODUCTION TO INSTRUCTIONAL MATERIALS PRODUCTION (Education 136) (3). Open, in the College of Arts and Sciences, only to majors in Radio, Television, and Motion Pictures. The planning and production of two and three dimensional instructional materials, television graphics, slides, overhead transparencies, manipulative tactile materials and audio recordings. *Fall and spring*. Wileman.
- 140 EDUCATIONAL TELEVISION PRODUCTION AND INSTRUCTION (3). To prepare the educational television participant, including the producer-director, the classroom and studio teacher, and the curriculum coordinator, for effective production of instructional materials. Current uses of television; content consideration; cooperative program planning; techniques of television teaching; classroom considerations; potentials of various instructional forms; evaluation methodology. *Two lecture and two laboratory hours a week, fall*. Gwyn.
- 175 RESEARCH PROJECTS IN THE MASS MEDIA (Journalism 175) (3). A proseminar for the study of research methods in the mass media and the completion of special research projects. *Spring*. Gwyn.
- 176 RADIO PRODUCTION ARTS (3). Prerequisite, R-TV-MP 60 and permission of the instructor. Analysis and application of the principles and methods of radio production and direction. Standard and experimental program forms will be studied. *Two lecture and two laboratory hours a week, fall*. Gwyn.
- 177 TELEVISION PRODUCTION ARTS (3). Prerequisite, R-TV-MP 60 and permission of the instructor. An intermediate course in television production covering basic techniques of producing educational and commercial live television: lecture, demonstration, news, interview, panel, and drama. A study of techniques and critical standards. *Two lecture and two laboratory hours a week, fall and spring*. Nickell.
- 182 MOTION PICTURE AND TELEVISION PERFORMANCE (3). Prerequisite, R-TV-MP 60 and permission of the instructor. Theory and practice in speaking and acting. *Two lecture and two laboratory hours a week, fall and spring*. Wynn.
- 187 MOTION PICTURE PRODUCTION ARTS (3). Prerequisite, R-TV-MP 60 and permission of the instructor. The theory and techniques of film form are studied in lecture, demonstration, and student exercises. *Two lecture and two laboratory hours a week, spring*. Wynn, Scroggs.

Participation Courses

The courses listed in this section provide $\frac{1}{2}$ semester hour credit for students who are interested in participating in the production of programs for radio and television and in producing motion pictures. No more than six semesters of courses (a maximum of 3 semester hours of credit) may be elected. In

each case, permission of the instructor is required. Students registering for 1R-6R will be assigned to work on WUNC (FM); those who elect 1T-6T will work in a special television production assignment; and those who are accepted in 1F-6F will function as members of a motion picture production crew. A student may not elect two participation courses in the same semester. The maximum of six semesters of production courses may include some from each medium.

1F, 2F, 3F, 4F, 5F, 6F FILM PROJECTS ($\frac{1}{2}$ each). Wynn, Scroggs.

1R, 2R, 3R, 4R, 5R, 6R RADIO PROJECTS ($\frac{1}{2}$ each). Gwyn, Settle.

1T, 2T, 3T, 4T, 5T, 6T TELEVISION PROJECTS ($\frac{1}{2}$ each.) Nickell, Grills.

CURRICULUM IN RECREATION ADMINISTRATION

The undergraduate major in Recreation Administration is designed to provide a wide range of educational experiences for those entering into any one of the several recreational specialties. Attention is focused upon the general arts and skills of recreation work which may be adapted to such fields of service as public recreation administration, therapeutic recreation, youth leadership, and recreation for older Americans.

UNDERGRADUATE MAJOR: Psychology 26, Sociology 51, and Sociology 52, preferably taken before the junior year, are required of all majors and are prerequisite to other courses except where otherwise indicated. Other General College electives should include Education 41, Political Science 41, Recreation Administration 73, and at least one course in Fine Arts. In addition to Psychology 26, two of the following natural sciences requirements in the General College are recommended: Botany 11, Geography 38, Geology 11, Astronomy 31, and Zoology 11.

The major consists of seven courses: Education 41 and 71, Recreation Administration 73, 174, and three of the following: Recreation Administration 175, 176, 177, and 178. The required fieldwork (Recreation Administration 174) is to be taken during the summer between the junior and senior years. Fieldwork consist of 240 hours in one or two supervised recreation agency settings.

The twelve other junior-senior courses (5 to 7 allied and 5 to 7 non-divisional) must include: Economics 61, Physical Education 83a or 88, Political Science 41 and 133, Sociology 65, Speech 37, English 32 or Journalism 53 or 56, Dramatic Arts 30 or 31 or 51, and Art 44 or 45. With permission of the major adviser and where individual circumstances warrant, other electives may be substituted for some of the allied or non-divisional required courses. (As noted above, some of these may be taken as General College electives.)

- 73 COMMUNITY RECREATION (3). Foundations of organized recreation; backgrounds and theories, objectives and principles; social and economic factors; public, private, and commercial interests; recreation and the social institutions. *Fall and spring*. Staff.
- 174 SUPERVISED FIELD TRAINING IN RECREATION (6). Prerequisite, three or more courses in recreation. Supervised field experience in recreation; students will have opportunity to receive varied practical on-the-job experience in one of many agency types. *Summer*. Meyer.
- 175 PLANNING COMMUNITY PROGRAMS FOR DEPRIVED GROUPS (3). An analysis of the leisure problems confronting disadvantaged individuals and groups. Specific attention will be given to the unique characteristics of the disadvantaged, particularly the aged, physically handicapped, mentally retarded, youth, and culturally deprived. Techniques for involving these groups in meaningful community roles through recreation and leisure experiences will be developed. Case studies of selected communities and their disadvantaged citizens will be used in developing guidelines for effective action. *Spring*. Stein.
- 176 PLANNING FOR RECREATION PROGRAMS, AREAS AND FACILITIES (4). Prerequisites, Recreation 73 or permission of instructor. A study of the principles of planning recreation programs, facilities, space, and the interdependent relationship of activities to physical environment. Emphasis is placed on the forces which condition programs and affect the design and construction of recreation facilities and areas. *Three lecture and one-two hour laboratory a week, fall*. Stein, Meyer.
- 177 ADMINISTRATION OF RECREATION (3). Analysis of recreation from the standpoint of organization: administration; finances; budget; reports and records; leadership and training; legislation; publicity and public relations; coordination of community resources; program operation. *Fall and spring*. Stein, Sessoms.
- 178 INTRODUCTION TO GROUP DYNAMICS AND COMMUNITY LEADERSHIP (3). Prerequisite, Recreation 73. An analysis of the techniques, methods, and motives of group and community leaders especially those associated with the Leisure Movement. Special attention is focused upon that role that organizational structure, personnel policies, inservice training programs, and supervision play in shaping formal, organizational leadership. *Fall and spring*. Sessoms, Stein.

DEPARTMENT OF RELIGION

JOHN H. SCHUTZ, *Chairman*

A department of religion in a state university is inevitably concerned with the study of religion from the standpoint of both the humanities and the social sciences. In other words, a department in such a setting enables one to study religion, if he wishes, along with literature, art, science, politics, philosophy, and the like, as a major factor in the life of man.

Students choosing to major in religion should take: (a) Religion 26; (b) in Biblical Studies, either 28 or 80 and 82; (c) in the Historical Study of Religion, either 32 or 83; (d) in Religion and the Imagination, either 50 or 77; (e) in Religion and

Society, either 45 or 60; (f) two additional courses in one area of concentration; and (g) two free electives. Particularly in the case of those planning to undertake graduate studies in religion, the department recommends that 195 be chosen as one of the elective courses, during the senior year.

It should be noted that the religion major is required to take three courses numbered above 100, and that changes and substitutions in the above pattern, even of the entire program, may be arranged at the student's initiative with approval by the adviser of the department.

Any student who plans to major in religion should consult the departmental adviser as early as possible to make curricular arrangements. If a student anticipates additional work at a theological seminary, he will wish to construct the rest of his program to accord with the recommendations of the American Association of Theological Schools. If one wishes to proceed to graduate study in religion, he should give special consideration to the inclusion in his undergraduate program of one or more languages in which the sacred literatures of the world have been written. The attention of such a student should early be drawn to courses offered by the University in Hebrew, New Testament Greek, Arabic, and Sanskrit. One enrolled in the School of Education may desire to qualify for accreditation as a high school teacher of religion, along with some other subject.

Special mention should be made of other undergraduate courses which have a particular relevance to the study of religion. Among the more important of these are Philosophy of Religion (Philosophy 52); Literary Aspects of the Bible (English 63); Archaeology of the Bible (Classics 85); and The Ancient Near East (History 51).

Programs of study leading to the M.A. and Ph.D. degrees, although not presently offered, will be proposed in the future. Already religion may be chosen as a minor field in graduate study. To date, students have elected to minor in religion while engaged in an M.A. or Ph.D. program in such diverse fields as English, education, philosophy, sociology, dramatic art, library science, etc. One of the principal purposes of this minor is to furnish future teachers of sociology, education, philosophy, and the like with a context of study that will enable them to see the place of their field of interest from the perspective of a religious view of man, history, and society.

- 26 INTRODUCTION TO RELIGION (3). An introduction to methods and theories appropriate to the study of religious phenomena followed by a representative survey of primitive, Oriental, and Western religions in their social and cultural settings. *Fall and spring.* Peck.

- 28 THE ORIGIN AND SIGNIFICANCE OF THE BIBLE (3). *Fall and spring*. Boyd.
- 30 THE RELIGIOUS BACKGROUND OF WESTERN CIVILIZATION (3). Credit cannot be given for both 30 and 130. A historical study of the impact of the faith of the Old Testament, Graeco-Roman religion, Teutonic religion, and Christianity upon the life and thought of the Western world. *Spring*. Nash.
- 31 THE CULTURE OF THE ANCIENT NEAR EAST (3). A consideration of the cultural and religious milieu of the second millennium, B.C., as it sheds light on biblical origins. *Fall and spring*. Sasson.
- 32 THE VARIETIES OF RELIGION IN AMERICAN LIFE AND CULTURE (3). *Fall and spring*. Hill.
- 39 INTRODUCTION TO RELIGION AND ART (Art 39) (3). A study of the main types of religious art, the principal events and works in the interaction of art and religion in Western culture, and an examination of the religious significance of a variety of contemporary formal expressions, including popular art forms. *Spring*. Dixon.
- 45 THE RELIGIONS OF THE WORLD (3). *Fall and spring*. Nash.
- 50 THE RELIGIOUS IMAGINATION (3). After an examination of the basic principles of the religious imagination, this course studies the several foundations of Western culture through its imaginative manifestations in literature, art, and forms of worship. *Fall*. Dixon.
- 52 PHILOSOPHY OF RELIGION (Philosophy 52) (3). (See Philosophy 52 for description.) *Fall and spring*. Staff.
- 60 PSYCHOLOGY OF RELIGION (3). Artificial investigation of the religious consciousness in relation to such topics as mysticism, conversion, belief, and myth interpretation, conducted in the light of contributions from depth psychology, cultural anthropology, and theology. *Fall and spring*. Peck.
- 75 RELIGIOUS THOUGHT IN THE TWENTIETH CENTURY (3). *Spring*. Hill, Peck.
- 77 RELIGIOUS THOUGHT AS LITERATURE (3). An examination of the ways in which religious documents have expressed their teaching and outlook by means of particular literary types, such as autobiography, sermon, and apology. Selected texts from writers like Augustine, Pascal, Coleridge, and Kierkegaard will be analyzed with special reference to their strategies of presentation. *Spring*. Tyson.
- 80 INTRODUCTION TO OLD TESTAMENT LITERATURE (3). *Fall*. Boyd.
- 81 INTRODUCTION TO NEW TESTAMENT LITERATURE (3). *Fall and spring*. Boyd.
- 82 JESUS IN MYTH, TRADITION AND HISTORY, 30-200 A.D. (3). An analysis of the variety of traditions used in the first two centuries to portray Jesus, focusing on the reasons for this variety and the historical and literary problems it presents. *Fall*. Schütz.
- 83 THE AGE OF THE PATRIARCHS (3). Prerequisite, Religion 28 or equivalent. A study of the Middle Bronze Age in the Biblical narrative

as illuminated by recent discoveries as Ras Shamra, Mari, and Nuzi. *Fall*. Sasson.

