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The BULLETIN *of*

THE AGRICULTURAL *and* TECHNICAL COLLEGE OF NORTH CAROLINA

ISSUED QUARTERLY

GREENSBORO, NORTH CAROLINA

CALENDAR 1956-1957

ENTERED AS SECOND-CLASS MATTER, JULY 2ND, 1909, AT THE POST OFFICE AT GREENSBORO, N. C., UNDER THE ACT OF JULY 16TH, 1894.

Vol. 47 May, 1956 No. 2

The BULLETIN *of*

THE AGRICULTURAL *and* TECHNICAL COLLEGE OF NORTH CAROLINA

(CO-EDUCATIONAL INSTITUTION)

SIXTY-FIRST ANNUAL CATALOGUE
1955-1956

With Announcements for 1956-1957

RECOGNIZED AS A STANDARD "A" GRADE COLLEGE BY THE NORTH CAROLINA DEPARTMENT OF EDUCATION, THE COUNCIL OF EDUCATION OF THE STATE OF PENNSYLVANIA, THE AMERICAN MEDICAL ASSOCIATION, THE SOUTHERN ASSOCIATION OF COLLEGES AND SECONDARY SCHOOLS.

GREENSBORO, NORTH CAROLINA

1956

JANUARY

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COLLEGE CALENDAR

1956-1957

September 5—Faculty Members Report
September 6-7—Pre-Session Faculty Conference
September 9—Faculty Banquet
September 10-11—Freshman Orientation and Medical Examinations
September 12—Freshman Registration
September 13-14—Registration Upperclassmen
September 17—Classes Begin. Late Registration Fee of $5.00 will be enforced
September 24—Last day for making changes in schedules
December 3-4-5-6—Fall Quarter Examinations

Winter Quarter 1957

December 7-10—Registration
December 11—Classes Begin. Late Registration Fee of $5.00 will be enforced
December 18—Last day for making changes in schedules
March 7-8-9-11—Winter Quarter Examinations

Spring Quarter 1957

March 12-13—Registration
March 14—Classes Begin. Late Registration Fee of $5.00 will be enforced
March 21—Last day for making changes in schedules
May 29-30-31—Spring Quarter Examinations
June 1—Senior Class Day
June 2—Baccalaureate
June 3—Commencement

HOLIDAYS

Thanksgiving—November 22-23, 1956
Christmas Holidays—December 22, 1956-January 1, 1957, inclusive
Easter Holiday—March 22, 1957

SPECIAL DAYS

Founders' Day—November 2, 1956
American Education Week—November 7-11, 1956
Religious Emphasis Week—January 20-23, 1957
Negro History Week—February 10-15, 1957
Arbor Day (Special Program by School of Agriculture)—February 15, 1957
Honor's Day Convocation—March 19, 1957
National Negro Health Week—April 1-5, 1957

COLLEGE PUBLICATIONS

The Bulletin of the A. and T. College, published annually as the official catalogue of the college.

The Bulletin of the A. and T. College Summer Session, published annually as the official catalogue of the Summer School.

The Bulletin of the Graduate Division of the A. and T. College, published annually.

Annual Pictorial Issue of the Bulletin.

The A. and T. College Student Handbook, published biennially for general information and guidance of the students.

The Register, the official organ of the student body, published monthly. Edited and managed by the student body under the supervision of the College staff.

Bulletin of the A. and T. College, Non-Collegiate Trade, Vocational and Special Courses.

Alumni Newsletter, published quarterly.

Ayantee, Year Book of the Senior Class.

TABLE OF CONTENTS

(See also Index in Last Pages of Bulletin)

	Page
Board of Trustees	7
Officers of Administration and Instruction	9
History of the College	22
College Buildings	24
General Information	30
Admission to College	30
Schedule Regulations	37
Dormitory Regulations	39
General Graduation Regulations	40
Student Organizations	42
Scholarships and Prizes	47
Summer School	49
Evening School	50
Expenses and Fees	50
Institutional Organizations	59
The School of Agriculture	59
The School of Education and General Studies	63
The School of Engineering	69
The School of Nursing	71
The Graduate School	77
Description of Courses	99
Department of Agricultural Education	99
Agricultural Education	104
Department of Animal Industry	107
Department of Architectural Engineering	118
Department of Art	122
Department of Biology	127
Department of Business	133
Department of Chemistry	148
Department of Education and Psychology	153
Department of Electrical Engineering	158
Department of English	161
Department of Foreign Languages	165
Department of Home Economics	169
Department of Industrial Education	185
Department of Mathematics	196
Department of Mechanical Engineering	201
Department of Music	205
Department of Philosophy and Religion	210
Department of Physical Education	211

Page

Department of Physics 220
Department of Plant Industry 224
Research 236
Division of Air Science and Military Science and Tactics 236
Department of Social Science 241
Technical Institute 249
Officers of Instruction 250
Vocational Trade Courses 251
Auto Mechanics 251
Cabinet Making and Upholstery 253
Carpentry 255
Dry Cleaning 258
Electricity 259
Laundry Management 261
Machine Shop Practice 262
Masonry 264
Painting and Decorating 266
Photography 269
Plumbing and Steamfitting 270
Radio Repair and Basic Television 272
Sheet Metal and Roofing 274
Shoe Repairing and Leatherwork 276
Tailoring 278
Refrigeration and Air Conditioning 280
Welding 281
Related Technical Courses 283
Driver Education 283
Industrial Education 284
Enrollment by Counties 291
Enrollment by States 292
Summary of Enrollment 292

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Shelley B. Caviness, *Vice Chairman*

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George T. Ashford ..... Red Springs, N. C.
A. H. Brett ..... Winton, N. C.
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Murray Davis ..... High Point, N. C.
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*Died December 21, 1955.

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Assistant Administration Supervisor

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Assistant Maintenance Specialist
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*Died December 21, 1955.

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MRS. MINNIE MILLER BROWN, B.S., M.S.,
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MISS WILHELMINA R. LAWS, B.S.....*District Home Agent*
MRS. RUBY C. CARRAWAY, B.S.....*District Home Agent*
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WILLIAM C. COOPER, B.S., M.S.....*State 4-H Club Specialist*
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B. A. HALL, B.S.....*County Agent, Guilford County*
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HISTORY OF THE COLLEGE

The Agricultural and Technical College was established as the "A. and M. College for the Colored Race" by an act of the General Assembly of North Carolina ratified March 9, 1891. The act read in part:

> That a college of agriculture and mechanical arts be and the same is hereby established for the colored race, to be located at some eligible site within this state, to be hereafter selected by the Board of Trustees hereinafter provided for.
>
> That the leading object of the institution shall be to teach practical agriculture and the mechanic arts and such branches of learning as relate thereto, not excluding academical and classical instruction.
>
> That the management and control of the said college and the care and preservation of all its property shall be vested in a Board of Trustees, who shall be selected by the General Assembly at each term thereof consisting of nine members, one from each of the several congressional districts of the state, three of whom shall be selected for a term of two years, three for four years and three for six years, and at the expiration of the term of each class their successors shall be elected for a term of six years. Any vacancy which may occur for any cause shall be filled by the Governor for the unexpired term. That the said Board shall elect one of their number to be President of the Board of Trustees.
>
> That the said Board of Trustees shall have power to prescribe Rules for the management and preservation of good order and morals at the said college as are usually made in such institutions; shall have power to appoint its President, instructors, and as many other officers or servants as to them shall appear necessary and proper, and shall fix their salaries, and shall have charge of the disbursement of the funds and have general and entire supervision of the maintenance of the said college, . . .
>
> That for the purpose of carrying out the provisions of this act the sum of twenty-five hundred dollars is hereby annually appropriated to the said college, and the Treasurer of the State is hereby authorized and directed to pay the said amount out of any funds in the treasury not otherwise appropriated upon the warrant of the Board of Trustees or such other officer or officers as the said board may designate.

The College receives some financial aid for the payment of salaries and the purchase of apparatus and equipment from the federal government. Under the second Morrill Act of 1890 which makes available an annual appropriation for each state and territory for the further endowment and support of colleges of agricultural and mechanic arts, to be applied "only to instruction in agriculture, the mechanic arts, the English language, and the various branches of mathematics, physical,

natural, and economic sciences with special reference to their application in the industries of life and the facilities of their instruction." The act stated further:

> That no money shall be paid out under this act to any State or Territory for the support and maintenance of a college where a distinction of race or color is made in the admission of students, but the establishment and maintenance of such colleges separately for white and colored students shall be held to be a compliance with the provisions of this act if the funds received in such State or Territory be equitably divided as hereinafter set forth: *Provided,* That in any state in which there has been one college established in pursuance of the act of July second, eighteen hundred and sixty-two, and also in which an educational institution of like character has been established, or may be hereafter established, and is now aided by such State from its own revenue, for the education of colored students in agriculture and the mechanic arts, however named or styled, or whether or not it has received money heretofore under the act to which this act is an amendment, the legislature of such State may propose and report to the Secretary of the Interior a just an equitable division of the fund to be received under this act between one college for white students and one institution for colored students established as aforesaid, which shall be divided into two parts and paid accordingly, and thereupon such institution for colored students shall be entitled to the benefits of this act and subject to its provisions, as much as it would have been if it had been included under the act of eighteen hundred and sixty-two, and the fulfillment of the foregoing provisions shall be taken as a compliance with the provision in reference to separate colleges for white and colored students.

Thus, the founding of the College is a direct result of the amendment to the Morrill Act of 1862. Through the years, the appropriation from the State for instruction and general maintenance which cannot be provided for under the laws governing the use of federal funds has steadily increased.

The College holds institutional membership in the Association of Colleges and Secondary Schools, The Association of American Colleges, The American Council on Education, The Association of Land-Grant Colleges, and the North Carolina College Conference. It is approved by the American Medical Association, and the Southern Association of Colleges and Secondary Schools.

The work of the College is divided into seven major divisions or schools. These are the School of Agriculture, the School of Education and General Studies, the School of Engineering, The Technical Institute, the Summer School, the Graduate School, and the School of Nursing.

The offerings, requirements, and objectives of these schools are explained in the pages that follow. Special bulletins on the Technical Institute, the Summer School, and the Graduate School are published by the College. A copy of any one of these special bulletins may be had upon request.

THE CAMPUS AND COLLEGE BUILDINGS

In 1891, the citizens of Greensboro donated to the college fourteen acres of land off East Market Street and $11,000. This sum was supplemented by an appropriation of $10,000 from the General Assembly. Dudley Hall was completed in 1893 and the College opened in the fall of that year in Greensboro. Previously, it had operated as an annex to Shaw University in Raleigh, North Carolina. From fourteen acres, the campus has grown to more than 700 acres including the college farms. In 1946 the area known as North campus was purchased from the federal government. Instruction takes place on all campuses of the College. The present facilities offer the student adequate living and working conditions.

DUDLEY MEMORIAL BUILDING—On January 27, 1930, the original Dudley Building was destroyed by fire. The erection of the new Dudley Hall was begun immediately thereafter and on February 15, 1931 the building was completed. Dudley Hall is a fireproof structure of three stories, is larger than the old building and better suited to the needs of a growing college. The building contains classrooms, assembly rooms, offices for the President, the Registrar, the Treasurer, the Bursar, and other administrative officers.