- 84 LITERATURE OF THE ANCIENT NEAR EAST (3). An examination of Babylonian, Canaanite, Egyptian, Hittite and Summerian texts from the prebiblical era, focusing on representative myths, epics, sagas, songs, proverbs, prophecies and hymns. *Fall*. Sasson.
- 86 THE BIRTH OF CHRISTIANITY (3). An analysis of the origin of the Christian Church and the earliest stages of its expansion, with particular emphasis on the problems evident in the shift from a Jewish to a Gentile framework. Paul's role and contribution in defining and resolving the issues will be considered in detail and evaluated in the light of subsequent events. *Fall and spring*. Schütz.
- 87 EARLY CHRISTIANITY AND ITS HELLENISTIC SETTING (3). John's Gospel will be used as a test case from early Christian literature for assessing the impact of the Hellenistic religious world on the New Testament and the early church. A close reading of that text will be followed by an analysis of several forms of Hellenistic and Jewish piety, including gnosticism and Hellenistic Judaism. *Spring*. Schütz.
- 90 TOPICS IN THE STUDY OF RELIGION (3). Prerequisite, permission of the instructor. Subject matter will vary with instructor and topic, but always be focused on a particular problem or issue. *Spring*. Staff.
- 91 RELIGIOUS ETHICS AND MODERN PROBLEMS (3). *Fall and spring*. Tyson.
- 93 RELIGIOUS PERSPECTIVES ON THE PROBLEM OF HISTORY (3). *Fall*. Tyson.
- 95 THE RELATIONS BETWEEN SCIENCE AND RELIGION (3). Prerequisite, Religion 28, or 30, or 45, or permission of the instructor. This course will be concerned with the mutual influence of natural science and religion upon each other in Western civilization from 1500 to the present day. *Fall*. Nash.
- 97 COURSES FOR HONORS (3 each semester). Required of all students
- 98 reading for honors in Religion. *Fall and spring*.
- 103 RELIGION AND HIGHER EDUCATION (3). Prerequisite, Religion 30, or 45, or special permission. This course will consist of a historical and comparative study of the relations between religion and higher education since the Reformation. *Fall*. Nash.
- 113 ELEMENTARY HEBREW (Linguistics 113-114) (3). *Fall and spring*.
- 114 Sasson.
- 121 THE BIBLICAL PERSPECTIVE (3). Prerequisite, Religion 28 and permission of the instructor. A systematic consideration of the central themes of the Bible, and the tension between the Biblical *Weltanschauung* and other world views. *Spring*. Boyd.
- 130 RELIGION AND CULTURE IN WESTERN CIVILIZATION (3). Prerequisites, Religion 28 (or 80) together with Religion 45. Not to be taken by students who have received credit for Religion 30. A study of the relations between the religions of the Western world (beginning with the dawn of civilization in the ancient Near East) and the different cultural expressions which these religions have taken. *Spring*. Nash.

- 135 THE RELIGIOUS ELEMENT IN THE AMERICAN TRADITION (3). Prerequisite, Religion 32 or permission of the instructor. An analysis of the interaction of American religious institutions and concepts with dominant ideas, movements, and values in the American tradition. *Spring*. Hill.
- 138 RELIGION IN THE SOUTH (3). Prerequisite, Religion 32 or permission of the instructor. An inquiry into the history, sociology, and dominant ideological patterns of religion in the American South. The interaction of religion and the regional culture will be considered. *Fall*. Hill.
- 140 COMPARATIVE RELIGION AND THE POPULATION PROBLEM (3). Prerequisite, permission of the instructor. The role of Hinduism in India, Buddhism in Thailand and Islam in Egypt with reference to population developments; analyses of the relevant religious texts and ethical theories. *Spring*. Nash.
- 150 THE RELIGIOUS IMAGINATION IN THE MEDIEVAL AND MODERN WORLD (3). Prerequisite, Religion 50 or permission of the instructor. A study of the religious imagination in selected manifestations in literature, art, and types of worship, from the Middle Ages to the present. *Spring*. Dixon.
- 152 THE DEVELOPMENT OF MEDIEVAL PHILOSOPHY (Philosophy 152) (3). (See Philosophy 152 for description.) *Spring*. Staff.
- 155 RELIGIOUS ART IN THE WEST (Art 155) (3). Prerequisite, Art 33 or permission of the instructor. A study of the origin of religious art in faith and the formal liturgy, and the impact of artistic development on the life and thought of religious institutions. *Spring*. Dixon.
- 156 THE ART OF FLORENCE (Art 156) (3). Prerequisites, Religion (Art) 39 or permission of the instructor. A study of the art of Florence from the beginning to the 16th century with primary emphasis on its religious dimension. *Spring*. Dixon.
- 170 SOCIOLOGY OF RELIGION (Sociology 170) (3). Prerequisites, Religion 32 or 45, and Anthropology 41 or Sociology 51. Analysis of tensions between the scientific, ethical and theological study of society; the role of religion in social change; the social origins of the denominations; the sociological significance of the Reformation; "sect" and "church" in sociological theory. *Spring*. Nash, Stauffer.
- 171 THE WORK OF THE DEUTERONOMISTS (3). Prerequisites, Religion 28 or Religion 80 and permission of the instructor. A study of the work of the Deuteronomists, their philosophy of history, their continuity with the prophetic movement, and their contributions to the development of Biblical thought. *Fall*. Boyd.
- 185 THE CONFLICT OF RELIGIONS IN THE EARLY ROMAN EMPIRE (3). Prerequisites, Religion 86 or 87. Case studies in the impact of eastern religions on the early empire and on one another within the empire. Particular attention will be paid to political and social implications. *One semester*. Schütz.
- 191 RELIGIOUS ETHICS AND ISSUES IN CONTEMPORARY MEDICINE (3). Prerequisites, senior or graduate standing and permission of the instructor. Examination of religious-ethical dimensions of such issues as the dying patient, organ transplants, abortion, prolongation of life,

and experimentation on human beings, drawing on theory from the tradition western religions and the social sciences. *Spring*. Allen.

- 195 THEORIES AND METHODS IN THE STUDY OF RELIGION (3). Prerequisite, senior major or graduate standing. Systematic investigation into the nature of religious phenomena, including ideas and images, behavior, documents, and institutions, with principal reference to the methods suitable to such inquiry. *Spring*. Staff.

NEAR EASTERN ARCHAEOLOGICAL SEMINAR

The University of North Carolina is associated with the Institute for Mediterranean Studies, which sponsors the Near Eastern Archaeological Seminar in connection with its excavations in Palestine. Students who participate in this seminar will spend 8 weeks in the Middle East taking such courses as Biblical Archaeology, Historical Geography and Classical Hebrew. The program includes 3 weeks of actual digging at an ancient site in Palestine. Students will be given academic credit provided they successfully complete the course program and submit the necessary transcript. For further details either contact Professor Bernard Boyd of the Department of Religion or write directly to The Institute for Mediterranean Studies, 1533 Shattuck Avenue, Berkeley, California, 94709.

DEPARTMENT OF ROMANCE LANGUAGES

FREDERICK W. VOGLER, *Acting Chairman*

FRENCH

Students interested in having a major in French will please consult Edward D. Montgomery.

Those students who plan to teach in public high schools should see "School of Education."

The upper college requirement for the A.B. degree with a major in French is eight courses, with a minimum of three to be chosen from French 50, 51, 52, 53, 126, 145, and a minimum of three from French 60, 61, 70, 71, 72, 73, 74, 75, 80, 81, 82, 95, 96, 97.

JUNIOR YEAR ABROAD PROGRAM: "UNC YEAR-AT-LYON"

The University of North Carolina sponsors a study-abroad program in Lyon, France, in cooperation with the University of Lyon. Now in its sixth year of operation by the Department of Romance Languages, "UNC Year-at-Lyon" makes it possible for groups of approximately 35 American students from this University and other institutions to study ten months in France (September through June) while making normal academic progress in taking 30 semester hours of French university course

work under the direction of the UNC resident professor-in-charge. This program is open to qualified undergraduates regardless of academic major and is not restricted to third-year students. Inquiries should be addressed to the Director, UNC Year-at-Lyon Program, 238 Dey Hall.

- 1-2 ELEMENTARY FRENCH (6). *Three hours a week plus laboratory, through two semesters.* Staff.

Attention is called to French 14-15, designed for advanced students who have fulfilled the requirements in another foreign language.

- 3 INTERMEDIATE FRENCH¹ (3). *Three hours a week plus laboratory.* Staff.

- 3A-INTERMEDIATE FRENCH (6). Prerequisites, French 1, 2. Intensive 4A course emphasizing reading and writing, taught in French. *Fall and spring.* Staff.

- 4 INTERMEDIATE FRENCH¹ (3). *Three hours a week plus laboratory.* Staff.

- 11 INTRODUCTION TO FRENCH (3). Prerequisite, French 2 or equivalent. Review of basic elements of language and culture with stress on conversation. *Any semester.* Staff.

- 14 BEGINNING COURSE FOR ADVANCED STUDENTS (3 each). Elective. *Three hours a week, fall and spring.* Staff.

- 21 ADVANCED FRENCH (3). Sophomore elective. Survey of French literature from its medieval origins to 1800. *Any semester.* Daniel, Vogler, Haig.

- 40 INTERMEDIATE COMPOSITION, SYNTAX, AND THEME WRITING (3). Prerequisite, French 4, or equivalent. Emphasis on practical exercises, dictations, translations, essays. Short initiation to phonetics. *Any semester.* Haig, La Quérière.

- 41 INTERMEDIATE CONVERSATION AND COMPOSITION (3). Prerequisite, French 4 or equivalent. Basic conversation and vocabulary; intonation; introduction to written French (short essays). *Any semester.* Daniel, Haig, La Quérière.

- 50 ADVANCED COMPOSITION, SYNTAX, AND THEME WRITING (3). Prerequisite, French 4 or equivalent. Emphasis on syntax, stylistics, translation, essay writing. Notions of phonetics. *Any semester.* Haig, La Quérière.

- 51 FRENCH CONVERSATION (3). Prerequisite, French 4 or equivalent. Stress on fluency in oral French and composition and translation. *Any semester.* Daniel, Haig, La Quérière.

- 52 FRENCH CIVILIZATION I (3). Prerequisite, French 51 or equivalent. A study of the important aspects of French civilization from its beginning to the French Revolution. *Fall and spring.* Hardré, Vogler, Haig.