FERDINAND D. BLUFORD LIBRARY—The library is a multistory, brick building of non-symmetrical design with limestone trim. This beautiful building was finished in the Fall of 1954 and is located in the center of the quadrangle of the main campus. It is easily accessible from all parts of the campus, and faces one of the main U. S. Highways of the State. The building was designed to accommodate 250,000 volumes, and is equipped with many modern facilities, including service elevator, electrically operated book lift, and pneumatic tubes for the efficient handling of books. In addition to the above, the building has beautifully furnished student and faculty lounges, an assembly room, and special art collection and exhibit rooms.

NORTH DORMITORY—The North Dormitory is a three-story building which contains rooms for about 70 women students.

MORRISON HALL—Morrison Hall is a fireproof, three-story building with basement. It contains rooms for 130 women students.

ANNIE W. HOLLAND HALL—Annie W. Holland Hall is a dormitory for women. It was completed in 1938 and is named in honor of Mrs. Annie W. Holland, who for a long period, was State Supervisor of Colored Elementary Schools in North Carolina. The building is fireproof and is located in one of the most beautiful sections of the campus. It contains rooms for 155 students.

VANSTORY HALL—Vanstory Hall, formerly known as the South Dormitory, is a three-story, brick building, which contains rooms for 92 students.

CROSBY HALL—Crosby Hall, one of the few remaining historic buildings on the campus, is a three-story structure. It houses on the ground floor maintenance shops and the College Post Office. The first floor houses the bookstore, and classrooms.

ALEXANDER GRAHAM HALL—The Alexander Graham Hall is a three-story fireproof structure located near U. S. Highway 70. The building was constructed in 1939 with funds appropriated by the state and the Federal Emergency Administration of Public Works. Industrial Arts, Business Education and Mathematics are housed here.

SAMUEL P. SEBASTIAN INFIRMARY—The College Infirmary is a modernly equipped building located on the main campus. There are six semi-private rooms, two isolation units, and two double wards containing a total of thirty-eight beds. Other departments are as follows: X-ray room, clinical laboratory, pharmacological laboratory, dental laboratory, first aid room, emergency treatment room, diet kitchen, and main kitchen.

The medical clinic is held twice a week—mornings and evenings. The dental clinic is held twice weekly—Tuesday morning and Thursday afternoon.

A medical fee of $12.00 per school year covers a medical examination (if the student enters school during registration periods), first aid, the medical clinical services, one dental clinic service, three days per quarter free in the Infirmary, and two issues of medicine per month. Medicine exceeding two issues per month will be $.50 per issue.

The medical fee does not cover fees for the following: laboratory services, specialists, ambulances, X-rays.

RICHARD B. HARRISON AUDITORIUM—The Richard B. Harrison Auditorium, completed in 1940, is named in honor of the noted actor and teacher who gained world renown as "De Lawd" in the great stage production of 1930, *The Green Pastures.*

MURPHY HALL—Murphy Hall is a one-story fireproof building which contains the cafeteria, the kitchen, and the refrigeration plant.

FLORENCE GARRETT PRACTICE HOUSE—The Florence Garrett Practice House is the home economics practice house. The building was named in honor of Mrs. Florence Garrett who was among the first women students to attend the College, and who bequeathed her small estate to the College as the beginning of an endowment fund.

NORTH CAMPUS—In the fall of 1946, the College was successful in purchasing the military hospital area of the local army overseas replacement depot. This plot comprises about seventy-five acres of improved land and is one block north of the main campus.

This new area has been designated as the North Campus.

The former army administration headquarters have been converted into offices for the Air and Army ROTC headquarters.

CHARLES A. HINES HALL—Charles A. Hines Hall, constructed in 1950, is named in honor of the Chairman of the Board of Trustees. It is a modern, four-story, fireproof, brick structure and houses the Department of Chemistry. It has an auditorium, with a seating capacity of 155, ten classrooms, seven student laboratories, six research laboratories, and a reading room. The building is equipped to handle courses in General Chemistry, Analytical Chemistry, Organic Chemistry, Biochemistry, and Physical Chemistry.

AUSTIN W. CURTIS HALL—The women's dormitory is a modern three-story structure with basement facilities which include a beautiful recreation room, kitchenette, beauty room, and laundry room. This building has a spacious modernistic lounge on the first floor. The building has seventy-four student rooms. A guest room is also included in this dormitory which is located in the area adjacent to Annie W. Holland Hall.

W. KERR SCOTT HALL—Scott Hall is the first of the permanent buildings erected on North Campus. Completed and furnished in 1951 at the cost of nearly $2,000,000, it is the largest building on the campus and one of the largest, and most modern buildings of its kind in the South. It contains club and recreation rooms, lounges, baggage rooms, play areas, and living quarters for 1,010 students as well as apartments for counselors and supervisory personnel.

THE PRESIDENT'S HOME, THE OAKS—The President's home, a two-story brick structure of modified Georgian architecture, was completed and occupied in 1950. It is located under a group of massive oaks on the northwestern corner of the main campus.

JULIAN PRICE HALL—The trades building was constructed in 1951 and is located on North Campus. It is a modern fireproof structure with facilities for training in auto mechanics, cabinetmaking, upholstering, carpentry, drafting, electric wiring, machine shop, masonry, photography, plumbing, radio and television servicing, sheet metal, shoe repairing, tailoring, welding, and painting and decorating.

In addition to the eighteen shops and laboratories, the building con-

tains classrooms for related instruction, a projection room, a reading room, and office of the dean of the Technical Institute.

CHARLES H. MOORE GYMNASIUM—Moore gymnasium was constructed in 1953. The main area includes two large basketball courts which can permit the playing of two basketball games at the same time. Seating facilities will accommodate more than 3,000 spectators.

The departmental office and offices of members of the department of physical education are located at the front of the building. In the rear is a large swimming pool, a combination dance, individual physical education and activity room, together with a training room, and class and varsity locker rooms.

CENTRAL HEATING PLANT—The heating plant, erected in 1952, is located on the south side of the campus on a railway siding. It contains two 30,000 pounds per hour steam boilers and the latest mechanical equipment including complete fuel and ash handling systems. The plant is designed to meet all heating needs as they arise. The plant furnishes steam and hot water to all the buildings on the campus through approximately 8,500 feet of underground tunnels.

LAUNDRY AND DRY CLEANING PLANT—The laundry and dry cleaning plant is a modern fireproof structure located near the center of the main campus. The plant is equipped to serve both the students and the faculty adequately. A complete course is offered in the latest methods of Laundry Management and Dry Cleaning.

THE COLLEGE FARMS—The College has 593 acres of farm land on which there has been developed a poultry farm, a dairy farm, a piggery, a beef cattle farm and a general farm.

The poultry farm occupies twenty acres. The buildings consist of a commercial laying house with a capacity for 1200 layers; a breeding house for 600 birds; two broiler houses with a yearly capacity of 18,000; a turkey house for 400 birds; and a general utility house with facilities for egg storage, incubation, and processing. In addition, there is an eight room duplex which houses the plant attendants. The poultry farm provides students with practical experience in egg and broiler production management, incubation, and brooding.

The dairy farm occupies a tract of 170 acres. The dairy plant consists of a seventy stanchion milking barn with feed and milk rooms attached, a calf barn, a maternity barn, a bull barn, a lounging shed, a manure pit, two silos with a gross capacity of 230 tons and a seven room duplex apartment house that accommodates the plant attendants. The Dairy Herd consists of 90 registered Jersey cattle and 6 registered Holstein.

The Piggery is being established on a 30 acre tract of land. The land has been planted in improved pasture and is fenced. Portable hog houses are used for shelter. A modern farrow house has recently been constructed.

The Abbatoir is located on the McConnell Road Farm near the Farm Superintendent's home. This building provides facilities for slaughtering and processing beef cattle, swine and sheep. It has a slaughter room, chill room, ageing room, cutting room, offal room, storage room and office.

The Beef Cattle unit, recently established, consists of 50 head of registered Aberdeen Angus and Hereford, and grade Hereford cattle. These cattle are located on a 105 acre tract of land.

The experimental sheep farm is located on a 55 acre tract of land. Presently, grazing and feeding experiments have been initiated.

The general farm operates as a service unit for the other divisions. This unit produces the hay and silage for beef cattle and dairy and maintains the pastures for all the units. All practices are performed with mechanized equipment.

D. S. COLTRANE HALL—The D. S. Coltrane Hall is a one story brick structure. This building provides office space, work room, conference room, reading room, assembly room, and storage space for the Directors of the Agricultural Extension Service and Vocational Agriculture and their staffs.

GEORGE W. CARVER HALL—George W. Carver Hall, completed in 1955, is a modern, fireproof, brick structure located on North Campus. It includes offices for the Dean of the School of Agriculture and the Agricultural staff. It houses classroom and laboratory facilities for Animal Husbandry, Agricultural Education, Agronomy, Agricultural Economics, Forestry, Floriculture, and Landscape Gardening, and Poultry. An auditorium with a seating capacity of 266 and research facilities are included in this building also.

GREGG CHERRY HALL—Cherry Hall is a three-story, L-shaped, fireproof building of contemporary design. The building, brick with limestone trim, was completed in 1954, and contains classrooms and laboratories for engineering and physics, the offices of the faculty, and Dean of the School of Engineering.

ROSCOE WARD HALL—Ward Hall was completed and furnished in 1954. It is a one-story, fireproof building located on North Campus, which houses the Dairy Industry Department. The building is equipped with the most modern machinery and conveniences available for the handling, processing, and distributing of milk and milk products.

The front section of the building contains offices, a class room, and laboratories. The laboratories are equipped with the most modern equipment available for teaching courses in milk and milk products.

NOBLE HALL—Noble Hall is a fireproof, three-story building with basement. The basement is utilized largely for lecture rooms for botany and general zoology. A large animal room for biological research and laboratory procedure is also provided on this floor.

The first floor houses for the most part the bacteriological laboratory, the School of Nursing and the Administrative offices for the School of Nursing and Dean of the Graduate School.

The second and third floor of this building provides lecture rooms and laboratories for botany and for general advanced zoology. Offices for the Department Head and staff are also provided on these floors,

DEWITT C. BENBOW HALL—Benbow Hall is a two-story brick structure with a partial basement. The building contains three lecture rooms, faculty offices, faculty record room, reference-dining room, student lounge, storage room and laboratories for food preparation, quantity cookery, catering, clothing, textiles, experimental foods, nutrition, arts and crafts, and home furnishings.

E. R. HODGIN HALL—The Hodgin, a three story brick structure, was completed in 1955. It includes (1) classrooms for education, English, foreign languages, health, physical education, and social studies; (2) laboratories and clinics for dramatics, public speaking, improvement of reading, research and teaching; and (3) offices for the dean of the School of Education and General studies, director of guidance, and thirty teachers.

PUBLIC RELATIONS-ALUMNI AFFAIRS BUILDING—The Public Relations-Alumni Affairs Building is a modern five room Cape Cod Cottage which houses offices for these operations. In addition to a comfortable lounge provided for alumni and visitors, it contains two private offices, a photographic darkroom, a workroom, and a photograph-engraving morgue.

GENERAL INFORMATION

ADMISSION TO THE COLLEGE

High school graduates may qualify for admission to the Freshman class of the College undergraduate schools (School of Agriculture, School of Education and Science, School of Engineering and School of Nursing*) by the following method:

Presentation of a certificate from an accredited four-year high school indicating the successful completion of 16 units of acceptable courses distributed as indicated below.

A student from a non-accredited high school may be given a conditional admission subject to his demonstrating satisfactory scholastic ability during his first year.