1. This course may be taken for elective credit if the language requirements have already been satisfied.

- 53 FRENCH CIVILIZATION II (3). Prerequisite, French 52. Continuation of French 52, from the Revolution to the present. *Fall and spring*. Hardré, Vogler, Haig.
- 60 SURVEY OF FRENCH LITERATURE I (3). Prerequisite, French 21 or equivalent. A survey of French literature from its origin to the 18th century. *Fall and spring*. Engstrom, Daniel, Vogler, Haig, Masters.
- 61 SURVEY OF FRENCH LITERATURE II (3). Prerequisite, French 21 or equivalent. A survey of French literature from the 18th century to the present. *Fall and spring*. Engstrom, Daniel, Vogler, Haig, Masters.
- 70 FRENCH LITERATURE OF THE MIDDLE AGES (3). Prerequisite, French 21 or equivalent. A study of the outstanding medieval works of literature, including those of Chrétien de Troyes, Marie de France, François Villon, Charles d'Orléans. *Fall*. Montgomery.
- 71 FRENCH LITERATURE OF THE RENAISSANCE (3). Prerequisite, French 21 or equivalent. Study of the literary trends of the period, with particular emphasis on Marot, Scève, Labé, Du Bellay, Ronsard, D' Aubigné, Du Bartas, Sponde; Rabelais and the conteurs; Montaigne. *Spring*. Masters.
- 72 FRENCH LITERATURE OF THE SEVENTEENTH CENTURY (3). Prerequisite, French 21 or equivalent. Major concepts of the period; baroque, preciosity, classicism. Representative authors: Malherbe, Descartes, La Fontaine. Emphasis on classicism and theater of Corneille, Molière and Racine. *Spring*. Daniel, Vogler, Haig.
- 73 FRENCH LITERATURE OF THE EIGHTEENTH CENTURY (3). Prerequisite, French 21, or equivalent. A study of the literature of the "Enlightenment," as reflected in various genres. Special attention is given to the "philosophes," and to developments in prose fiction, drama, and poetry. *Fall*. Lacombe.
- 74 FRENCH LITERATURE OF THE NINETEENTH CENTURY (3). Prerequisite, French 21 or equivalent. Principal trends in various genres. Romanticism, Realism, Naturalism, Symbolism. Representative authors are Balzac, Stendhal, Flaubert, Zola, Baudelaire and the Romantic poets, the Parnassian and Symbolist poets. *Fall*. Engstrom, Haig.
- 75 FRENCH LITERATURE OF THE TWENTIETH CENTURY (3). Prerequisites, French 21 or equivalent. A study of the leading authors of the twentieth century with special emphasis on Proust, Gide, Claudel, Péguy, the surrealist poets, Malraux, Giraudoux, Sartre and Camus. *Spring*. Hardré, Falk.
- 80 MASTERPIECES OF FRENCH DRAMA (3). Prerequisites, French 21 or equivalent. Study of a dozen major, representative French plays; from the Medieval through the 20th century. *Fall and spring*. Staff.
- 81 MASTERPIECES OF FRENCH POETRY (3). Prerequisites, French 21 or equivalent. A study of selected masterpieces of French poetry. *Fall*. Staff.
- 82 MASTERPIECES OF FRENCH PROSE (3). Prerequisite, French 21 or equivalent. Important developments in the genre from 1600 to 1960. *Spring*. Staff.
- 83 MATERIALS AND METHODS IN HIGH SCHOOL FRENCH AND SPANISH (Education 83f) (3). *Spring*. Maley.

- 84 DIRECTED TEACHING OF HIGH SCHOOL FRENCH AND SPANISH (Education 84f) (3). *Any semester*. Maley.
- 95 SPECIAL TOPICS IN FRENCH (3). Permission of instructor required. Content to be determined by interests of students and instructor. Open to juniors and seniors. *Any semester*. Staff.
- 96 UNDERGRADUATE SEMINAR IN FRENCH LITERATURE (3). Prerequisite, French 21 or equivalent. A course intended primarily as a seminar for undergraduates who plan to read for Honors in French. Open to others with permission. *Fall and spring*. Staff.
- 97 HONORS COURSE (3). Open to juniors and seniors; required of all students reading for Honors in French.
- 126 HISTORY OF THE FRENCH LANGUAGE (3). Prerequisites, French 60, 61 or equivalent. *Spring*. Montgomery.
- 145 FRENCH PHONETICS (3). Prerequisite, French 51 or equivalent. A practical course emphasizing pronunciation (with an opportunity for each student to perform), the phonetic alphabet, dictation, and tape recordings in the laboratory. *Fall*. Daniel, La Quérière.
- 105 CELTIC: OLD IRISH (3). *On demand*. Holmes.
- 106 CELTIC: OLD WELSH (3). *On demand*. Holmes.

ITALIAN

- 1-2 ELEMENTARY ITALIAN (6). *Three hours a week, through two semesters*. Ilgen; staff.

Attention is called to Italian 14-15, designed for advanced students who have fulfilled the requirements in another foreign language.

- 3 INTERMEDIATE ITALIAN (3). *Three hours a week*. Ilgen; staff.
- 4 INTERMEDIATE ITALIAN (3). *Three hours a week*. Ilgen; staff.
- 1-2 INTENSIVE ELEMENTARY ITALIAN (6). A double course in one semester. A course designed to develop intensively the basic skills in the language: understanding, speaking, reading, and writing. *Six hours a week, fall*. Ilgen; staff.
- 3-4 INTENSIVE INTERMEDIATE ITALIAN (6). A double course in one semester. Continues the work of Italian 1-2. In conjunction with Italian 1-2, fulfills the language requirement in one year. *Six hours a week, spring*. Ilgen; staff.
- 14 BEGINNING COURSE FOR ADVANCED STUDENTS (6 each). An intensive two semester course for students with special aptitude who have already fulfilled their requirement in another foreign language. *Six hours a week; 14, fall and 15, spring*. Ilgen; staff.
- 21 ADVANCED ITALIAN (3). Based on the close reading of a series of modern works of prose, poetry, and drama, this course is designed to prepare the student for more advanced work in literature. *Three hours a week, fall*. Ilgen; staff.
- 50 ADVANCED COMPOSITION, SYNTAX AND THEME WRITING (3). Prerequisite, Italian 15 or 21. *Fall*. Staff.

- 51 ADVANCED ITALIAN CONVERSATION (3). Prerequisites, Italian 15 or 21. *Spring*. Staff.
- 70 DANTE, PETRARCH, AND BOCCACCIO (3). Prerequisite, Italian 50. An introduction to the works of the three major figures of Italian literature. *Fall*. Staff.
- 82 THE MODERN ITALIAN NOVEL (3). Prerequisite, Italian 50. A representative sampling of the genre from Verga to the present. *Spring*. Staff.
- 95 SPECIAL TOPICS IN ITALIAN (3). Prerequisite, permission of instructor. Content to be determined by interests of students and instructor. *Any semester*. Staff.
- 121 ITALIAN RENAISSANCE LITERATURE IN ENGLISH TRANSLATION (Comparative Literature 121) (3). (Not open to graduate majors in Romance Languages). A study in English translation of the major authors of the Italian Renaissance with special attention given to works of Petrarch, Boccaccio, Machiavelli, Castiglione, Ariosto, and Tasso. *Fall*. DeSua.
- 122 MODERN ITALIAN LITERATURE IN ENGLISH TRANSLATION (Comparative Literature 122) (3). Study in English translation of the major prose writers of modern Italian literature with special attention given to Manzoni, Verga, Pirandello, Svevo, Moravia, Lampedusa, and other contemporary novelists. (Not open to graduate majors in Romance Languages). *Spring*. DeSua.
- 126 HISTORY OF THE ITALIAN LANGUAGE (3). Prerequisite, Italian 15 or 21 and consent of instructor. The evolution of the Italian language as documented in literary texts from the origins to the present. (1970-1971 and alternate years). *Fall*. Staff.
- 133 DANTE IN ENGLISH TRANSLATION (Comparative Literature 133) (3). (Not open to graduate majors in Romance Languages). *Spring*. DeSua.
- 141 ITALIAN LITERATURE OF THE RENAISSANCE I (3). Prerequisite, Italian 15 or 21. (1969-1970 and alternate years). *Fall*. Scaglione.
- 151 ITALIAN LITERATURE OF THE RENAISSANCE II (3). Prerequisite, Italian 15 or 21. (1970-1971 and alternate years). *Spring*. Scaglione.
- 171 THE AGE OF BAROQUE AND OF ENLIGHTENMENT (1600-1800) (3). Prerequisite, Italian 15 or 21. Major trends and figures of the age: Baroque; Galileo; Marino; Chiabrera; Arcadia; Metastasio and the melodrama; the Enlightenment; G. B. Vico; Goldoni, Parini, Alfieri. (1970-1971 and alternate years). *Fall*. Illiano.
- 181 ITALIAN ROMANTICISM (3). Prerequisite, Italian 15 or 21. Pre-romanticism; Alfieri; the lyrics and novels of Foscolo, Leopardi, Manzoni; the Romantic drama from Pindemonte to Niccolini. (1970-1971 and alternate years). *Spring*. DeSua, Illiano.
- 194 MODERN ITALIAN POETRY (C. 1860 to the Present) (3). Prerequisite, Italian 15 or 21. A study of the major poets and poetic currents of the late 19th and 20th centuries with special emphasis on Carducci, Pascoli, D'Annunzio, the Crepuscolari, Futuristi and Ermetici, Camp-

- ana, Saba, Ungaretti, Montale and Quasimodo. (1970-1971 and alternate years). *Fall*. DeSua.
- 195 MODERN ITALIAN FICTION (C. 1860 to the Present) (3). Prerequisite, Italian 15 or 21. I veristi with emphasis on Verga, D'Annunzio, Pirandello, Svevo, Moravia, Pavese, Vittorini, Silone and Calvino, recent developments. (1970-1971 and alternate years.) *Spring*. DeSua, Illiano.
- 196 MODERN ITALIAN DRAMA (1860 to the Present) (3). Prerequisite, Italian 15 or 21. Neo-Romanticism and Naturalism; I grotteschi; Pirandello; Betti; Italian Drama after World War II; Eduardo de Filippo. (1970-1971 and alternate years). *Fall*. Illiano.

PORTUGUESE

- 1-2 ELEMENTARY PORTUGUESE (6). *Three hours a week plus laboratory, through two semesters*. Sharpe, Clark.
- Attention is called to Portuguese 14-15, designed for advanced students who have fulfilled the requirements in another foreign language.
- 3 INTERMEDIATE PORTUGUESE (3). *Three hours a week, plus laboratory*. Sharpe, Clark.
- 4 INTERMEDIATE PORTUGUESE (3). *Three hours a week, plus laboratory*. Sharpe, Clark.
- 14 BEGINNING COURSE FOR ADVANCED STUDENTS (3 each). A course
- 15 in Brazilian Portuguese for students who have already fulfilled their requirement in another foreign language. Introduction to spoken language, followed by readings from representative modern Brazilian authors. *Three hours a week, fall and spring*. Sharpe, Clark.
- 95 (Honors) SPECIAL TOPICS IN PORTUGUESE (3). Prerequisite, permission of instructor. Content to be determined by interests of students and instructor. Open to Juniors and Seniors. *Any semester*. Staff.
- 101 SURVEY OF PORTUGUESE LITERATURE I (3). Prerequisite, Portuguese 4, 15, or equivalent. An introduction to Portuguese literature from its origins through the 18th century. (1970-1971 and alternate years.) *Fall*. Sharpe.
- 102 SURVEY OF PORTUGUESE LITERATURE II (3). Prerequisite, Portuguese 4, 15, or equivalent. A survey of Portuguese literature of the 19th and 20th centuries. (1970-1971 and alternate years.) *Spring*. Sharpe.
- 103 SURVEY OF BRAZILIAN LITERATURE I (3). Prerequisite, Portuguese 4, 15, or equivalent. A survey of Brazilian literature of the colonial period and 19th century. (1971-1972 and alternate years.) *Fall*. Clark.
- 104 SURVEY OF BRAZILIAN LITERATURE II (3). Prerequisite, Portuguese 4, 15, or equivalent. Study of major writers of 20th century Brazilian literature. (1971-1972 and alternate years.) *Spring*. Clark.

SPANISH

Students interested in having a major in Spanish will please consult Mrs. Maria Salgado.

Those students who plan to teach in public high schools should see "School of Education." The course requirements for

the A.B. degree with a major in Spanish are as follows: eight courses, a minimum of three to be chosen from the language-civilization group (50, 51, 52, 53, 126, 145) and a minimum of three from the literature group (70- 80- 90- and 100-numbered courses).

1-2 ELEMENTARY SPANISH (6). *Three hours a week plus laboratory through two semesters.* Staff.

Attention is called to Spanish 14-15, designed for advanced students who have fulfilled the requirements in another foreign language.