ENTRANCE UNITS

Subject	*Number of Units*
English	4
**Mathematics	1
Social Studies (Preferably U. S. History)	1
Natural Science	2
Electives	8
Total	16 Units

The elective units may be selected from any other high school courses. However, students may not present more than two (2) units in activity courses, such as, music and physical education and not more than four (4) units in vocational Courses.

DEFICIENCIES

A student may be admitted with a deficiency of one (1) unit in natural science providing that he presents 16 other acceptable entrance units. This deficiency must be removed during the Fall, Winter, or Spring Quarter of the Freshman year by passing a non-collegiate credit course in General Science (General Science 011, The Physical Sciences, or General Science 012, The Biological Sciences).

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*Applicants interested in the School of Nursing will write directly to the Dean, School of Nursing.

**Students who plan to major in the fields of science and engineering and have not had Algebra or Plane Geometry must make up these deficiencies without college credit by the end of the Sophomore year. In addition, a half unit of Solid Geometry is required of all students who plan to take any branch of Engineering.

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PROCEDURES FOR APPLICANTS SEEKING ADMISSION TO THE COLLEGE

For admission to the Freshman class, applicants should secure from the College Registrar an application blank which should be filed with that official any time during the current school year, but in no case later than 30 days before the beginning of the quarter that he proposes enrolling. In addition, each applicant should present through the principal of his former school, a transcript of his entire academic record and a statement of the principal's estimate of his character. To facilitate the consideration of his application, the applicant should have his principal file these with the College Registrar as close to the time that the applicant files his application form as possible. In any case, the transcript of the applicant's record and the principal's character recommendation must be on file with the office of the Registrar at least 30 days before the beginning of the quarter for which the applicant proposes to enroll.

Applicants should receive official notice from the Registrar that they have been approved for admission before presenting themselves for Freshman Orientation and registration. It is therefore unwise for an applicant to travel to the College before receiving from the Registrar an official notification of his acceptance.

ENTRANCE EXAMINATIONS FOR APPLICANTS FROM NON-ACCREDITED HIGH SCHOOLS

Applicants for admission to the College who are graduates from non-accredited high schools, must in addition to complying with the above procedure, pass an entrance examination administered, scored, and evaluated by the College Entrance Board. This examination is administered once each quarter prior to the registration period on the dates listed in the College Calendar on page 3 of this bulletin. The permission of such applicants to report to the College for Freshman Orientation and registration is conditional and subject to cancellation upon failure of the applicants to pass the entrance examination.

PROCEDURES FOR APPLICANTS SEEKING READMISSION TO THE COLLEGE

A student whose attendance at the College has been interrupted for one or more quarters for reasons beyond his control, except that such interruptions shall not have been caused by dismissal from the College for disciplinary reasons, must apply for readmission directly to the Registrar. Such prospective re-entering applicants should normally receive notification of the approval of their application for readmission by the Registrar before presenting themselves for registration.

A student whose attendance at the College has been interrupted for one or more quarters by reason of dismissal by the Disciplinary Committee of the College must also apply for readmission. In addition, such students must also satisfy the Disciplinary Committee of their acceptability. Again, such students should normally await notice of the approval of their application for readmission before presenting themselves at the College for registration.

RESERVATION

The college reserves the right to reject any application for admission and to cancel the conditional approval of any applicant from a non-accredited high school who fails to pass the entrance examination.

FRESHMAN WEEK

1. Each candidate for the freshman class, who is not a resident of Greensboro, is expected to arrive on the campus the day preceding the date designated on the College Calendar for Freshman Orientation. All freshmen should be present by 8:00 a.m. on the first day.

2. The "permit to register" furnished beforehand by the Registrar, indicating the School or Department in which the applicant wishes to register must be ready for presentation to proper authorities.

3. The dates indicated in the College Calendar for Freshman Orientation and registration as well as those for upperclassmen must be strictly observed. Those seeking registration after the scheduled date, must pay a late registration fee of $5.00.

4. Admission to class will be permitted only after registration has been completed and certified by the bursar.

CLASSIFICATION OF NEW STUDENTS

1. *Freshmen.*

a. Graduates from high schools will receive entrance ratings according to the standing of their respective schools.

b. If the student is not a graduate of an accredited high school, he must comply with the requirements by examination. Entrance examinations will be held at the College on the day of registration.

c. Every student, irrespective of the method by which he seeks admission, must present to the College through the principal of his former school, a transcript covering his entire record and a statement including the principal's estimate of his character.

Note: All entering freshmen will be required to take placement tests in English and mathematics. All who fail in the English examination will be assigned to a remedial course in English (English 210). All who fail in the mathematics examination will be assigned to a remedial course in mathematics (Mathematics 309).
All who fail in the French test will take French 211.

2. *Students of Advanced Standing.*

After transcripts have been received, applications for advanced standing will be passed upon by the admissions officers, and students will be furnished a statement of credit allowed.

All persons who desire to enter the College should make application to the Registrar before the opening of the quarter for which they wish to enroll. Those who desire to be admitted by certificate should apply as soon as possible after graduation from high school. Early attention to this matter will save the student delay.

3. *Special Students.*

In exceptional cases applicants of mature years, of special training along particular lines, or of long experience in specific fields of knowledge, may be admitted to the college to pursue a non-degree program or study certain subjects as a special student, even though they cannot satisfy entrance requirements. Such students must submit satisfactory evidence of their ability to profit from such a program and must do a passing grade of work in each subject.

CLASSIFICATION OF ADVANCED STUDENTS

Sophomore—

To be classified as a sophomore, a student must have completed fifty hours of work open to freshmen and must have earned at least fifty grade points. As a part or in addition to this, the freshman courses in education, vocations, military science or physical education, and remedial English and mathematics must be completed. In addition, all admission deficiencies must have been removed.

Junior—

To be classified as a junior, a student must have completed one hundred quarter hours of work required of sophomores, and must have earned one hundred grade points. No student will receive junior classification until all required freshman and sophomore courses have been completed.

Senior—

To be classified as a senior, a student must have completed at least one hundred and fifty hours of required and major work, and must have earned a minimum of one hundred and fifty grade points.

STUDENT LOAD

The unit of credit is the quarter hour. Each quarter hour stands for one recitation or two laboratory periods per week for a period of twelve weeks. Each recitation period requires approximately two hours of preparation.

Regular students will be required to register for a minimum of 14 hours of college credit per quarter.

(a) A student whose general average is "C" may register for not more than the normal load.

(b) Students whose average is 2.5 grade points, with no grade below "B" may be permitted to register for not more than 21 hours of work for the quarter following such a record.

Students carrying a normal load in regular classes will not be permitted to register for credit in evening or extension classes.

MARKING SYSTEM

	Grade Points
93-100—A (Excellent	3
82- 92—B (Good)	2
71- 81—C (Fair)	1
60- 70—D (Poor, but passing)	0
Below 60—F (Failure)	—1
I (Incomplete)	
W (Withdrew)	

GRADE POINTS

The maximum number of points which a candidate for graduation with minimum hour requirements can make under this system is 600, the minimum 200; this means that, in order to graduate, a student must make an average of "C."

REMOVAL OF FAILURES

At the first opportunity a student must repeat a required course which he has failed, unless the Dean of his School authorizes a suitable substitute course.

INCOMPLETES

Students are expected to complete all requirements of the particular course during the quarter in which they are registered. However, if at the end of the quarter, a small portion of the work remains unfinished

and can be completed without further class attendance, the grade for the student may be reported "Incomplete," providing his standing in the course is "passing."

For the student to secure credit, the work must be completed within one month after the beginning of the succeeding quarter in residence. Otherwise, the grade automatically becomes "F."

At the close of the quarter, each teacher will file with the Registrar a list of names of students who have received "Incomplete" grades together with a statement of all the work required to complete the course before a final grade can be reported to the Registrar.

After registration has been completed in the following quarter and it has been determined that a student has registered, both he and the teacher will be notified by the Registrar of the outstanding "Incomplete" grade and of the fact that it must be removed within the prescribed period.

COURSE NUMBERING SYSTEM

The instruction of the College is administered by six main groups:

The Faculty of the Graduate School
The Faculty of the School of Agriculture
The Faculty of the School of Education and Science
The Faculty of the School of Engineering
The Faculty of the Technical Institute
The Faculty of the School of Nursing

The number of each course in the Agricultural School begins with the figure 1; those in the School of Education and Science with the figure 2; those in the School of Engineering with the figure 3; and those in the Vocational School with the figure 4.

Each course is designated by a number containing three figures. The first indicates the school in which it is offered; the second (with a few exceptions), its academic classification; and the third, either the quarter in which it is usually given or its serial number.

Examples:

History 211 is a course offered by the Faculty of the School of Education and Science; it is open to freshmen, and it is usually offered in the first quarter (Fall Quarter).

Chemistry 111 is a course offered by the Faculty of the School of Agriculture; it is open to freshmen, and it is the first of a series.

Physics 323 is a course offered by the Faculty of the School of Engineering; it is open to Sophomores, and it is usually given in the third quarter (Spring Quarter).

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Exceptions:

(a) There are some unavoidable exceptions to this system, especially with reference to the second and third figures. Some courses with the middle figure 1 are open to upperclassmen, and there are a few courses with the middle figure 2 open to freshmen. Courses are not in every case given during the quarter indicated by the third figure (where the third figure is meant to indicate the quarter rather than the serial number).

(b) Courses in all schools open to advanced undergraduates and graduates are numbered 500 plus; graduate courses only are numbered 600 plus.

(c) Courses in the Technical Institute are numbered 400 plus.

SCHEDULE REGULATIONS

EXAMINATIONS

Entrance examinations and examinations for removal of conditions will be held on the day of registration. All students who have to remove conditions should avail themselves of this opportunity.

CHANGES IN SCHEDULE

Students have one week from the beginning of each quarter in which to make adjustments in their schedules. After this time no changes will be permitted except by written permission of the dean of the particular school. The registrar will then recall the class card and discharge the student from the class.

No student will be allowed credit for courses added without permission to the schedule after it has been approved, and any student illegally dropping a course for which he has been registered will be assigned the grade "F" at the end of the quarter.

CLASS ATTENDANCE

Students will be required to attend scheduled assemblies, vespers and the regular exercises of the course in which they are registered.

No student is entitled to any cuts; a cut is defined as an unexcused absence from any class. Cuts will be considered on a course basis inasmuch as a student may cut repeatedly from a certain course while he attends regularly all his other classes.

As soon as a student is reported as having three cuts from any class, that student will be placed on probation by the Dean of Men and the student's parents will be notified accordingly. The student and parents will be notified that if the student takes two more cuts from the course in which he already has three cuts, he will be officially dropped from that course. Should a student cut excessively in all his courses, the result will be dismissal from the institution for the remainder of the quarter.

SCHOLARSHIP

Students will be expected to do a passing grade of work at all times. Students failing to attain a "C" average in any quarter will be placed on probation the following quarter. Unless definite improvement is made while on probation, the student may be asked to withdraw.

HONOR ROLL

To encourage scholarship and integrity, the College publishes an Honor Roll at the end of each quarter. Regular students whose average grade in all courses is "B" shall be eligible for the Honor Roll. Those students whose grade point average is 2.5 each quarter for three consecutive quarters shall be eligible for a Scholarship.

WITHDRAWAL FROM COLLEGE

Students who for any reason find it necessary to withdraw from College before the scheduled termination of the school year should file an official withdrawal with the bursar. Forms for this purpose may be secured in the office of the registrar. Students should have these forms signed by the designated officials and filed before leaving the campus.

All accruing accounts and obligations against such students will terminate on date of filing withdrawal notice. Accruing accounts will continue against those failing to file notice of withdrawal.

EXTRACURRICULAR ACTIVITIES

Each student shall be encouraged to participate in some extracurricular activity.

QUARTERLY EXAMINATIONS

A final examination will be required as a part of every course. An examination schedule showing time and place of meeting of each course and section will be published quarterly. Schedules so published will be followed without variation except by special permission of the dean of the school in which the course is offered.

DEPORTMENT

Students will be expected to conduct themselves properly at all times and any student who manifests unwillingness to conform to the rules and regulations that are prescribed or that may be prescribed, to govern the student body, or any student whose influence or deportment seems detrimental to the best interest of the school will be asked to withdraw from the institution.

A student automatically forfeits his privilege of working for pay at the College when, for any reason, he is placed on probation because of misconduct.

RELIGIOUS ACTIVITIES

One of the purposes of the college is to maintain a high moral tone and to develop a broad, tolerant religious spirit among its students.

The College Chapel has been organized on a non-denominational basis with the Director of Religious Activities serving the function of director. The Chapel provides an opportunity for students and faculty to continue the development and enrichment of their spiritual life through participation in a program of religious activities similar to those of their home churches. In addition to two public worship services per month, the religious program is implemented through the activities of the Sunday School, the Official Boards of the Chapel, the Usher Board, The Fellowship Council, Young Men's Christian Association, and Young Women's Christian Association. The College encourages students to maintain ties with their religious heritages by attending local churches of their denominations. For their convenience a roster of churches in the college community is printed in the Student Handbook.

HEALTH SERVICE

It is the purpose of the health service program to improve and protect personal and environmental health conditions and thereby develop a safe and healthy college community. Through a competent staff of doctors, dentists, and nurses, student health problems are given professional attention.

Upon entering the institution, and each fall thereafter, a thorough health examination, including a blood test, is given to each student. Follow-up and referral services are rendered for all defects found.

DORMITORY REGULATIONS

BOARDING STUDENTS

All students who room on the campus must take meals in the college cafeteria.

NON-RESIDENT STUDENTS

Students whose legal residence is not in Greensboro will not be permitted to board and lodge off the campus unless they have special permission, or unless they have employment that requires them to live on the premises.

FRATERNITY HOUSES

The College will not permit fraternities, sororities, or other groups to establish "houses" off the campus.

DISCIPLINARY SUSPENSION

All students, except *bona-fide* residents of Greensboro, are required to leave the campus and the city within forty-eight hours after disciplinary suspension. Permission to re-enter the College will not be granted if this regulation is violated.

DORMITORY PROVISIONS

The College provides for each student a bed, bureau, study table, and straight chair. Students are required to furnish their own curtains, blankets, bed linen, rugs, and towels. Electrical appliances, other than those already supplied, are forbidden. Exception: Radios.

CREDIT EVALUATION SYSTEM

The credit value of each course is indicated by three numbers. The first represents the full credit value in quarter hours; the second, the number of recitations per week; and the third, the number of hours spent in the laboratory each week. For example, French 211, Credit 5(5–0) means that this course carries 5 hours credit, and is conducted by lecture or recitation 5 times per week with no assigned laboratory; while Chemistry 112, Credit 5(3–4) carries 5 hours credit; 3 hours being devoted to lecture or recitation and 4 spent in the laboratory. Two hours in the laboratory are required for 1 hour of credit.

GENERAL GRADUATION REGULATIONS

(For special graduation requirements for each School—
see pages 63-69-73.)

Graduation from the A. and T. College involves the satisfaction of the following requirements:

1. The candidate for a degree must have selected a specific curriculum having the approval of the Dean of the School in which he is registered. This curriculum must have been completed.

2. Whether registered in Agriculture, Education and Sciences or Engineering, he must complete at least 200 quarter hours and 200 grade points.

3. The credit hours must aggregate at least 200, including the required courses in military science and physical education. The grade points must equal 1 times the number of credit hours undertaken

whether passed or failed. After securing 200 credit hours if the student is deficient in grade points, he must take additional courses to secure these points. The student must obtain an average of 1.5 or more in his major field and 1.0 or more in his minor field. A minimum of one year of residence is required.

4. It is the aim of the institution to send forth men and women who are fit representatives. To this end, the College reserves the right to refuse to admit any student to the Senior Class or to graduate anyone who though qualified by class record may otherwise seem unfit.

5. Payment of diploma fee of five dollars ($5.00) must be made to the bursar on or before February 1 preceding graduation.

6. Students in the graduating class must clear all conditions by the end of the quarter preceding graduation.

7. Candidates for graduation must file an application for graduation upon the form provided in the office of the Registrar at least four months prior to the date they expect to graduate.

GRADUATION WITH HONORS

By a vote of the Administrative Council in the Spring of 1938, it was decided that henceforth graduation honors would be awarded candidates completing all requirements for graduation in accordance with the following stipulations: (1) Those who maintain throughout their course a grade point average within the range of 2.00 to 2.24 will receive "honor"; (2) those who maintain a general average within the range from 2.25 to 2.49 will receive "high honor"; and (3) those who maintain an average within the range from 2.50 to 3.00 will receive "highest honor." Publication of honors and scholarships is made at graduation and in the college catalog.

DEGREES

All students successfully completing any of the four-year courses of study shall be entitled to the degree of Bachelor of Science.

1. Those graduating from a four-year curriculum offered in the School of Engineering shall be entitled to the Bachelor of Science degree in Architectural Engineering, Electrical Engineering, Mechanical Engineering, Engineering Mathematics, Engineering Physics, Business, Fine Arts, and Industrial Education.

2. Those graduating from a four-year curriculum in the School of Agriculture shall be entitled to the degree of Bachelor of Science in Agriculture.

3. Students successfully completing a curriculum in the School of Education and Science shall be entitled to the degree of Bachelor of Science.

4. The Master of Science degree will be awarded those meeting requirements for same. See page 80.

STUDENT ORGANIZATIONS

ALPHA KAPPA MU HONOR SOCIETY

The Alpha Kappa Mu Honor Society in a national scholarship organization with local chapters established in grade "A" colleges.

The local chapter is now known as the Gamma Tau Chapter of the Alpha Kappa Mu Honor Society, and qualifications for Gamma Tau which have been changed to conform to those of the National Organization are as follows:

1. Candidates must have completed ninety quarter hours or sixty semester hours with an average of not less than 2.3. These must include all required courses listed for freshmen and sophomores.

2. Membership is open to all students of the College provided they meet scholastic requirements; in the case of transfer students, there must have been a chapter of Alpha Kappa Mu or some other honor society with equivalent standards, rules and regulations at the institution from which they transferred.

3. Candidates must never have been suspended for disciplinary problems.

The Society encourages participation in at least one extracurricular activity. All students recommended by the registrar and personnel deans as having the qualifications listed above are eligible for membership.

SOPHIST SOCIETY

This organization is composed of regular college students of Freshman, Sophomore, and Junior classification who maintain a minimum average of 2.3. The purpose of this organization is to encourage high scholarship among all college students.

Persons who remain in the Sophist Society for three years are eligible for membership in Alpha Kappa Mu Honor Society during the senior year.

SIGMA RHO SIGMA RECOGNITION SOCIETY

Sigma Rho Sigma Recognition Society is a national honor society for social science majors; its membership is open to graduates and undergraduates. Chapters of the society are located in the various colleges represented in the membership of the Association of Social Science Teachers in Negro Colleges.

The purposes of the society are:

1. To encourage study, promote research, and to recognize achievement in the field of social science.
2. To promote the cooperation of students in the field of human relations.
3. To promote professional growth and development among the members.

To be eligible one must be a junior concentrating in the social sciences, with an average of 2.0 and have a minimum credit of 25 hours in the social sciences.

BETA KAPPA CHI

Beta Kappa Chi is a recognition society for honor students in fields of science and engineering.

FRATERNITIES

The following national fraternities have chapters at the college: Alpha Phi Alpha, Omega Psi Phi, Phi Beta Sigma, Kappa Alpha Psi and Alpha Phi Omega.

SORORITIES

The following national sororities have established local chapters: Alpha Kappa Alpha, Delta Sigma Theta, Zeta Phi Beta, Iota Phi Lambda, and Sigma Gamma Rho.

PAN-HELLENIC SOCIETY

The Pan-Hellenic Society is a federation of all fraternities and sororities on the campus. Its membership is composed of elected representatives from each Greek-letter organization. The main purpose is joint action for maintaining high standards in fraternity and sorority life at the institution.

COLLEGIATE 4-H CLUB

The Collegiate 4-H Club is composed of students who have had previous experience as 4-H Club members in high school. An informal meeting of a business and social nature is held monthly. Honorary members may be elected to the club from time to time.

THE COLLEGIATE NFA CLUB

The Collegiate Chapter of the New Farmers of America is composed of agricultural students who are former NFA members or trainees enrolled in the teacher training department of the School of Agriculture. The purpose of the collegiate chapter is to give training and experience to students who will later become teachers of vocational agriculture. Honorary members may be elected to the collegiate chapter of the New Farmers of America.

THE AGRICULTURAL ASSOCIATION

This association is composed of agricultural students. It meets twice monthly for business and social purposes. Honorary members may be elected to the association from time to time.

THE COLLEGE BANDS

The several college bands occupy an important place in the life of the institution. The Band Department is complete with full instrumentation and equipment for the many varied activities of marching and concert organizations. Expert instruction in all band instruments is given by a staff of trained bandmasters.

The organizations in the Band Department are:

Beginners Band—for any College student who desires to learn to play a musical instrument.

Intermediate Band—for students who have had not more than three years of previous experience on a band instrument.

Senior Bands—The 100-piece marching group for the many athletic events that take place in the fall. Open to those students who have four or more years of experience on a band instrument. Also the 80-piece symphony concert group open only to those qualified students who successfully audition for entrance.

Women's Band—The "All-Girls" band that supplements the regular College Marching Band in the fall at all athletic events. During the remainder of the year this group appears at student recitals in minor concert appearances.

Military Band—A separate organization that furnishes music for all military reviews, drills, and parades. Open only to members of the Infantry and Air-Force Reserve Officers Training Corps.

A splendid opportunity is thus offered to competent and worthy students to learn band music without extra expense to themselves.

FOREIGN LANGUAGE CLUBS

Le Cercle Francais and *El Circulo Espanol* meet once a month during the academic year.

THE FORTNIGHTLY CLUB

This organization, which gets its name from the period normally intervening between each meeting, is composed mainly of English majors and other advanced students who are interested in coming together for the purpose of exchanging ideas about books and people that have influenced or are influencing the life of their time.

THE DEBATING SOCIETY

The Kappa Phi Kappa Forensic Society, better known as the Debating Society, is designed to stimulate interest in public speaking and debate. It is composed of college students who have distinguished themselves in public performances in these fields.

The Society awards a certificate of merit to any graduating senior who has participated in non-varsity debates or who has otherwise rendered meritorious service to the Kappa Phi Kappa Forensic Society for at least two years.

THE A. AND T. LITTLE THEATRE—The Richard B. Harrison Players is an outstanding campus organization whose genuinely artistic work bespeaks the excellent training and unusual opportunities rendered by the drama workshop and laboratory theatre for experimentation in acting, playwriting, stage-craft, and play direction.