3 INTERMEDIATE SPANISH² (3). *Three hours a week plus laboratory.* Staff.

4 INTERMEDIATE SPANISH² (3). *Three hours a week plus laboratory.* Staff.

3A-INTERMEDIATE SPANISH (6). Prerequisites, Spanish 1, 2. Intensive 4A course emphasizing reading and writing taught in Spanish. *Fall and spring.* Staff.

11 INTRODUCTION TO SPANISH CONVERSATION (3). Prerequisite, Spanish 2 or equivalent. Review of basic elements of language and culture with stress on conversation. *Any semester.* Staff.

14 BEGINNING COURSE FOR ADVANCED STUDENTS (3 each). Elective.

15 *Three hours a week, fall and spring.* McKnight, Maissen, Salgado.

21 ADVANCED SPANISH (3). Sophomore elective. Masterpieces of Spanish literature. *Any semester.* Stoudemire, McKnight, Casado, Diaz, Salgado.

22 ADVANCED SPANISH (3). Sophomore elective. Contemporary Hispanic Literature. *Any semester.* Stoudemire, McKnight, Casado, Salgado.

40 INTERMEDIATE COMPOSITION, SYNTAX, AND THEME WRITING (3). Prerequisite, Spanish 4 or equivalent. *Any semester.* McKnight, Casado, Salgado.

41 INTERMEDIATE CONVERSATION AND COMPOSITION (3). Prerequisite, Spanish 4 or equivalent. *Any semester.* Maissen, Casado, Salgado.

50 ADVANCED COMPOSITION, SYNTAX, AND THEME WRITING (3). Prerequisite, Spanish 4 or equivalent. *Fall and spring.* Stoudemire, McKnight, Casado, Salgado.

51 SPANISH CONVERSATION AND COMPOSITION (3). Prerequisite, Spanish 4 or equivalent. *Any semester.* Duffey, Salgado, Casado.

52 SPANISH CIVILIZATION (3). Prerequisite, Spanish 51. *Fall and spring.* Duffey.

53 SPANISH AMERICAN CIVILIZATION (3). Prerequisite, Spanish 51. A survey in Spanish of the history and culture of Spanish America. *Fall.* Duffey, Salgado.

2. This course may be taken for elective credit if the language requirement has been been satisfied already.

- 71 SURVEY OF SPANISH LITERATURE TO 1700 (3). Prerequisite, Spanish 21. Open to juniors and seniors. *Fall*. Stoudemire, McKnight, Diaz, Maissen, Salgado.
- 72 SURVEY OF SPANISH LITERATURE SINCE 1700 (3). This course is a continuation of Spanish 71. Open to juniors and seniors. *Spring*. Stoudemire, McKnight, Diaz, Maissen, Casado, Salgado.
- 73 SURVEY OF SPANISH AMERICAN LITERATURE (3). Prerequisite, Intermediate Spanish. *Spring*. Salgado.
- 80 MASTERPIECES OF SPANISH DRAMA (3). *Fall*. Staff.
- 81 MASTERPIECES OF SPANISH POETRY (3). *Fall*. Staff.
- 82 MASTERPIECES OF SPANISH PROSE (3). *Spring*. Staff.
- 83 MATERIALS AND METHODS IN HIGH SCHOOL FRENCH AND SPANISH (Education 83s) (3). *Spring*. Maley.
- 84 DIRECTED TEACHING OF HIGH SCHOOL FRENCH AND SPANISH (Education 84s) (3). *Any semester*. Maley.
- 85 MEDIEVAL SPANISH LITERATURE (3). Prerequisite, Spanish 21 or equivalent. A survey of lyric poetry, drama, prose and genres peculiar to the literature before 1500. *Fall*. Staff.
- 86 SPANISH LITERATURE OF THE RENAISSANCE (3). Prerequisite, Spanish 21 or equivalent. A survey of poetry, drama, and prose of 16th century Spanish literature. *Spring*. Staff.
- 95 SPECIAL TOPICS IN SPANISH (3). Open to juniors and seniors. To provide a variable content course for use as independent study, tutorial or seminar. Content to be determined by interests of student and instructor. Permission of the instructor required. *Any semester*. Staff.
- 96 UNDERGRADUATE SEMINAR IN SPANISH LITERATURE (3). Prerequisite, Spanish 21 or equivalent. Intended primarily as seminar for undergraduates who plan to read for Honors in Spanish. (Open to others by special permission.) *Fall and spring*. Staff.
- 97 HONORS COURSE (3). Required of all students reading for Honors in Spanish.
- 113 COLONIAL AND NINETEENTH CENTURY SPANISH AMERICAN LITERATURE (3). Prerequisites, Spanish 71, 72. *Fall*. Salgado.
- 114 MODERNIST AND CONTEMPORARY SPANISH AMERICAN LITERATURE (3). Prerequisites, Spanish 71, 72. *Spring*. Salgado.
- 117 CERVANTES (3). Prerequisites, Spanish 71, 72. The works of Cervantes, stressing the *Quijote* and the *Novelas ejemplares*, with consideration of the background of Renaissance prose (the Romance of Chivalry, Pastoral, Sentimental Novel). *Spring*. Stoudemire.
- 126 HISTORY OF THE SPANISH LANGUAGE (3). Prerequisites, Spanish 71, 72. *Spring*. Maissen.
- 135 MODERN SPANISH DRAMA (3). Prerequisites, Spanish 71, 72. A study of plays by the principal Spanish dramatists of the twentieth century. *Spring*. Stoudemire, McKnight.
- 145 SPANISH PHONETICS (3). Prerequisite, Spanish 51. *Fall*. Duffey.

SEMITICS

(See listings under Linguistics)

- 103 COLLOQUIAL EGYPTIAN ARABIC (3). Intensive study of conversational Arabic with occasional lectures on the structure of the language. (1968-1969 and alternate years.) *Fall*. Cortés.
- 113 ELEMENTARY HEBREW (Linguistics 113-114) (Religion 113-114) (3). The structure and basic vocabulary of the Hebrew language. A standard textbook will be supplemented by selected prose readings from the Old Testament. *Fall and spring*.
- 131 CLASSICAL ARABIC (3). Prerequisites, Arabic 121 and 122. Lectures and reading in Quranic Arabic and literature of the tenth century. *Fall and spring*. Cortés.
- 141 RENAISSANCE ARABIC (3). Prerequisites, Arabic 121, 122, 131, 132. Selected readings from the prose literature of modern Arabic Renaissance. Introduction to Arabic poetry. Alternate years. *On demand*. Cortés.

RUSSIAN

(See Slavic Languages)

DEPARTMENT OF SLAVIC LANGUAGESWALTER VICKERY, *Chairman*

The Department of Slavic Languages offers courses leading to the degrees of Bachelor of Arts, Master of Arts, and Doctor of Philosophy. The undergraduate Slavic program leading to the Bachelor of Arts degree is made up of a series of courses in languages and literature which give the student a knowledge of spoken and written Russian and of Russian literature. Courses in Polish, Serbo-Croatian, and Czech are also offered. For detailed information concerning the degree requirements write to the Chairman of the Department of Slavic Languages.

Czech

- 101 ELEMENTARY CZECH (3 each). Pronunciation, structure of language, and reading are emphasized. The audio-lingual approach will encourage generating of simple native sentences and thinking in Czech. (Offered in 1970-1971.) *Fall and spring*. Jenik.
- 103 INTERMEDIATE CZECH (3 each). Continuation of 101-102. Exercises in the structure of language and composition. Conversation and readings from Czech literature. *On demand*. Jenik.

Polish

- 101 ELEMENTARY POLISH (3 each). Pronunciation, structure of language, and reading in modern Polish. Audio-lingual approach. (Offered in 1970-1971.) Staff.

- 103 INTERMEDIATE POLISH (3 each). Continuation of 101-102. Exercises in the structure of language and composition. Conversation and readings from Polish literature. *On demand*. Staff.

Russian

- 1-2 ELEMENTARY RUSSIAN (3 each). Introductory course designed to lay foundation of grammar and to convey basic reading and pronunciation skills. *Three hours a week, through two semesters*. Staff.
- 3-4 INTERMEDIATE RUSSIAN (3 each). Grammar-translation work with increasing proportions of free reading and oral work. *Three hours a week, through two semesters*. Staff.
- 21 RUSSIAN CONVERSATION (3 each). Prerequisite, Russian 4 or equivalent. Designed to develop conversational skills in a variety of situations and subjects. Russian used, except for minimum of linguistic explanations or comment. 21, *fall*; 22, *spring*. Staff.
- 31 ADVANCED RUSSIAN GRAMMAR (3 each). Prerequisite, Russian 4.
- 32 Conjugation, declension, root structure, prefixation and suffixation; modern usage. 31, *fall*; 32, *spring*. Koubourlis.
- 50 INTRODUCTION TO RUSSIAN LITERATURE (3). Prerequisite, Russian 4 or equivalent. Reading and discussion of selected authors in Russian aimed at improving reading skill and preparing the student for higher level work in Russian literature. *Spring*. Debreczeny.
- 70 RUSSIAN LITERATURE OF THE NINETEENTH CENTURY (Comparative Literature 70) (3). Introduction to Russian prose fiction of the 19th century with particular consideration of selected writings of Pushkin, Gogol, Turgenev, Dostoevsky, and Tolstoy. *Fall*. Debreczeny.
- 72 RUSSIAN LITERATURE FROM CHEKHOV TO THE REVOLUTION (3). Literary situation and authors of 1880-1917, with emphasis on Chekhov and the Symbolists. Lectures and readings in English; some readings in Russian for majors. *Fall*. Mihailovich.
- 74 RUSSIAN LITERATURE OF THE SOVIET PERIOD (Comparative Literature 74) (3). Russian writers and literary problems from the Revolution to the present. Lectures and readings in English; selected readings in Russian for majors. *Spring*. Mihailovich.
- 101 THE STRUCTURE OF MODERN RUSSIAN (3). Prerequisite, Russian 31. Synchronic phonology, morphology and syntax. *Spring*. Koubourlis.
- 101x ELEMENTARY RUSSIAN FOR GRADUATE STUDENTS (0 each). Designed for preparation for reading knowledge examination for higher degrees. Passing of 102x will certify that this requirement has been satisfied. *Fall and spring*. Staff.
- 159 EARLY RUSSIAN LITERATURE (3). Readings and stylistic analysis of the most representative Russian literary monuments written between the 11th and 18th centuries. Huey.
- 160 RUSSIAN LITERATURE OF THE EIGHTEENTH CENTURY (3). A survey of leading writers and works of Russian Classicism and the New Sensibility. *Spring*. Vickery.

- 161 THE GOLDEN AGE OF RUSSIAN POETRY (3). Prerequisite, Russian 22 or permission of instructor. Readings and lectures on the poetry of Pushkin and Lermontov, with some consideration of other contemporary poets. *Fall*. Vickery.
- 163 THE RISE OF RUSSIAN PROSE FICTION (3). Prerequisites, Russian 22 or permission of the instructor. Russian prose of the first half of the nineteenth century; special emphasis on the prose of Pushkin, Lermontov, and Gogol. *Spring*. Debreczeny.
- 166 RUSSIAN SYMBOLISM (3). Prerequisites, reading knowledge of Russian or permission of instructor. An introduction to the leading writers and works of the Symbolist movement in Russia. *Fall*. Huey.
- 168 MASTERPIECES OF SOVIET LITERATURE (3). Prerequisite, Russian 22 or permission of the instructor. A study of outstanding works in Russian literature of the Soviet period. Readings in Russian. *Fall*. Mihailovich.
- 193 RUSSIAN SHORT STORY (3). Prerequisite, Russian 22 or permission of instructor. Short stories from Pushkin to the present are analyzed both historically and artistically. Readings in Russian. *Spring*. Mihailovich.
- 199 HISTORY OF THE RUSSIAN LANGUAGE (3). Elements of phonology, morphology, syntax; reading of Old Russian texts. *Fall*. Koubourlis.