CHORAL ORGANIZATIONS—The College Choir, the Men's Glee Club and the Concert Choir have won for themselves an enviable reputation for the genuine artistry of their work. These organizations, open to all qualified students, offer extracurricular activity which is at once instructive and enjoyable.

THE P. E. M. CLUB—The P. E. M. Club is an organization to promote professional growth and to encourage fellowship among physical educational major and minor students. Membership is open to all stu-

dents who have successfully completed preliminary requirements and have been accepted as majors or minors in the department of health and physical education.

THE A. AND T. DANCE GROUP—The Modern Dance Club presents an opportunity for students to learn and create various types of dances. Members of the group participate in local and regional programs annually. This organization is open to all interested students. Dance club members are eligible for W. A. A. awards.

INTRAMURAL ATHLETICS—A program of intramural athletic activities is conducted, on an elective basis, throughout the school year. Schedules and tournaments are arranged, and equipment is made available by league managers and physical education majors. All students may participate in intramural activities.

THE WOMEN'S ATHLETIC ASSOCIATION

The W. A. A., a member organization of the Women's Sports Day Association, is open to all women students who desire participation in competitive and leisure time athletic activities such as hockey, soccer, softball, basketball, volleyball, badminton, and archery. Competent and active members of the association are selected to engage in competitive activity and fellowship with women students of other colleges during semi-annual Sports Day Meetings. Appropriate awards are given for outstanding performance and active participation. The organization holds business meetings twice each month.

VARSITY ATHLETICS

The intercollegiate athletic program is under the supervision and direction of the Athletic Committee, consisting of faculty, alumni and students. The sports included in the program are football, basketball, baseball, track, boxing and tennis. The college is a member of the Central Intercollegiate Athletic Association, the National Association of Intercollegiate Athletics, and the National Collegiate Athletic Association, and is subject to the rules and regulations of those bodies.

The Varsity letter shall be awarded by the Athletic Committee, upon recommendation of the coaching staff, to members of the football, basketball, baseball, track, tennis, and boxing team for outstanding performance and active participation. The varsity letter is awarded to members of the cheering squad who serve with credit.

THE LETTERMEN'S CLUB

The Lettermen's Club aims to bring about a union between college athletes of similar high ideals of leadership, manhood, sportsmanship,

and fair play. Membership in this organization is limited to Varsity lettermen of A. and T. College. Any Varsity letter winner may be nominated for membership after having been approved by the coach of the sport the nominee represents.

LOANS, SCHOLARSHIPS AND PRIZES

COLLEGE SCHOLARSHIPS—The College will grant a scholarship for one year to any student who makes a grade average of 2.5 for three quarters of the preceding school year. The scholarship will pay tuitition and can be used for other purposes.

SCHOLARSHIPS IN DAIRY HUSBANDRY—Six scholarships are given each year to high school graduates who wish to take a one-year short course in dairy husbandry. Board, room and all fees are paid. Applications should be obtained from the Dean of Agriculture before August 1 of each year.

NFA SCHOLARSHIPS—The College offers a one-year scholarship of $50.00 to the NFA member graduate from high school who has the best record in supervised practice work and scholastic activities for a period of four years.

Y.W.C.A. SCHOLARSHIP—As a means of promoting scholarship among high school girls and to encourage them to attend college, the College Y.W.C.A. offers each year a scholarship of $50.00 to be used in defraying college expenses.

SUSIE B. DUDLEY SCHOLARSHIP—This scholarship of $100.00 in cash is made possible by Mrs. Leora J. Spaulding, class of 1935, of Greensboro, North Carolina, and is given in honor of the late Mrs. Susie B. Dudley, wife of former President James B. Dudley. It is open to women students who are doing or who plan to do graduate study at the college in some phase of English or Education relating to dramatics, public speaking or writing—activities in which Mrs. Dudley was personally interested.

4-H CLUB SCHOLARSHIP—In order to promote interest among Negro 4-H Club boys in North Carolina and to encourage continuous achievements in all phases of 4-H Club work, the College offers a one-year scholarship of $50 to the high school graduating senior with the best record in 4-H Club work. This is to be used in defraying expenses at the institution.

WILLIAM H. FOUSHEE MEMORIAL SCHOLARSHIP CUP—Dr. J. M. McGee of Greensboro, each year presents a scholarship cup in memory of William H. Foushee, Jr., a former student of A. and T. College, to the member of the Junior Class with the highest scholastic average.

THE CHARLES L. COOPER AWARD—Mu Psi Chapter of the Omega Psi Phi Fraternity presents annually this award in memory of Dr. Charles L. Cooper, a former professor of Industrial Education at A. and T. College. It is presented to the student in Industrial Arts with the highest average above two points.

THE REGISTER AWARD—As a means of promoting a wider interest and greater activity on the part of the students in the field of journalism, the College *Register* awards a gold key to those members of the graduating class who complete a period of at least two years of meritorious service as members of the *Register* staff.

ALUMNI ATHLETIC AWARD—The Philadelphia branch of the College Alumni Association awards a gold medal each year to the student of the graduating class making the best record in major intercollegiate sports.

ALUMNI SERVICE AWARD—The Gate City (Greensboro) Chapter of the Alumni Association makes an award each year to that member of the graduating class, voted by the Administrative Council as having rendered the "most distinctive service to the College and to the community."

THE KAPPA PHI KAPPA KEY—The Kappa Phi Kappa Key was first awarded in 1928 by the Kappa Debating Society. The key is awarded to the member, or members of the graduating class who have been speakers on the college varsity team for two years.

DEBATING TROPHIES—The Rand-Hawkins-McRae debating trophy is provided by Messrs. J. M. Rand, J. A. Hawkins and S. D. McRae, graduates of the College, Class of 1906, and is awarded annually to the members of the graduating class who have at least three years of varsity debating.

Freshman-Sophomore Debating Trophy—The college presents to the winning team at the annual Freshman-Sophomore Debate a debating trophy with the name of the class and the year of the debate. This trophy signifies the increasing interest in oratory and research and serves as an incentive for freshman and sophomore achievement in the forensic arts.

BROTHERHOOD AWARD—The Brotherhood Award of $50.00 presented by Mr. Ralph Johns of Greensboro, to the student who has done most to promote brotherhood and goodwill.

THE HOME ECKERS SCHOLARSHIP—A scholarship of $25.00 will be given to the Home Economics student who has maintained a grade average of 2.00 and has completed 100 quarter hours. She must also have met other standards set up by the club. This scholarship is to be used to assist in defraying her college expenses.

MEDALS

The John Merrick Medal will be awarded to the student completing the four-year mechanical course with the best record in the college department.

The William Andrew Rhodes Medal will be awarded to the male or female student having good character and making the best record in musical activities during the school year. This award is sponsored by Dr. William Andrew Rhodes, composer, teacher, and conductor.

The M. F. Spaulding Medal will be awarded to the student completing the full four-year course in agriculture with the best record.

The Saslow's, Inc., Medal will be awarded (a) to the member of the graduating class who completes the four-year course in the School of Education and Science with best record, and (b) to the student who graduates with best record in Social Sciences.

STUDENT LOAN FUND

The A. and T. College Student Aid Fund was established by the Student Council of 1946-47 to provide a source of revenue for loans and grants to deserving students. The revenue is derived from student contributions of $0.50 per year, faculty members, campus organizations, Alumni donations and other legitimate sources.

Any regular term student duly registered is eligible to apply for aid through this fund.

SUMMER SCHOOL

In Point of Continuous Service, the Oldest Summer School in the Country for Negroes

The fifty-fourth annual summer session of the A. and T. College Summer School will begin June 14, 1956, and continue for nine weeks, thereby completing a full quarter of college work under the new accelerated plan.

Aside from the splendid opportunity which the Summer School offers teachers-in-service to raise their certificates and thereby obtain better salaries, the College makes it possible for the ambitious teacher to obtain a standard degree by attending the summer school.

College students may shorten their stay in college by attending summer school. Students from other institutions may enter the summer sessions for credit in their respective institutions, by permission from either the president or dean of their respective colleges. Such students will not be required to present a complete record of their previous training, but will be required to present a signed statement from the president or dean indicating the summer courses for which credit will be allowed.

College graduates may use their time in summer school meeting requirements for the Master of Science degree. Persons interested in earning this degree should make application for candidacy early in order that their program may be arranged with this end in view.

EVENING SCHOOL

The College conducts evening school for in-service-teachers and others who can qualify for the courses offered. All evening courses are conducted on the same basis as courses that are offered in the regular day classes, and may be applied towards a degree. Admission requirement for the Evening School is the same as for the regular day classes.

EVENING TRADE CLASSES

The Technical Institute will conduct evening classes in trades and related subjects in any area that ten or more persons request.

The evening classes are intended primarily for those persons who work during the day and desire supplemental training in their chosen fields. In this way it is possible for one to obtain an excellent theoretical training and a practical background at the same time, which, if he has the incentive and ability, should lead to advancement. These courses will vary from elementary to advanced work along technical lines.

These classes will be scheduled for two-hour sessions between the hours of 6:30 and 9:30 in the evening to meet the convenience of the students.

EXPENSES AND FEES

Expenses and fees at A. and T. College are so arranged that the largest installments are payable at the beginning of the school year and

at the beginning of each quarter. The fees listed below apply to the five classes of students. They are:

1. Boarding and Lodging—men.
2. Boarding and Lodging—women.

These groups consist of men and women students who live, have their meals, laundry, and classes on the college campus.

3. Boarding Only students are those who take their meals and classes on the campus.
4. Day students are those who take their meals, lodging, and laundry off the campus.
5. Part-time off campus students are those who take less than the minimum number of courses to be classed as a regular student. (Less than 11 quarter hours per quarter.)