Serbo-Croatian

- 101 ELEMENTARY SERBO-CROATIAN (3 each). Pronunciation, structure
- 102 of the language, and reading are emphasized. The audio-lingual approach will encourage simple conversation and writing of simple sentences. (Offered in 1970-1971.) *Fall and spring*. Mahailovich.
- 103 INTERMEDIATE SERBO-CROATIAN (3 each). Continuation of 101-
- 104 102. Exercises in the structure of language and composition. Conversation and readings from contemporary literature. *On demand*. Mihailovich.

Slavic

- 50 INTRODUCTION TO SLAVIC CIVILIZATION (3). Introduction to the Slavic world of past and present, viewed as a constituent culture within Western civilization. *Fall*. Staff.
- 105 INTRODUCTION TO SLAVIC LINGUISTICS (3). Introduction to the sound pattern and morphology of Slavic languages from the late Indo-European to the split of the Common Slavic linguistic unity. *Fall*. Staff.
- 107 OLD CHURCH SLAVONIC (3). Elements of phonology, morphology, syntax; reading of Old Slavic texts. *Fall*. Koubourlis.
- 111 WEST SLAVIC LITERATURES (3). Introduction to the literatures of the West Slavic peoples (chiefly Polish, Czech, and Slovak), with some consideration of their relations to West European literatures. *On demand*. Staff.
- 112 SOUTH SLAVIC LITERATURES (3). Introduction to the literatures of the South Slavic peoples (chiefly Serbian, Croatian and Bulgarian),

with some consideration of their relations to West European literatures. *On demand.* Mihailovich.

- 115 SLAVIC FOLK LITERATURE (Folklore 115) (3). Development of heroic songs, folk tales, and ballads in various Slavic areas and their influence on the development of written literature. *Spring.* Staff.

DEPARTMENT OF SOCIOLOGY

GERHARD LENSKI, *Chairman*

The undergraduate major program in Sociology is designed to provide an understanding of human societies for those desiring a liberal education as well as those preparing for graduate study. With the assistance of his adviser in the Department, the student may elect a course of study to provide a foundation for a variety of occupations. To assist the student in formulating his undergraduate program in Sociology the Department offers a supplementary catalogue which contains more detailed information on the content instructors intend to cover in a given semester. This may be obtained in the departmental office two weeks before pre-registration in the Fall and Spring. (The departmental honors program, summer field research opportunities, courses in other departments of related interest, career opportunities, research and teaching interests of faculty, and the Association of Sociology Students are described in a Student Handbook which may be obtained in the departmental office.)

UNDERGRADUATE MAJOR: Sociology 51,¹ preferably taken by the end of the sophomore year, is required of all majors. Majors must take eight courses in sociology (excluding 51 and 52), seven allied, and five non-divisional courses. The eight sociology courses must include 85 and 95 and may not include more than four courses from 53 through 80. Sociology 85 should be taken no later than the junior year; majors must earn a *C* or better in this course. All courses below 85 do not have prerequisites; courses 85 and above usually have prerequisites. In the 100 series, course numbers are generally indicative of the level of the course; the higher the number, the more advanced the instruction.

HONORS IN SOCIOLOGY: Students with a grade average of *B* or better are encouraged to apply for admission to candidacy for a degree with honors. This should be done during the junior year preferably during the first semester. The honors program emphasizes small seminar discussions and independent research under the guidance of faculty members. The aim of the honors program is to free the serious and qualified student from some of the restrictions of the usual undergraduate course format, so

1. Students must make a *C* or better in introductory sociology (Sociology 51 or 151) to major. Sociology 52 is not creditable within the eight-course major in sociology.

as to maximize the opportunity for critical analysis and independent study, Sociology 51A is open for superior students with permission from the instructor.

Detailed information on the honors program can be obtained from the Department Honors Chairman, Professor Richard Cramer. Mimeographed descriptions are also available in the Department Office.

Unless specifically indicated, Sociology 51 is not prerequisite for other sociology courses.

- 51 INTRODUCTION TO SOCIOLOGY (3). Juniors and seniors should take Sociology 151. An introduction to the structure, functioning, and development of human societies, with special attention to modern industrial societies in general and American society in particular. *Fall and spring*. Staff.
- 52 SOCIAL PROBLEMS (3). May not be counted toward a major in Sociology. A sociological analysis of aspects of contemporary social problems such as race relations, crime, mental illness, poverty, and aging, etc. *Fall and spring*. Staff.
- 53 BLACK-WHITE RELATIONS IN THE UNITED STATES (3). Institutionalized racism and the various responses of the black population to its subordination; factors tending to sustain or transform the present system. *Fall and spring*. Staff.
- 54 POPULATION PROBLEMS (3). Social and economic causes and consequences of population structure and change; illustrations from developing countries and the less developed regions or sections of the United States. *Fall and spring*. Staff.
- 55 CRIME AND DELINQUENCY (3). The nature and extent of crime and delinquency; emphasis upon contemporary theories of causation; examination of correctional programs. *Fall and spring*. Staff.
- 60 THE FIELD OF SOCIAL WORK (3). An orientation course based on the description and analysis of the historical development of social work and the operation in contemporary society of the many specialized social work services. *Fall and spring*. Fink.
- 62 FAMILY AND SOCIETY (3). (Not open to students who have had Sociology 161). Comparative analysis of kinship systems and family relations. Courtship, marriage, and parent-child relations viewed within a life cycle framework. *Fall and spring*. Staff.
- 65 THE PUBLIC SOCIAL SERVICES (3). An analysis of the social services which are offered under public auspices through city, county, state and federal agencies. *Spring*. Keith-Lucas.
- 70 INDUSTRIAL SOCIOLOGY (3). The place of sociology in the study of industrial relations. The application of social scientific principles to the analysis of social relationships in business, with special emphasis on industrial firms. *Fall and spring*. Staff.
- 75 COMMUNITY CONFLICT AND PUBLIC POLICY (3). An analysis of intergroup relations in American communities with special reference to struggles for control of public policy. *Fall and spring*. Staff.

- 80 WORK AND LEISURE (3). Study of the changing character and meaning of work and leisure in modern society, including considerations of automation, alienation, the professions, and popular culture. *Fall*. Stauffer.
- 85 RESEARCH METHODS IN SOCIOLOGY (4). Prerequisite, Sociology 51 or its equivalent. Techniques of social research, with an emphasis on survey design; attitude measurement; collection, analysis, and interpretation of data. Required of sociology majors, preferably in the junior year. Lecture plus laboratory. *Fall and spring*. Staff.
- 90 RESEARCH PLANNING (3). Open to students who plan to enroll in special summer section of Sociology 91. Supervised research planning, including background reading to delimit the area of investigation, and development of the research design, data-collection instruments, and plans for analysis. *Spring*. Jacobson.
- 91 ADVANCED RESEARCH METHODS (3). Permission of instructor. Supervised research participation, data analysis, and interpretation of results. *Summer and on demand*. Jacobson.
- 92 INDEPENDENT STUDY AND READING (3). Permission of instructor. Special reading and research in a selected field under the direction of a member of the Department. *Fall and spring*. Staff.
- 95 SEMINAR IN SOCIOLOGICAL THEORY AND SOCIAL ANALYSIS (3). Open only to, and required of, sociology majors in senior year. A study of theoretical perspectives in sociology as these relate to selected issues. Student participation is emphasized. Content of sections is guided by the uses students plan to make of their sociology background. (Honors students will register for 95A in the fall term.) *Fall and spring*. Staff.
- 96 HONORS RESEARCH (3). Required for senior honors candidates. Special research in a selected field under the direction of a member of the Department. Includes the writing of an honors thesis. *Fall and spring*. Staff.
- 102 INTRODUCTION TO SOCIAL PSYCHOLOGY (3). Prerequisites, Sociology 51 or permission of instructor. Examination of social behavior from various points of view, stressing interpersonal relations and representative methods of observation, experiment, and analysis. No credit for students who have had Psychology 133. *Fall and spring*. Staff.
- 103 INFORMATION SYSTEMS IN HUMANISTIC AND SOCIAL SCIENCE RESEARCH (Information Science 103) (Library Science 103) (3). (See Information Science 103 for description.) *Spring*. Staff.
- 105 SOCIOLOGY OF SCIENCE (3). Prerequisite, Sociology 51 or 151. The social roles of science in relation to other institutions, technology, and general social change; and enculturation, information-flow, creativity, decision-making, administration and leadership within the scientific community. (Not offered 1970-1971.)
- 107 PHILOSOPHY, HISTORY AND THE SOCIAL SCIENCES (Philosophy 107) (3). Prerequisites, two courses in philosophy, psychology, or sociology. (See Philosophy 107 for description.) *Fall*. Zaffron.
- 120 SOCIAL STRATIFICATION (3). Prerequisite, Sociology 51. Analysis of social structure and stratification in terms of class, status, prestige,

rank, and function. Attention is given to the social role of the elite, bureaucracies, and professional and middle classes. *Fall*. Artis.

- 121 CULTURE AND PERSONALITY (Anthropology 121) (3). (See Anthropology 121 for description.) *Fall*. Daniels.
- 122 CULTURAL ANTHROPOLOGY (Anthropology 122) (Folklore 122) (3). (See Anthropology 122 for description.) *Fall*. McEvoy.
- 127 INTERNATIONAL STRATIFICATION (3). Prerequisites, Sociology 120 and major in one of the Social Sciences or History. Exploration of the institutional bases of superordinate-subordinate relations across nation-state boundaries. Topics include imperialism, colonialism, colonization, and various responses to these phenomena. *Fall*. (Not offered in 1970-1971.) Staff.
- 128 SOCIAL PROCESS IN EDUCATION (3). Examines social influences e.g., community, school, family, peers) affecting academic performance and attitudes, with particular emphasis on the disadvantaged and the dropout. *Spring*. Wiggins.
- 134 COLLECTIVE BEHAVIOR AND SOCIAL MOVEMENTS (Psychology 134) (3). Prerequisites, Sociology 51 or Sociology 102/Psychology 133 or permission of instructor. Studies social behavior breaking with existing patterns and expectations such as riots, crowds, revolutions and social movements. Explanation and prediction uses same principles that govern human behavior in general. *Fall and spring*. Staff.
- 135 WORKING CLASS AND PEASANT MOVEMENTS (3). The comparative study of the development of movements of urban workers and peasants, focusing on the conditions facilitating and inhibiting their growth; determinants of their goals and structure and of their effectiveness. *Spring*. Landsberger.
- 136 COMPARATIVE SOCIAL ORGANIZATION (Anthropology 136) (3). See Anthropology 136 for description.) *Spring*. Crane.
- 145 SOCIAL CHANGE IN LATIN AMERICA (3). Introduction to Latin American ideologies and values; economic and demographic changes; major pressure groups (old elites, entrepreneurs, peasants and working classes, military and intellectuals); and relations with the United States. *Spring*. Landsberger.
- 148 THE STATE AND SOCIETY (3). Prerequisites, major in one of the social sciences and either Sociology 51 or Political Science 41. Analysis of the reciprocal influences of state and social organization upon each other; the social bases of political authority and stability, of revolution and counter-revolution. *Spring*. Staff.
- 151 CONTEMPORARY SOCIETY (3). Open to juniors, seniors, and non-departmental graduate students who have not taken introductory sociology. Equivalent to Sociology 51 in satisfying prerequisites for other sociology courses and in meeting General College requirements. An introduction to basic sociological concepts and their application to the study of modern society. *Fall and spring*. Staff.
- 154 LITERATURE AND SOCIETY (3). An examination of selected modern literary works as social process and aesthetic object. Topics discussed will include literary creativity, the writer's social role, and social psychological approaches to the contents of literature. *Fall*. R. Wilson.

- 155 EDUCATIONAL INSTITUTIONS (3). Sociology 51 or permission of instructor. A study of theory and research on the educational institution, with emphasis upon the multiple and changing functions of formal education in industrial societies. *Fall*. Eckland.
- 159 SOCIOLOGY OF HEALTH & ILLNESS (3). A sociological analysis of (1) the social processes affecting conditions of health and disease and (2) the cluster of social relationships and organizations that comprise the institution of medicine. Smith.
- 161 FAMILY STRUCTURE AND PROCESS (3). Sociology 51 or permission of instructor. Description and analysis of the family and its interrelations with other institutions. Open only to undergraduates who have not had Sociology 62 and graduate students not majoring in Sociology. *Fall and spring*. Staff.
- 162 SOCIALIZATION AND PERSONALITY (3). Prerequisite, Sociology 51 or permission of instructor. Examines the generic process by which human organism, becomes a member of society. Topics include conceptions of socialization, language and thought processes, and development of the self. *Fall*. Elder.
- 163 RACE, POVERTY AND POLITICS (Political Science 171) (3). Analysis of cause and consequences of economic and racial inequality. A focus on the relationship between power and conflicts over public policy. *Fall and spring*. Staff.
- 165 COMMUNICATION AND OPINION (Journalism 165) (Speech 165) (Psychology 165) (3). (See Journalism 165 for description.) *Fall and spring*. Staff.
- 166 THE SOCIOLOGY OF LANGUAGE (3). Introduction to theory, research problems and methods in sociolinguistics and computational sociolinguistics, prefaced by a review of studies of the functions of language in society. (Not offered in 1970-1971.) Sedelow.
- 168 THE CITY AND URBANIZATION (3). Prerequisite, Sociology 51 or permission of instructor. The city as a social phenomenon in the modern world. Analysis of urban trends, characteristics, functions, and social organization. Distinction is made in the study of the city as a dependent variable and as a setting for social behavior. *Fall and spring*. Staff.
- 169 INDUSTRIALIZATION & MODERNIZATION (3). Prerequisite, Sociology 51. Development of the industrial community since the Industrial Revolution; effect of changing conditions and differences in surrounding society; paternalism, labor laws, economic and labor problems as they affect the industrial community. *Fall*. Staff.
- 170 RELIGION AND SOCIETY (Religion 170) (3). Prerequisite, Sociology 51 or permission of instructor. Sociological analysis of group beliefs and practices—both traditionally religious and secular—through which fundamental life experiences are given coherence and meaning. *Spring*. Stauffer.
- 173 COMPARATIVE MINORITY RELATIONS (3). Prerequisite, Sociology 51 or permission of instructor. A comparative analysis of dominant-minority group relations. Includes both cultural and racial minorities. (Not offered 1970-1971.)

- 175 THEORIES AND PROBLEMS OF DEVELOPING SOCIETIES (3). Theories concerning the development process (motivational vs. institutional; economic vs. political and social development; similarity of sequential stages and of outcomes) will be related to policy problems facing the developing nations. *Spring*. Landsberger.
- 181 REGIONAL SOCIOLOGY OF THE SOUTH (3). A sociological analysis of the southern region of the United States. Emphasis on facts, factors, and policies pertaining to geography, population, and culture; resources and waste; social institutions and planning. *Spring*. Reed.
- 186 POPULATION (3). Prerequisite, Sociology 51. A study of problems of quality and quantity of population including theories of population increase and problems of composition, distribution, differential fertility, population pressure, and internal migration. *Fall and spring*. Staff.
- 188 SMALL GROUPS (Psychology 188) (3). (See Psychology 188 for description.) *To be arranged*. Staff.
- 192 SEMINAR IN POPULATION AND URBAN STUDIES (3). Prerequisite, permission of instructor. In-depth analysis of selected topics such as community structure, "over-urbanization", fertility differentials, and labor force. Staff.
- 193 SEMINAR IN SOCIAL ORGANIZATION (3). Prerequisite, permission of instructor. In-depth analysis of selected topics in the field of social organization. Staff.
- 194 SEMINAR IN INTERGROUP RELATIONS (3). Prerequisite, permission of instructor. In-depth analysis of selected topics in the field of intergroup relations. Staff.
- 196 SEMINAR IN SOCIAL PSYCHOLOGY (3). Prerequisite, permission of instructor. In-depth analysis of selected topics in the following areas: socialization and learning; attitude change and group processes; behavior modification; and the inter-play between social structure and personality. Staff.
- 199 SOCIOLOGICAL ANALYSIS: SPECIAL TOPICS (3). Examines selected topics from a sociological perspective. Course description for a particular semester is available in the Departmental office. *Fall and spring*. Staff.

SPEECH

(See English)

DEPARTMENT OF STATISTICS

GEORGE EDWARD NICHOLSON, JR., *Chairman*

The undergraduate degree in statistics is intended for those who have a serious interest in statistics and who would like to study the subject in sufficient detail to be able to compete successfully in the many important tasks for which well-trained undergraduate statisticians are needed in today's world. In order to satisfy requirements for this degree, a student should have an ability to handle mathematics through the level of ad-

vanced calculus and an interest in some subject in which statistics is applied.

The undergraduate program in statistics leads to the degree Bachelor of Science in Mathematical Sciences. Prospective majors should include in their General College program French, German, or Russian 3, 4, and one course beyond 4 (or 1, 2, 3, 4); Mathematics 31, 32, 33, 34; Computer and Information Science 16; and Physics 26, 27 (or 24, 25). In the College of Arts and Sciences the following courses are required: Statistics 126, 127, 102, and three additional statistics courses; Mathematics 121, 122, 147, and one other mathematics course; four courses outside the Division of Natural Sciences; and a sufficient number of electives to meet graduation requirements.

The offerings of the Department of Statistics include a variety of courses of potential value to students majoring in other disciplines. Statistics 100 is intended for students desiring a single basic course. Substantial coverage of the methods of applied statistical analysis is given by Statistics 101 and 102. Introduction to probability theory is provided by Statistics 126. The basic theory of statistical inference is given by Statistics 127 and 128. Introduction to probability and statistical inference theory is treated from a more advanced mathematical viewpoint in Statistics 134 and 135; these courses are prerequisite to courses in advanced theory.

- 11 BASIC CONCEPTS OF STATISTICS I (3). No prerequisite. Basic concepts and techniques of mathematical statistics. Probability models and sampling distributions. Inferences, predictions, and decision-making from data. Use of computers for statistical purposes.
- 12 BASIC CONCEPTS OF STATISTICS II. (3). Prerequisite, Statistics 11. An introduction to statistical inference and the analysis of data from random experiments, including the use of computers in statistical analysis.
- 100 PRINCIPLES OF STATISTICAL INFERENCE (Planning 100, Genetics 100, Linguistics 100) (3). Prerequisite, college algebra. Fundamental concepts of modern statistics. For students who plan to conduct research, use research results or make decisions from data. Emphasis on principles and methods. *Fall*. Nicholson.
- 101 ELEMENTS OF PROBABILITY AND STATISTICAL INFERENCE (3). Prerequisite, integral calculus. Fundamentals of probability theory; descriptive statistics; fundamentals of statistical inference, including estimation and hypothesis testing. *Fall and spring*. Cleveland.
- 102 ELEMENTS OF STATISTICAL ANALYSIS II (3). Prerequisite, Statistics 101. Various topics in statistical methods; regression; analysis of simple experimental designs; data analysis; Bayesian statistics; nonparametric statistics. *Spring*. W. K. Smith, Wegman.
- 103 DESIGN AND ANALYSIS OF EXPERIMENTS (3). Prerequisite, Statistics 101. Method in planning, design, and analysis of experiments. *Spring*. K. J. C. Smith.

- 111 METHODS OF MATHEMATICAL STATISTICS I (3). Prerequisite, advanced calculus. Introductory treatment of special mathematical techniques of particular importance in probability and statistics. Fourier and Laplace transforms, contour integration, special inequalities, finite differences. *Fall*. Baker.
- 112 METHODS OF MATHEMATICAL STATISTICS II (3). Prerequisite, advanced calculus. Measure and integration theory, with special reference to random variables, distribution functions, probability measures. Special topics in matrix theory. *Fall*. Leadbetter.
- 126 INTRODUCTION TO PROBABILITY (Mathematics 146) (3). Prerequisite, integral calculus. Introduction to mathematical theory of probability covering random variables, moments, binomial, Poisson, normal and related distributions, generating functions, sums and sequences of random variables, combinatorial and statistical applications. *Fall and spring*. David, Kelly.
- 127 MATHEMATICAL STATISTICS I (3). Prerequisite, Statistics 126 or equivalent. Functions of random samples and their probability distributions; introductory theory of point and interval estimation, and of hypothesis testing; elementary decision theory; correlation and regression. *Fall and spring*. Kelly, Shachtman.
- 128 ANALYSIS OF VARIANCE (3). Prerequisite, Statistics 127. Theory of linear models and analysis of variance. *Fall*. Dowling.
- 129 INTRODUCTION TO STOCHASTIC PROCESSES (3). Prerequisites, Statistics 126. Elementary theory and application of random process models; recurrent events, random walks. Markov chains. Poisson processes, birth-and-death processes, queueing processes. *Fall and spring*. Shachtman, W. K. Smith.
- 132 INTERMEDIATE PROBABILITY (3). Prerequisite, Statistics 126 or 134. Foundations of probability. Basic classical theorems. Modes of probabilistic convergence. Laws of large numbers. Central limit problem. Moments, generating functions, characteristic functions. Stochastic processes. *Spring*. Leadbetter.
- 133 INTRODUCTION TO TIME SERIES ANALYSIS (3). Prerequisite, Statistics 126 and 127. The use of particular models (such as moving averages, autoregressive schemes) for analyzing time series data. Stationarity. Spectral analysis with emphasis on computational procedures. *Fall and spring*. Wegman, Cleveland.
- 134 INTERMEDIATE STATISTICAL THEORY I (6). Prerequisite, two semesters of advanced calculus. Fundamentals of probability and distribution theory including: axiomatic treatment of probability, independence, random variables, regression theory, convergence and approximation, common distributions. Four lecture and two laboratory hours a week. *Fall*. Simons.
- 135 INTERMEDIATE STATISTICAL THEORY II (3). Prerequisite, Statistics 126 or 134. Fundamentals of statistical inference including: sufficient statistics, point estimation, hypothesis testing, chi-square tests. Linear estimation, analysis of variance and regression are largely excluded (see Statistics 150). *Spring*. Simons.