DISTRIBUTION OF FEES

Name of Fee	*Unit Cost*	*Part Time*	*Day*	*Boarding Only*	*Boarding and Lodging Men*	*Boarding and Lodging Women*
(Paid Monthly 8½ months)						
Board (allowance for holidays	$22.00			$184.75	$184.75	$184.75
Lodging	10.00				84.85	84.85
Laundry—Men	2.00				18.00	
Laundry—Women ...	1.00					9.00
Custodial Care (Day Students Only) ...	5.50		$49.50			
Tuition (Day Students Only) ...	14.50		130.50			
(Paid Quarterly at the beginning of each quarter)						
Tuition	43.50	$45.00*		130.50	130.50	130.50
Course Fee	6.00	18.00	18.00	18.00	18.00	18.00
Athletics	4.00		12.00	12.00	12.00	12.00

*Cost of one 3 quarter hour course

Medical ($6.00 payable first registration during the year and $3.00 at other Quarters	3.00		12.00	12.00	12.00	12.00
Registration	2.00	6.00	6.00	6.00	6.00	6.00
Lecture	1.00		3.00	3.00	3.00	3.00
Library	1.00	3.00	3.00	3.00	3.00	3.00
†Picture Fee	.50		.50	.50	.50	.50
†Test Fee	1.50		1.50	1.50	1.50	1.50
Book Rental Fee	8.35		25.05	25.05	25.05	25.05
Total General Fund Fees		$72.00	$256.05	$396.30	$499.05	$490.15
Special Fund						
(All payable at Sept. 14)						
College Register Annual	1.50		1.50	1.50	1.50	1.50
Dormitory Key Deposit	1.00				1.00	1.00
Library and Laboratory Deposit	2.00	2.00	2.00	2.00	2.00	2.00
Student Activity	2.50		2.50	2.50	2.50	2.50
Mail Box Rental	1.00				1.00	1.00
Student Aid	.50		.50	.50	.50	.50
Total Special Fund Fees		2.00	10.00	10.00	12.00	12.00
Total payable during the year (Does not include other Fees listed elsewhere) ..		$74.00	$271.05	$406.30	$511.15	$502.15
In addition to the fees listed above the Out-of - State Student will pay the following: $76.50 at the beginning of each Quarter	269.50	*58.50	269.50	269.50	269.50	*269.50
Total for Out - of State Students		$132.50	$540.55	$685.80	$780.65	$771.65

†Both of these Fees payable only at first registration

SCHEDULE OF FEE PAYMENTS

1956-1957

Payment No.	Date of Payment Fall Quarter	Day Student	Part-time Student	Boarding Only Student	Boarding and Lodging Men Student	Boarding and Lodging Women Student
1	September 12	$60.35	$26.00*	$105.85	$119.85	$118.85
2	October 12	20.00		22.00	34.00	33.00
3	November 12	20.00		16.50	26.00	25.00
	Total Fall Quarter	$100.35	$26.00	$144.35	$179.85	$176.85
	Winter Quarter					
4	December 7	$45.35	$24.00	$84.60	$93.95	$92.95
5	January 7	20.00		22.00	34.00	33.00
6	February 7	20.00		22.00	34.00	33.00
	Total Winter Quarter	$85.35	$24.00	$128.60	$161.95	$158.95
	Spring Quarter					
7	March 12	$45.35	$24.00	$90.85	$102.85	$101.85
8	April 12	20.00		22.00	34.00	33.00
9	May 12	20.00		20.50	32.50	31.50
	Total Spring Quarter	$85.35	$24.00	$135.35	$169.35	$166.35

All out-of-state students should add $89.83 to the first regular payment at the beginning of each quarter. Total for year $269.50.

SUMMARY OF PAYMENTS

Total Part-time Student	$74.00
Total Day Student	271.05
Total Boarding Only Student	406.30
Total Boarding and Lodging Men Student	511.15
Total Boarding and Lodging Women Student	502.15

GRADUATE FEES

1. All persons taking 11 quarter hours or more will be charged the customary fees and charges of an undergradute student.
2. Persons taking 10 hours or less may elect to pay $5.00 per quarter hour tuition plus the following additional fees:

*Cost of one 3 quarter hour course

(a) Library fee $3.00
(b) Course fee 6.00
(c) Library and Laboratory deposit 2.00
(d) Registration Fee 2.00

3. A fee of $5.00 for those registering for the first time.

OTHER FEES

$269.50—Annual out-of-state tuition fee to be paid in quarterly installments of $89.83 by all non-residents of North Carolina. For part-time students this fee payable at the rate of $6.50 per quarter hour for 9 quarter hours or less.

4.00 Quarterly fee for those who take the course in swimming.
10.00 R. O. T. C. Deposit made by all male students taking this course.
3.00 Rental of cap and gown (for seniors only).
3.00 Certificate fee.
5.00 Diploma fee.
1.00 Transcript fee (after the first one).
4.00 Music (Two lessons per week and the use of piano per month).
5.00 Fine for late registration.
25.00 Practice teaching (other than Vocational Agriculture).
50.00 Senior Engineering inspection tour.

SPECIAL NOTE TO PARENTS AND OTHERS RESPONSIBLE FOR PAYING STUDENT'S BILLS

1. Pay all fees on or before the date set by the College, (See Schedule of Payments) to avoid embarrassment of student being dropped from classes or sent home.

2. Do not send cash or personal checks; the cash may be lost or stolen before it is received by the College and personal checks are not legally acceptable by the college. Instead of cash or personal check, get money order, cashier's check or certified check; (Do this even when the student brings the money); make it payable to "A. & T. College" and send it in care of the Bursar's Office, as it is the only office at the college equipped to receive money.

3. Do not ask for credit because it is illegal for the college to grant credit.

LODGING DEPOSITS

Students should reserve rooms far in advance of the time of arrival by paying the room deposit of five dollars, which will later be credited

to the account upon presentation of receipt. If for any reason a student fails to register, the lodging deposit will be refunded, provided application for same is made within thirty days after the appointed day of registration. If application is not made within that time the deposit will be forfeited. Send room deposits to the Registrar.

BOOK RENTAL SYSTEM

The book rental system is instituted for the purpose of furnishing each student with necessary textbooks for his courses. Workbooks, equipment and supplies are not provided for under this system. The rental fee is indicated in the distribution of fees and is payable each quarter.

Students have the privilege of purchasing personal copies of textbooks.

Veterans under Public Laws 16, 346, and 894 are furnished textbooks under the rental system.

REFUNDING SCHEDULE WHEN WITHDRAWING FROM A. & T.

Regular Students

Board	Unused meal tickets at the rate of $.75 per day when officially absent.
Laundry	Value of unused tickets in laundry book for month for withdrawal.
Tuition	If paid monthly, no refund. If paid quarterly, to be refunded at the rate of $14.50 per month for those months no part of which has been used.
Course Fee	Refundable at the rate of $2.00 per month for those months during which the student did not attend the course.
Medical Athletic Registration	Not refundable unless student officially withdraws within 10 days after registration; then two thirds of the total fee is refunded to him.
Lecture Library Out-of-State	Two-thirds of the total fee refundable up to the first five weeks of the quarter. No refund after this period.
Custodial Care	Two-thirds refundable within ten days; none after that for month.
Lodging	Refundable at the rate of $.35 per night for unused portion of the month's total fee.

Book Rental	Total amount refundable for the first two weeks after registration when properly approved by the College Bookstore. No refund after this period.
College Register Student Activity Student Aid Mail Box	No refund unless student withdraws officially within 10 days after registration, then two-thirds of total is refunded.
Key Deposit Library and Laboratory	To be refunded in full, minus lost or damaged property.
Test Fee	No refund.
Picture Fee	No refund.

Graduate Students

One-half tuition, laboratory course fee, and library fee refundable within the first month after registration. After first month, no refund. Registration fee not refundable.

Part-time Students

One-half tuition and fees refunded if student withdraws within six weeks after quarter begins. One-fourth tuition only if student withdraws within next two weeks. Registration fee not refundable.

ENTRANCE FEES

Each student, when he registers, must pay in cash all entrance fees and expenses for the first month. See pages 50-58 for complete list of fees and expenses.

MONTHLY AND QUARTERLY FEES

Any student whose bills are not paid on or before the day following the date on which such bills are due will be excluded from all college privileges until such bills are paid.

LATE FEES

Each registrant who seeks to register after the last day assigned for registration will be required to pay a five dollar late registration fee.

MEDICAL EXAMINATION FEES

All regularly enrolled students of the College will be required to take a physical examination upon entrance. The College Physician, or some other physician designated by him, will be in charge of all examinations. Day students will be assessed a small fee to cover this and any other emergency service.

AIR AND MILITARY SCIENCE DEPOSIT

All students taking military training are required to make a deposit of ten dollars for a uniform. This deposit will be refunded when the uniform is returned in good condition. (All freshmen and sophomores unless excused by the College Physician are required to take military training.)

SPECIAL NOTICE

Due to the rising cost of living the Administration reserves the right to raise fees and charges without advance notice should conditions warrant.

F. D. Bluford, *President.*

OUT-OF-STATE STUDENTS

Non-resident students must pay an out-of-state fee. A non-resident student is one who comes into North Carolina from another state or from a foreign country for the purpose of attending college.

For this purpose any student whose parents have not lived in this state for more than six months immediately prior to his first enrollment in this college will be considered as non-resident, except in the case of:

1. Students twenty-one years of age at the time of their first enrollment, who are responsible for their bills, and who have resided in North Carolina for more than one year preceding the day of their first registration.

2. Students whose parents are in the United States military or government service and stationed out of state. In both of these cases such students will be regarded as residents.

Students cannot claim a change in resident status after they have enrolled. Those misrepresenting themselves in this respect in order to avoid paying the out-of-state fee will be subject to disciplinary action by the college.

SELF-HELP

The institution cannot guarantee jobs to students who expect to work their way through college. Many students find work in private families and in other occupations, and thereby defray a portion of their expenses. A person of ability and energy who can do work of any kind can generally find employment, but prospective students are cautioned against depending upon such unreliable sources of income.

*SPECIAL NOTICE TO KOREAN VETERANS
(Payment of Fees)

Public Law 550, 82nd Congress, differs from the law which provided educational benefits to veterans of World War II. One difference is the fact that under the new law, the Veterans' Administration pays no money to the school for veterans' training. All money is paid directly to the veteran in the form of a monthly subsistence allowance as follows:

Veteran with no dependents	$110
Veteran with one dependent	135
Veteran with two or more dependents	160

The veteran, therefore, is responsible for the meeting of all of his expenses. Usually two or three months elapse before the veteran receives his first check, so the veteran should be prepared to meet his expenses for the first three months. It is advisable to have, in addition to the money for regular college fees, (see pages 50-57), enough money to purchase supplies, and incidentals.

Public Law 550 allows *only one* change in program. Therefore, the veteran should obtain vocational and educational counseling through the Veterans' Administration or through the college before enrolling in college. The veteran may obtain counseling through the Veterans' Administration by simply checking item No. 14 "yes" on the Application for Program of Education and Training form. Guidance may be obtained at the college by visiting the College Guidance Center.

*This does not apply to disabled Korean Veterans.

INSTITUTIONAL ORGANIZATION

SCHOOL OF AGRICULTURE

WILLIAM E. REED, *Dean*

The School of Agriculture is organized into the following departments: (1) Agricultural Education—agricultural education, agricultural and home economics extension; (2) Agricultural Economics—agricultural economics, and rural sociology; (3) Animal Industry—animal husbandry, dairy husbandry, and poultry husbandry; (4) Biology—bacteriology, botany, general science, and zoology; (5) Chemistry—biochemistry, and chemistry; (6) Home Economics—child development, clothing, foods and nutrition, home administration, home economics education, institutional management, and nursery school education; (7) Plant Industry—agricultural engineering, field crops, forestry, fruits and vegetable production, geology, ornamental horticulture, and soils; (8) Associated Departments, consisting of state subject-matter, supervisory and administrative personnel of Agricultural and Home Economics Extension Service; and (9) Vocational Agriculture.

The School of Agriculture offers four-year programs of study leading to the degree of Bachelor of Science. These courses of study are designed to give not only scientific, technical, and practical training in the several specialized fields, but also provide for the development of a broad educational and cultural background which fits the student for more varied fields of endeavor.

Curricula leading to the Bachelor of Science Degree are offered in the following areas:

1. Agricultural Economics
2. Agricultural Education
3. Agricultural Engineering
4. Agronomy
5. Animal Husbandry
6. Biological Sciences
7. Chemistry
8. Dairy Husbandry
9. Home Economics, with majors in:
   - Clothing
   - Foods and Nutrition
   - Home Economics Education
   - Institutional Management
   - Nursery School Education

10. Horticulture
11. Poultry Husbandry

Two-year curricula leading to a certificate are offered in the following areas:

Animal Husbandry
Clothing
Dairy Husbandry
Farm Mechanics
Floriculture
Food Service Management
General Agriculture
Landscape Gardening
Poultry Husbandry

The two-year programs are designed to provide the student with a concentration of training and experience required for successful employment in one of the above areas.