- 140 INTRODUCTION TO STATISTICAL COMMUNICATION THEORY (4). Prerequisites, Statistics 111 and 132, linear algebra. Corequisite, Statistics 112. Systems theory, including impulse response, transfer function, state variables. Signal representations. Linear operators in Hilbert space. Random process theory, including spectral theory and covariance operators. Introduction to prediction and filtering. *Fall*. Baker.
- 150 ANALYSIS OF VARIANCE WITH APPLICATION TO EXPERIMENTAL DESIGNS (3). Corequisite, Statistics 135. Linear estimation. Gauss-Markoff theorem. Sums of squares. Analysis of variance and generalized t and F tests. Intrablock analysis of incomplete block designs. Balanced, lattice and Latin square design. *Spring*. Chakravarti.
- 156 COMBINATORIAL MATHEMATICS (Mathematics 148) (3). Prerequisites, Mathematics 135 or 136, Mathematics 121 or permission of the instructor. Topics chosen from: Generating functions. Polya's theory of counting, partial orderings and incidence algebras, principle of inclusion-exclusion, Mobius inversion, combinatorial problems in physics and other branches of science. *Fall*. Kelly.
- 158 INTRODUCTION TO GRAPH THEORY (Mathematics 149) (3). Prerequisite, linear algebra. Basic concepts of directed and undirected graphs. Partitions and distances in graphs. Planar and nonplanar graphs. Matrix representations. Network flows. Applications of graph theory. *Spring*. Dowling.
- 170 ORDER STATISTICS (3). Prerequisite, Statistics 135. Distributions and moments of order statistics. Estimation location and scale parameters, censoring. Short-cut tests. Detection of outliers. Multiple decision procedures based on order statistics. Nonparametric confidence intervals and tolerance regions. Extreme-value theory. (1969-1970 and alternative years.) *Spring*. David.
- 171 INTRODUCTION TO NONPARAMETRIC STATISTICS (Biostatistics 228) (3). Prerequisites, Statistics 102, and basic courses in statistical theory. Sign test, rank sum tests, rank correlation methods, order statistics, Kolmogorov-Smirnov goodness-of-fit tests, Fisher-Pitman randomization theory, k-sample tests, method of paired comparisons, power and asymptotic relative efficiency. *Fall*. David.
- 180 STOCHASTIC METHODS OF OPERATIONS RESEARCH (3). Prerequisites, introductory course in probability, integral calculus. Queuing theory (Markov models, birth and death, busy-period distribution), decision making under uncertainty (Bayesian, admissible and minimax decision rules), game theory (minimax theorem), Monte Carlo and other simulation techniques, inventory models. Typical texts: Cox and Smith, *Queues*; Lingren, *Statistical Theory*; Naylor et al, *Computer Simulation Techniques*.
- 181 DETERMINISTIC METHODS OF OPERATIONS RESEARCH (3). Prerequisite, matrix algebra, integral calculus. An introduction to linear and non-linear optimization models, including linear and dynamic programming, selected elements of nonlinear programming such as Kuhn-Tucker theory, and topics in network analysis. Applications to decision problems. Typical text: Wagner, Harvey, *Principles of Operations Research and managerial Decisions*.

DEPARTMENT OF ZOOLOGYALAN ERNEST STIVEN, *Chairman*

Students who intend to major in zoology should plan to complete the prerequisite course, Zoology 11 (or Biology 21-22), not later than the first semester of the sophomore year and should select Chemistry 11, 11L and 21, 21L as the other two General College sciences. Either French or German should be elected in the General College if a language is taken.

Bachelor of Arts in Zoology

For the A.B. in Zoology, at least eighteen upper-division (junior-senior level) courses are required, and these must be distributed as follows:

1. Six to eight courses in zoology, of which at least five must be laboratory courses and which must include at least one course from each of the following groups: (a) Zoology 41, 103; (b) Zoology 104, 105, 115 and 115L; (c) Zoology 106, 108 and 108L, 113 and 113L; (d) Zoology 117 and 117L, 120 and 120L, 121. The remaining courses for the major may be selected freely from zoology courses numbered below 200.
2. Six or seven approved electives in allied departments within the Division of Natural Sciences, which must include Botany 11, or Biology 21-22, two courses in physics (24-25 or equivalent); 8 semester hours in organic chemistry (61, 62, 41, 41L or equivalent), which should be taken by the end of the junior year; the remaining courses may be lected freely; the election of Mathematics 31 and 32 is recommended.
3. Six or seven approved electives chosen from departments in the College of Arts and Sciences outside the Division of Natural Sciences. The election of French and/or German is strongly recommended.

Bachelor of Science in Zoology

The B.S. degree is designed for students who wish to make the most effective use of undergraduate years as preparation for graduate study in the biological or health related sciences.

The B.S. program requires Mathematics 32, additional analytical chemistry and two semesters of French or German (or the substitution of one research skill, mathematics, statistics, or Computer and Information Science, for one language) in addition

to all requirements for the B.A. degree outlined above. The B.S. curriculum requires:

FRESHMAN YEAR

Mathematics 15 and 31
Chemistry 11, 11L and 21, 21L
English 1 and 2
French or German 3 and 4
Social Science Electives (2)

JUNIOR YEAR

3 Zoology electives¹
Chemistry 41, 41L, 42, 42L
Botany 11
1 Non-science electives²
French 14 and 15, or German 1 and 2³

SOPHOMORE YEAR

Zoology 11 and Zoology elective¹
Chemistry 61, 62
Physics 24 and 25
Mathematics 32
Humanities-Fine Arts elective
Social Science elective
French or German 21

SENIOR YEAR

2 Zoology electives¹
2 Allied science electives⁴
2 Free sciences electives^{1,4}
3 Non-science electives²

Students who plan to undertake graduate study and who have a *B* average or better are encouraged to apply for the following undergraduate programs designed to prepare and accelerate progress toward advanced degrees: B.A. degree in Zoology with a double major in either botany, chemistry, mathematics or physics (see page 42); B.A. degree in Zoology with Honors or Highest Honors (see page 49). Note that candidates for these programs in the junior year must secure approval from a departmental faculty adviser, and must register for honors with a departmental faculty honors director before the registration period for the senior year.

Students who plan to teach in public high schools should read the statement under the School of Education. See there also the requirements for the B.S. degree in Science Teaching, and the courses in Directed Teaching in High School Science and in Materials and Methods in Teaching High School Science.

Special courses and the direction of graduate studies in marine science may be offered by members of the staff of the Institute of Marine Sciences. Interested students may consult the departmental adviser concerning this program.

(NOTE: Zoology 11, or Biology 20-21, or their equivalent is prerequisite to all other courses in this department.)

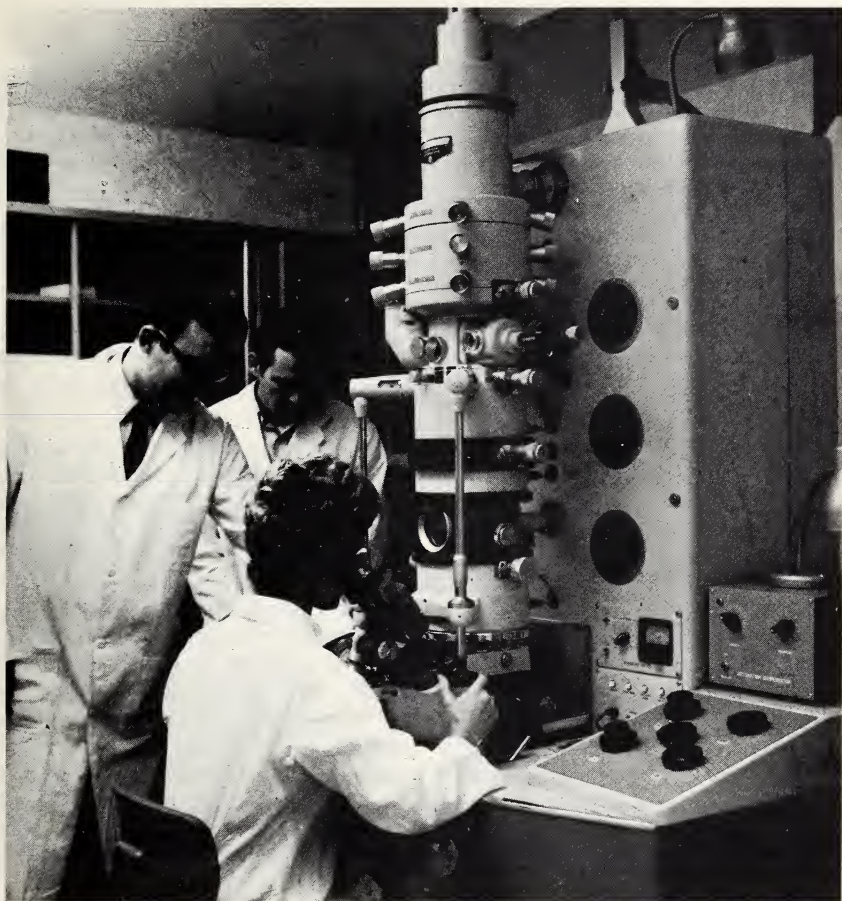
- 10 BIOLOGY AND MAN (3). No prerequisite. Especially for non-biology majors. The course will consider the relevance of molecular, cellular, genetic, developmental, morphological, and environmental biology to man. *Three lecture hours per week, fall and spring.* Staff.

1. Zoology courses numbered below 200 to include: 41 or 103, 104 or 105 or 115 and 115L, 106 or 108 and 108L or 113 and 113L, 117 and 117L or 120 and 120L or 121; others may be elected freely.

2. Recommended are: English 33, History 151, Philosophy 21 or 108, or additional language and humanities.

3. Whichever language was not taken in General College.

4. Recommended are: Zoology 107 and 107L, additional Botany, Chemistry 183, Physics 54, Statistics 100 or 101, Geology 42, Psychology 26, Computer and Information Science 18.



- 11 **PRINCIPLES OF GENERAL ZOOLOGY (4).** No prerequisite. Open to freshman. Prerequisite to all other courses in zoology. Principles, problems, and experimental methods of animal biology; basic similarities of all living organisms; organ systems and their physiology; embryology, genetics, organic evolution, ecology; survey of the major animal phyla. *Three lecture and three laboratory hours a week, fall and spring.* Staff.
- 20 **CURRENT CRISES IN HUMAN SURVIVAL (3).** No prerequisites. Designed especially for freshman and sophomores. Introduction to the biological, ecologist, and sociological problems of man's survival. *Three lecture hours per week, spring.* (1970-1971 and alternate years). Staff.
- 41 **INTRODUCTORY VERTEBRATE ZOOLOGY (4).** Prerequisite, Zoology 11. Especially designed for premedical, pre dental, and pharmacy students. Fundamentals of vertebrate anatomy, physiology, histology, embryology, classification, and homology. *Three lecture and three laboratory hours a week, fall and spring.* Mueller, Terry.

- 78 ANIMAL EVOLUTION (3). Prerequisite, Zoology 11. Organic evolution as the unifying biological concept; historical development; nature of evidence; Darwinian and neo-Darwinian concepts; theories of mechanism. (On occasion.) *Three lecture and demonstration hours a week, spring.* H. E. Lehman.
- 94 SPECIAL TOPICS (1 to 3). Permission of instructor. Directed readings on a selected biological topic. A final written or oral report will be required. *Fall and spring.* Staff.
- 99a COURSE FOR HONORS (3 each). Prerequisite, approval by staff hon-
99b ors director. Reading, original research, and the preparation of an essay under the direction of a departmental adviser. Required of all candidates for honors in the senior year. Terry; staff.
- 100 TOPICS IN CELL BIOLOGY (4). Prerequisite, Zoology 11 or equivalent. Especially designed for secondary high school teachers of biology; not open to others except by special permission. Molecules, cells, and tissues from the standpoint of morphology, metabolism, replication, gene activity, growth and development. *Three lecture and three laboratory hours a week, fall.* Staff.
- 101 TOPICS IN ORGANISMAL AND ENVIRONMENTAL BIOLOGY (4). Prerequisite, Zoology 11 or equivalent. Especially designed for secondary high school teachers of biology; not open to others except by special permission. Organismal development and physiology, patterns of species diversity, adaptation, ecological systems, evolution. *Three lecture and three laboratory and field trip hours a week, spring.* Staff.
- 103 COMPARATIVE VERTEBRATE ANATOMY (4). Prerequisite, Zoology 11. Lectures on the structure and evolutionary history of the chief organ systems of vertebrates. Dissections of amphioxus, petromyzon, dogfish head, necturus, and cat. *Two lecture and six laboratory hours a week, fall.* Engels.
- 104 VERTEBRATE EMBRYOLOGY (4). Prerequisite, Zoology 11. Special study of fertilization, cleavage, germ-layer formation, organogenesis, and extraembryonic membranes, using frog, chick, and pig. *Three lecture and four laboratory hours a week, fall and spring.* H. E. Lehman, Terry.
- 105 VERTEBRATE HISTOLOGY AND MICROTECHNIQUE (4). Prerequisite, Zoology 11 and permission of the instructor. The preparation of selected tissues and organs for microscopic examination; study of these to acquaint the student with the essentials of histology. *One lecture and six laboratory hours a week, spring.* Costello.
- 106 GENERAL INVERTEBRATE ZOOLOGY (5). Prerequisite, Zoology 11. The biology invertebrate animals with special reference to structure, function, classification, and ecology. *Three lecture and six laboratory hours a week, fall.* Jenner.
- 107 BIOCHEMISTRY FOR STUDENTS OF BIOLOGY AND CHEMISTRY (Biochemistry 100) (3). Prerequisites, one course in Biology; Chemistry 11, 21 (Chemistry 43 recommended); Chemistry 61, 62. Lectures on the chemistry and metabolism of carbohydrates, lipids, amino acids, proteins and nucleic acids; elementary enzyme kinetics; biochemical genetics; regulatory mechanisms; bioenergetics. *Three lecture hours a week, spring.* Jones.

- 107L BIOCHEMISTRY LABORATORY (Biochemistry 100L) (1). Prerequisite or corequisite, Zoology 107. Laboratory for Zoology 107. *Three laboratory hours a week, spring.* Jones.
- 108 ECOLOGY (Biology 102, Botany 141) (3). Prerequisites, Zoology 11 or Botany 11, or Biology 21, 22. A study of the principles governing the environmental interrelationships of organisms, populations, communities, and ecosystems. *Three lecture hours a week, fall and spring.* Stiven, Leith, McCormick (Dept. of Botany).
- 108L ECOLOGY LABORATORY (Botany 102L, Botany 141L) (1). Prerequisite or corequisite, Zoology 108. Laboratory and field studies of ecology. *Three laboratory hours a week, fall and spring.* Zoology 108 staff.
- 109 INTRODUCTION TO HYDROBIOLOGY (4). Prerequisites, Zoology 106 and 108, or permission of the instructor. A study of the biology of aquatic organisms. (1968-1969 and alternate years.) *Two lecture and six laboratory and field hours a week, spring.* Jenner.
- 110 GENERAL PARASITOLOGY (4). Prerequisites, Zoology 11 and 106. A comparative study of structure, life cycles, and classification of parasites of invertebrates and vertebrates and laboratory methods for the collection, culture, and microscope preparation of parasitological materials. (1968-1969 and alternate years.) *Two lecture and four laboratory hours a week, spring.* Hendricks (of the School of Public Health).
- 112 VERTEBRATE FIELD ZOOLOGY (4). Prerequisite, Zoology 11. An introduction to the natural history of vertebrates. Lectures on selected topics. Laboratory and field exercises on the identification, habits, and local distribution of amphibians, reptiles, birds, mammals. *Two lecture and six laboratory and field hours a week.* Engels.
- 113 ANIMAL BEHAVIOR (3). Prerequisite, Zoology 11 or permission of instructor. An introduction to animal behavior, with emphasis on the animal's relationship to the environment, the ontogeny of behavior, and the physiological bases of behavior. *Three lecture and three laboratory hours a week, fall.* Mueller.
- 113L ANIMAL BEHAVIOR LABORATORY (1). Corequisite, Zoology 113. Techniques of observation and experiment in animal behavior. *Three laboratory hours a week, fall.* Mueller.
- 115 CELL BIOLOGY (Biology 90) (3). Prerequisites, introductory biological science course, Chemistry 11, 12, or permission of instructor. Cell structure in relation to function. Cytology, biochemistry and physiology of animal, plant and bacterial cells and their viruses. The cell in division and development. *Three lecture hours a week, fall and spring.* Misch; Edgell (Department of Bacteriology).
- 115L CELL BIOLOGY LABORATORY (Biology 90L) (1). Corequisite, Biology 90. Limited to Biology majors except by permission of instructor. Contemporary methods for the analysis of cell structure, function and contents are illustrated by laboratory exercises and demonstrations. *Three laboratory hours a week, fall and spring.* Zoology 115 staff.
- 117 GENETICS (Biology 101) (3). Prerequisite Bacteriology 51 or Biology 21 and 22, or Botany 11 or Zoology 11, or permission of the instructor. An introduction to the principles of inheritance. Molecular aspects of gene action, Mendelian laws of transmission, the role of genes in de-

velopment, the genetics of populations. *Three lecture hours a week, fall and spring.* Lucchesi, Whittinghill; Barry (of Department of Botany); Hutchison (of Department of Bacteriology).

- 117L GENETICS LABORATORY (Biology 101L) (1) Corequisite, Biology 101, or permission of instructor. The principles of inheritance are illustrated by experiments with viruses, bacteria, fungi, and higher plants and animals. *Four laboratory hours a week, fall and spring.* Zoology 117 staff.
- 120 COMPARATIVE PHYSIOLOGY (3). Prerequisites, Zoology 11; Chemistry 61, prerequisite or corequisite. The comparative physiology of respiration, digestion, excretion, osmotic and ionic regulations, coordination, reception and movement. *Three lecture hours a week, fall.* Hagadorn.
- 120L COMPARATIVE PHYSIOLOGY LABORATORY (2). Corequisite, Zoology 120. Laboratory studies of comparative physiology. *Six laboratory hours a week, fall.* Hagadorn.
- 121 INTRODUCTION TO CELL PHYSIOLOGY (5). Prerequisites, Zoology 11; Chemistry 61, prerequisite or corequisite. Cell and protoplasmic functions as expressed in physical and chemical properties of cells; with laboratory emphasis on cellular metabolism, active transport, and quantitative evidence of cell activity. *Two lecture and six laboratory hours a week, spring.* Humm; assistants.
- 122 HUMAN GENETICS (3). Prerequisite, Zoology 11. A study of biological inheritance in man. Effects of mutation, selection, migration, and racial mixture; applications of genetics to medico-legal questions. *Three lecture hours a week, fall.* Whittinghill.
- 126 OCEANOGRAPHY (3). Prerequisites, Zoology 11 or Botany 11, and Chemistry 21 and Physics 25, or permission of the instructor. A study of the seas and their processes. *Three lecture hours a week, fall.* Staff.
- 130 BIOLOGY OF INSECTS (3). Prerequisite, Zoology 11. Study of insect biology, with emphasis on physiology, ecology, and behavior. *Three lecture, discussion, and demonstration hours a week, spring.* McMahan.
- 140s BIOLOGICAL OCEANOGRAPHY (6). Prerequisites, Zoology 106 and 108, or permission of instructors. Physical, chemical and biological factors characterizing estuarine and marine environments emphasizing factors controlling plant and animal populations including methods of analysis, sampling, and identification. *Five lecture and 25 or more laboratory hours a week, first summer term.* (Offered at Morehead City, N. C.) Staff of Institute of Marine Sciences.
- 141s SPECIAL PROBLEMS IN MARINE BIOLOGY (6). Prerequisite, Zoology 140s and/or permission of instructors. Comprehensive surveys of problems and laboratory methods in any one of the following areas: Marine Mollusca (Chestnut), marine Crustacea (Williams), marine Vertebrata (Deubler, Fahy), marine ecology (Woods). *Thirty or more conference and laboratory hours a week, second summer term.* (Offered on demand at Morehead City, N. C.) Staff of the Institute of Marine Sciences.
- 146 MARINE ECOLOGY (4). Prerequisites, Zoology 106 and 108, or permission of instructor. An introductory study of oceanography as it pertains to the ecology of marine organisms; consideration of biological

productivity and fisheries problems. (1969-1970 and alternate years.) *Three lecture and three laboratory hours a week, and two two-day field trips to the coast, spring.* Riedl.

- 154 EXPERIMENTAL VERTEBRATE EMBRYOLOGY (3). Prerequisite, Zoology 104. Survey of problems of vertebrate development relating to nucleocytoplasmic interactions, embryonic determination, organogenesis, differentiation and regeneration. *Three lecture, discussion and seminar hours a week, spring.* H. E. Lehman.
- 156 ADVANCED MARINE INVERTEBRATE ZOOLOGY (4). Prerequisite, Zoology 106, and permission of instructor. Biological aspects of selected groups of marine invertebrates (especially of North Carolina coast) with assistance of visiting specialists. Content will change in each offering and course may be repeated with credit. *Two lecture and four laboratory hours a week, with two weekend field trips to the North Carolina coast, and one three-day cruise aboard the RV Eastward; in the spring recess one field trip to the Florida keys; fall and spring.* Jenner, Riedl; visiting staff.
- The genetic control of gametogenesis, fertilization, and the molecular basis for gene expression during development. *Three lecture hours a week, spring.* Lucchesi.
- 164 MOLECULAR BIOLOGY (3). Prerequisites, Zoology 120 or 121; Chemistry 61, prerequisite or corequisite. The nature, production and replication of biological compounds and their relation to structure and function in development. *Three lecture hours a week, spring.* Stafford.
- 165 MOLECULAR GENETICS (3). Prerequisite, a genetics course; Zoology 164 also recommended. The genetics of prokaryotes and model systems for understanding the duplication, transcription, repair, mutagenesis and coding of nucleic acids. (1970-71 and alternate years). *Three lecture hours a week, fall.* Bleyman.
- 170s ELECTRON MICROSCOPY (4). Permission of instructor. Introduction to ultrastructure and optical basis of microscopy. Basic methods for the preparation of biological materials for ultrastructural studies. *Four and one half lecture and fifteen laboratory hours a week, first summer session.* Misch.

SOURCES OF INFORMATION FOR THE INDIVIDUAL STUDENT

Academic Matters (Course Registration, Course Changes, Withdrawals, Absences, Grades, etc.): The student's Academic Dean,

The General College: Associate Dean John Kendall Nelson

The College of Arts and Sciences: Associate Dean Frank M. Duffey

The School of Business Administration: Associate Dean Claude George

The School of Education: Dean Norton Lewis Beach

The School of Journalism: Dean John Berry Adams

The School of Nursing: Dean Lucy H. Conant

The School of Pharmacy: Dean George Philip Hager

Activities and Organizations: The Dean of Men, 01 Steele and the Dean of Women, 01 Steele

Admissions: The Director of Undergraduate Admissions, 101 Vance Hall

Fraternities: The Dean of Men, 01 Steele

Sororities: The Dean of Women, 01 Steele

Eligibility of a Student Presently Enrolled: The Student's Dean

Student Aid (jobs, loans, scholarships): The Director of Student Aid, 300 Vance Hall

Former Students: The Secretary, Alumni Association, Carolina Inn

Athletics: The Coach of the Sport Concerned

Graduation Requirements: The Student's Academic Dean

Housing: (Men and Women) The Director of Housing, Bynum Hall

Medical Attention: The Student Infirmary—University Physicians

ROTC: The Professor of Naval Science or the Professor of Air Science, Naval or Air Force Armory

Transcripts or Records: The Office of Records and Registration, 105 Hanes Hall

Transfer Credits: The Director of Undergraduate Admissions, 101 Vance Hall

Undergraduate Readmission: Director of Undergraduate Admissions, 101 Vance Hall

ABBREVIATIONS OF NAMES OF CLASSROOM BUILDINGS
(as used on students' class-admission tickets)

AF	AFROTC	MD	Library
AB	Abernathy Hall	MA	Medical Building
AC	Ackland	MI	Manning
AL	Alumni	LI	Miller
AR	Armory	MT	Mitchell
BE	Beard Hall	MU	Murphey
BI	Bingham	NA	Naval Armory
BY	Bynum	NH	Nash Hall
CA	Caldwell	NE	New East
CO	Coker	NX	New East Annex
CX	Caldwell Annex	NW	New West
CR	Carroll	NU	Nursing Bldg.
DA	Davie	PE	Peabody
DE	Dey	PS	Person Hall
DN	Dental Building	PH	Phillips
FF	Fetzer Field	PL	Public Health
GA	Gardner	PT	Playmakers Theater
GR	Gerrard Hall	SA	Saunders
HA	Hanes	SW	Swain Hall
HI	Hill	VE	Venable
HO	Howell	WI	Wilson
HP	Hospital	WG	Woollen Gym
KN	Knapp	WO	Women's Gym

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