In the two-year program emphasis is placed on technical training and practical experience for competence in a particular vocation rather than preparatory work leading to a degee. However, if a student decides to pursue a degree program, he will receive credit for courses he has completed that are equivalent to those in the degree curricula. The two-year program has been set up so as to maximize the amount of credit to be allowed.

All students who pursue programs of study in agriculture leading to the degree of Bachelor of Science should follow the Basic Curriculum in Agriculture for the freshman and sophomore years.

All students who pursue programs of study in home economics leading to the degree of Bachelor of Science should follow the Basic Curriculum in Home Economics for the freshman and sophomore years.

In the last quarter of the sophomore year the student should elect his major and, at this time, work out a complete program of study for his junior and senior years in conference with the Head of the Department of his major field. This program constitutes the student's requirements for graduation after it has been approved by the Dean of the School of Agriculture.

Normally a minimum of 30 quarter hours will be required for a major in any subject matter area, plus an additional 15 quarter hours in closely related courses. A minimum of 200 quarter hours of credit and a grade point average of 1.0 is required for graduation.

Students who plan to do graduate work in such specialized areas as soil science, veterinary medicine, nutrition, and entomology will be per-

mitted to pursue a program of study which includes courses designed to develop a sound background in science.

The School of Agriculture offers a two-year pre-veterinary curriculum which meets the requirements for admission to schools of veterinary medicine as recommended by the American Association of Veterinary Medicine. This program includes basic courses which are more than adequate for admission to most of the veterinary schools.

Since there is no School of Veterinary Medicine in North Carolina, the State has provided funds that will permit a limited number of students each year to receive training in veterinary medicine at an approved institution without having to pay out-of-state tuition fees normally charged students who are not residents of that state.

The Agricultural and Technical College of North Carolina has been designated to pass on the educational qualifications of all Negro students in North Carolina who apply to a School of Veterinary Medicine under this plan.

BASIC CURRICULUM IN AGRICULTURE

Freshman

Course and No.	*Fall*	*Winter*	*Spring*
English 211, 212, 213	5(5–0)	5(5–0)	5(5–0)
Geology 111	4(3–2)	.....	.....
Mathematics 311, 312	5(5–0)	5(5–0)	.....
Animal Husbandry 111	3 2–2)	.....	.....
Botany 111	.....	5(3–4)	.....
Zoology 111	.....	.....	5(3–4)
Physics 311	.....	.....	5(3–4)
Poultry Husbandry 111	.....	3(3–4)	.....
Field Crops 111	.....	.....	3(2–2)
Air or Military Science 211, 212, 213	2(3–2)	2(3–2)	2(3–2)
Physical Education 210a, 210b, 210c	1(0–2)	1(0–2)	1(0–2)
	20	21	21

Sophomore

Course and No.	*Fall*	*Winter*	*Spring*
Chemistry 111, 112, 113	5(3–4)	5(3–4)	5(3–4)
Animal Husbandry 122	.....	3(2–2)	.....
Agricultural Engineering 111, 122	3(1–4)	3(2–2)	.....
Poultry Husbandry 112	3(2–2)	.....	.....
Horticulture 111	.....	.....	3(2–2)
Ornamental Horticulture 122	.....	3(2–2)	.....
Field Crops 121	.....	3(2–2)	.....

Economics 231	.....	.....	5(5–0)
Soils 123	.....	.....	4(2–4)
Air or Military Science 221, 222, 223	2(3–2)	2(3–2)	2(3–2)
Physical Education 220a, 220b, 220c	1(0–2)	1(0–2)	1(0–2)
Bacteriology 123	5(3–4)	.....	.....
	19	20	20

TWO-YEAR PRE-VETERINARY MEDICINE CURRICULUM

First Year

Course and No.	*Fall*	*Winter*	*Spring*
English 211, 212, 213	5(5–0)	5(5–0)	5(5–0)
Math 311	5(5–0)	.....	.....
Botany 111	5(3–4)	.....	.....
Zoology 111, 112	.....	5(3–4)	5(3–4)
Chemistry 111, 112	.....	5(3–4)	5(3–4)
Air or Military Science 211, 212, 213	2(3–2)	2(3–2)	2(3–2)
Physical Education 210a, 210b, 210c	1(0–2)	1(0–2)	1(0–2)
	18	18	18

Second Year

Chemistry 113, or 121, 131	5(3–4)	5(3–4)	.....
Physics 311, 312	.....	5(3–4)	5(3–4)
Zoology 123, 143	5(3–4)	4(2–4)	.....
English 224	.....	.....	3(2–2)
Animal Husbandry 111, 122	3(2–2)	3(2–2)	.....
Zoology 142	.....	.....	3(3–0)
Poultry Husbandry 111	3(2–2)	.....	.....
Economics 231	.....	.....	5(5–0)
Air or Military Science 221, 222, 223	2(3–2)	2(3–2)	2(3–2)
Physical Education 220a, 220b, 220c	1(0–2)	1(0–2)	1(0–2)
	19	20	19

REQUIREMENTS FOR ADMISSION

The admission requirements of the School of Agriculture are the same as the general requirements for admission to the College.

SCHOOL OF EDUCATION AND GENERAL STUDIES

Warmoth T. Gibbs, *Dean*

The School of Education and General Studies offers to the student opportunities to prepare for teaching or for several distinct vocational and professional pursuits. The courses are constructed so that the student, although specializing, may also come in contact with subjects that possess wide cultural value and insure that broader outlook upon life which characterizes the educated man or woman. This school also offers professional courses in subjects required by the State Board of Education for the Standard "A" grade teaching certificate.

The School includes the following fields of study: air science, economics, education, English, foreign languages, general science, military science, music, physical education, and the social sciences as well as subjects required for completion of the pre-medical and pre-law courses.

REQUIREMENTS FOR ADMISSION

Admission requirements for the School of Education and General Studies are the same as those given for entrance to the Freshman Class. See page 30.

GRADUATION REQUIREMENTS

A minimum of 200 credit hours and 200 grade points is required for graduation.

In addition to majors and minors, each candidate for graduation will be required to meet the following distribution requirements both as to subjects and hours:

†1. Foreign language, 10 hours. (French or Spanish) for those who present two admission units of high school credit in the same language, and who pass the placement test in that language; others take the beginning courses.

*2. Mathematics, 10 hours.

3. English composition, 15 hours; and literature (English or American) 5 hours.

4. Science, 10 hours of chemistry or physics; and 10 hours of biological sciences.

5. Social Science, History of the Negro, of America, of Civilization‡, 5 hours each for a total of 15 hours.

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*Persons holding a satisfactory State teachers' certificate may substitute general science for mathematics.

†Foreign language is elective in the field of Physical Education.

‡An additional course in the social studies may be taken in lieu of history of civilization.

6. Music and art appreciation, 9 hours for those planning to teach; others 6 hours.
7. R.O.T.C., 12 hours.
8. Health and physical education, 9 hours for those planning to teach; others 6 hours.
9. Orientation, 1 hour.
10. Vocations, 6 to 10 hours.
11. Research, 3 hours.

The graduation requirements may be further classified under the following heads:

1. Required freshman-sophomore courses. These are the general college courses required in the School of Education and General Studies which must be completed before advancing to major work.

2. Major and Minor courses. Each student is required to select a major and a minor and complete a concentration in each. These will be selected at the end of sophomore year and completed during the junior and senior years.

3. Electives. The number of hours required for a major or a minor varies from department to department, but where a student has completed his required freshman-sophomore courses, his major and minor, and is still short of the two hundred hours required for graduation, he must complete a number of elective courses and hours sufficient to make up the deficiency.

4. Research Project. Each student taking a degree in the School of Education and General Studies will be required to complete an independent research project of his own choice. This will be done during the senior year.

All of the previously mentioned requirements will be adhered to rigorously. Students are urged to familiarize themselves with them early in their college career and follow them consistently in making out their schedules from quarter to quarter. Students should realize that while faculty advisers will be available and will be willing to assist them in adjusting curriculum and schedule problems, each student is responsible for the preparation of his own program of study.

REQUIRED COURSES FOR FRESHMEN AND SOPHOMORES

	Hours
English 211, 212, 213	15
English 220, 221, or 223	5
Foreign language (one language 214, 215 or 211, 212, 213)	10–15
Mathematics 311, 312	10
History 210, 213; 221 or 222	15
Chemistry 111, 112 or Physics 311, 312	10

Biological Science (Botany 111, Zoology 111)	10
Music and Art Appreciation	6– 9
R.O.T.C. 211, 213, 221, 222, 223 (for men)	12
Physical Education, six quarters	6– 9
Orientation (Ed. 211)	1
Vocations	6–10

SAMPLE SCHEDULE

The following are typical examples of how normal schedules might be arranged. Others more in accord with the student's interest and aptitudes might be selected:

Freshman

Course and No.	*Fall*	*Winter*	*Spring*
English 211, 212, 213	5(5–0)	5(5–0)	5(5–0)
Math. 311, 312	5(5–0)	5(5–0)	.....
French or Spanish 211, 212, 213	5(5–0)	5(5–0)	5(5–0)
Ed. 211	1(1–0)	.....	.....
ROTC 211, 212, 213	2(2–2)	2(2–2)	2(2–2)
Physical Education	1(0–2)	1(0–2)	1(0–2)
Mus. 211, 212, 213 or Art 314, 315, 316	2(2–0)	2(2–0)	2(2–0)
Vocations	3(0–6)	3(0–6)	3(0–6)
	19	19	19

Sophomore

Course and No.	*Fall*	*Winter*	*Spring*
Eng. 223, 220, 221	5(5–0)	5(5–0)	5(5–0)
Chem. 111, 112, or Phy. 311, 312	5(3–4)	5(3–4)	.....
Bot. 111	5(3–4)	.....	.....
Zool. 111	.....	5(3–4)	.....
Math. 313	.....	.....	5(5–0)
ROTC 221, 222, 223	2(3–2)	2(3–2)	2(3–2)
Physical Education	1(0–2)	1(0–2)	1(0–2)
Mus. 221, 222, 223, or Art 327, 328, 329	2(2–0)	2(2–0)	2(2–0)
History	.....	5(5–0)	5(5–0)
Education 221	.....	.....	5(5–0)
French or Spanish	5(5–0)	.....	.....
	19	19	19

MAJORS AND MINORS

A student upon entering his third year is expected to concentrate in two definite fields of study. In arranging his work he must conform to the following regulations: (1) At least forty-five hours of the total number required for graduation must be chosen from a particular subject or field, in which he must maintain a satisfactory major grade point average. This will constitute the student's major group. (2) At least 30 hours must be chosen from another subject or field, in which he must maintain a satisfactory grade point average*. This will constitute his minor group. The major should represent the student's principal field of interest and the minor, his second field. Persons preparing to teach are advised to complete majors in two fields.

No student is permitted to major or minor in a subject until he has filled out and turned in to the dean of the School of Education and General Studies the special application form for majors and minors and has, thereby, received the written approval of the heads of the two subject-matter departments in which he proposes to concentrate.

Students must realize that the requirements for a state teaching certificate are set up and administered by the State Department of Public Instruction and not by the college. While the completion of a college major ordinarily carries with it more courses and credits than are needed for meeting the requirements for certification, those students planning to qualify for a teaching certificate should consult the requirements of their respective states and take care to see that the courses needed for out-of-state certificates are included in their programs. This is equally important for those desiring certification in the minor field also.

The following are suggested as fields for major study in this School:

1. Education.
2. English.
3. Modern Languages.
4. Music.
5. Physical Education.
6. The Social Sciences.

For a minor a student may elect Art, Air Science, Health Education, Military Science, Business, or any of the fields mentioned above.

ELECTIVES

In addition to minimum distribution requirements, and a major and a minor, which are required, each student is permitted to elect such additional courses as will be necessary to satisfy the graduation requirements. In so doing he is urged to exercise the greatest care in order that his choice may add further to the integration and coordination of

*Fifty hours are required for a major in English; forty hours for a minor.

his program. All such electives must be selected with the approval of the student's adviser.

The elective work may be taken in any of the departments indicated previously or from any other department of the institution subject to the approval of the Dean of the School of Education and General Studies.

Students are urged to elect courses according to a definite plan, and with a definite object in view. Those looking forward to teaching or working in small towns or rural districts should bear in mind that the number of trained workers in any given department is likely to be small and the facilities limited. They should therefore use their choice of electives to acquire knowledge or skills that will be of immediate use to them in such communities. Courses in general agriculture, animal husbandry, commercial industries, industrial arts, foods, and clothing may prove to be the most beneficial as electives for such students. These are strongly recommended as electives for such teachers and workers.

SENIOR RESEARCH RULES

A candidate for the bachelor's degree in the School of Education and General Studies must satisfactorily complete a senior research project as part of the graduation requirement. This project may be written in the candidate's major or minor field.

Each candidate is required to take the research course at least one quarter preceding the quarter in which he expects to graduate. Thus, students wishing to graduate in the spring must take the course not later than the Winter Quarter; those wishing to graduate in August may wait until the Spring Quarter preceding graduation.

The student is required to finish the research project by the end of the quarter during which he takes Research 246. If, however, circumstances over which he has no control prevent him from completing the project in that time, it must, nevertheless, be completed on or before May 15 in the case of persons expecting to graduate in the spring. If a candidate for graduation in August is unavoidably prevented from completing his paper while taking the course, he must finish it two weeks before the date of graduation.

COURSES PRELIMINARY TO ADMISSION TO MEDICAL COLLEGE

This institution has been rated as class "A" by the American Medical Association and is qualified to offer pre-medical training. Students completing the prescribed course will be required to pass the national medical school admission test and the graduate record examination.

All students planning to study medicine are urged, therefore, to complete the four-year course and receive a degree before entering a medical school.

PRE-MEDICAL COURSE

Students are advised to select subjects in college which assure a broad background for later medical study rather than merely confining themselves to courses and fields required in the medical curriculum. Electives should include psychology, political science, history, economics, sociology, and mathematics.

The following represents the minimum requirements in general for admission to class "A" Medical Schools:

	Quarter Hours
*Chemistry (inorganic)	15
Chemistry (organic)	10
Physics	15
Biology	12
English (composition and literature)	15
A modern foreign language (a reading knowledge)	12
Electives	10–18

*Pre-medical students and majors or minors in Chemistry should register for Chemistry 111, 112, and 113 in successive quarters.

SCHOOL OF ENGINEERING

J. M. Marteena, *Dean*

The organization of the School of Engineering includes, for the purposes of administration, the Departments of Architectural Engineering, Electrical Engineering, Mechanical Engineering, Engineering Mathematics, Engineering Physics, Business, Fine Arts, and Industrial Education. This organization enables the school to offer vocational, scientific and engineering instruction to help prepare students to meet the needs of the people, of industry and of the various technical and professional fields.

The curricula offered include four-year courses of study leading to the Bachelor of Science Degree as well as professional courses required by the State Board of Education for the standard "A" grade teaching certificate in many fields.

To keep pace with the increasing demands of industry, society and progressive education, the school is rapidly improving its staff and expanding its facilities and physical plant.

ADMISSION TO THE SCHOOL OF ENGINEERING

The admission requirements are generally the same as those given for entrance to the freshman class. One year of algebra and one year of plane geometry are required for students electing a curriculum leading to a B.S. degree. Students admitted with conditions in any subjects will be required to remove them during their freshman year.

Students electing an engineering curriculum are required to have credit in Solid Geometry in addition to the above requirements.

ADVANCED STANDING

Students who have attended a college of approved standing will be given appropriate credit for work completed there, upon the presentation of the proper certificate to the Registrar, who will determine the credits which are transferrable toward the curriculum which the student wishes to follow.

REQUIREMENTS FOR GRADUATION

The requirements for graduation in any division of the School of Engineering are the satisfactory completion of all courses in one of the prescribed curricula.

OUTLINE OF THE FIRST YEAR'S WORK OF ALL FOUR-YEAR CURRICULA IN ENGINEERING

In order to permit all students in the School of Engineering to find out definitely what courses they desire to pursue, the first year of all four-year curricula is made uniform.

An inspection trip to visit such industrial installations as a hydro-electric plant, a turbo-electric plant, a steel or aluminum manufacturing and fabrication plant, outstanding construction projects, etc., will be required for graduation in all curricula of engineering.

The inspection trip will be planned by the heads of the various departments of engineering for senior students and will take place during the Winter quarter of each year.

A fee of fifty ($50.00) dollars will be charged all senior students in engineering to cover expenses for this trip.

Freshman Year

Course and No.	*Fall*	*Winter*	*Spring*
Chemistry 111, 112, 113*	5(3–4)	5(3–4)	5(3–4)
Mathematics 311, 312, 313‡	5(5–0)	5(5–0)	5(5–0)
English 211, 212, 213	5(5–0)	5(5–0)	5(5–0)
Mechanical Drawing, M.E. 311, 312	3(0–6)	3(0–6)	.....
Descriptive Geometry, M.E. 314	.....	.....	3(1–4)
†Military or Air Science, 211, 212, 213	2(2–2)	2(2–2)	2(2–2)
	20	20	20

*Students in Fine Arts and Industrial Education are not required to take Chemistry 113. Students in Industrial Education will take I.Ed. 325 and music in their Freshman year.

‡Students in Fine Arts may substitute History 213 for Math 313 and Art 320 for Chemistry in the Spring Quarter.

†Students who are exempt from military or air science are required to take other courses to make up the 12 credit hours.

THE SCHOOL OF NURSING

WILLETTA S. JONES, *Dean*

The School of Nursing was established by the Legislature in 1953 and offers a four-year basic program consisting of two academic and two calendar years and leading to a Bachelor of Science Degree in Nursing.

The program is built upon the principles that the education of nurses within the collegiate organization must provide not only for scientific and technical skills but also for development in social responsibilities and general cultural attributes. These aspects of education for the student nurse must be as well integrated as possible.

The program is planned to prepare the student for assuming expanding responsibilities in nursing, in inter-professional teams, and in community living. To achieve this goal, experiences will be provided to assist the student in developing technical skills, ability in communications and cooperative group endeavors, and in understanding physical, psychological and social aspects of health and disease and their application in the solution of health problems.

The School of Nursing is organized and administered on the same basis as other schools in the College. The College assumes full responsibility for theoretical and clinical aspects of the program in nursing and it provides for the students in nursing to share with the other students all the facilities and resources of the College.

OBJECTIVES OF THE SCHOOL OF NURSING

1. To develop in the student the knowledge and skills essential to function effectively in staff level positions in hospitals, in public health agencies, and in the home caring for the sick.
2. To develop in the student an understanding of, and ability to impart to others, the importance of health conservation and prevention of disease.
3. To assist the student in her own personal development and ability to contribute to improved community living.
4. To guide and assist the graduating students in obtaining positions in those areas of nursing in which they have shown aptitude.

ADMISSION TO THE SCHOOL OF NURSING

A. *Educational Requirements*

Candidates for the School of Nursing must:

1. Meet the general entrance requirements of the College.

2. Be graduated from an accredited high school.
3. Present a satisfactory record of achievement in their high school work.
4. Show satisfactory performance on the Pre-nursing and Guidance Test Battery.

B. *Personal Qualifications*

1. Age—it is desirable that applicants be between 17-30 years of age. All applications, however, will be considered on an individual basis.
2. Marital status—qualified married applicants will be considered together with other applicants. Married students should be aware that no special concessions in arrangements of time and responsibility will be made.
3. Health—applicants must present evidence of good physical and mental health (Medical and dental examinations are required).

VACATIONS*

Freshman year.....Same as College Calendar
Sophomore year.....Four weeks during the summer
Junior year.....Four weeks during the summer
Senior year.....Graduation in May

PROCEDURE FOR ADMISSION

1. Apply to: Dean, School of Nursing
   The Agricultural and Technical College
   Greensboro, North Carolina
2. The following forms will be sent to the applicant:
   a. Application for Admission.
   b. Pre-entrance Medical Record
   c. Pre-entrance Dental Record
   d. Estimate of Behavior Traits
   e. Secondary School Record (to be completed by the high school principal). These forms must all be completed and returned to the School of Nursing as early as possible in the year the student expects to enter.
3. Upon receipt of all the above forms by the School of Nursing, an application card and specific information for taking the Pre-Nursing Test will be sent to the applicant.

*Summer vacations in the Nursing School do not always coincide with normal vacation period since the students are always required to attend Summer School two sessions.

4. A personal interview is desirable. Applicants who live in Greensboro or vicinity will be interviewed.

5. The School of Nursing will review and evaluate all of the above information and will select those students who seem to possess the necessary qualifications for pursuing the professional nurse program.

DATE OF ADMISSION

Students are admitted to the School of Nursing in the fall quarter of each year.

Transfer students may be considered for admission in the winter quarter.

THE PROGRAM IN NURSING

Approximately equal parts of general and professional education comprise the program. The sequence of the courses is so planned that the major amount of general education is given in the first four quarters. The program in professional education gradually increases with each successive quarter.

Clinical experience begins with nursery school laboratory during the freshman year. Supervised practice in hospitals and health agencies in the community and throughout the State, is provided during the remainder of the four years.

SAMPLE SCHEDULE

The following is an illustration of the typical program for the freshman year:

Courses	*Fall*	*Winter*	*Spring*
English 211, 212, 213	5(5–0)	5(5–0)	5(5–0)
Chemistry 107, 108	5(3–4)	5(3–4)	.....
Child Development	4(2–4)	.....	.....
History of Nursing N11HN	2(2–0)	.....	.....
Orientation to Nursing N11ON, N12ON	2(2–0)	2(2–0)	.....
Physical Education 21ON	.....	1(0–4)	.....
Zoology 111	.....	5(3–4)	.....
Anatomy and Physiology 121	.....	.....	5(3–4)
Microbiology 112	.....	.....	5(3–4)
Nursing Seminar N13NS	.....	.....	2(2–0)
	18	18	17

DESCRIPTION OF COURSES

History of Nursing. *N11Hn. 1(1-0).

Designed to assist the student in acquiring a knowledge and appreciation of the development of the nursing profession in the perspective of general history.

Orientation to Nursing. N11ON. 2(2–0); N12ON. 2(2–0).

A two-quarter course designed to assist the student in developing professional understanding with emphasis on moral and social responsibilities and an appreciation of interpersonal relations in nursing.

Child Development. N12CD. 4(2–4).

A study of the growth and developmental needs of the child from birth to early childhood; laboratory experiences with children to aid the student in gaining a better understanding of the behavior of various age groups.

Nursing Seminar. N13NS. 2(2-0).

To review and correlate principles learned in the basic arts and sciences and apply them to nursing situations.

Introduction to Drugs and Solutions. N21DS. 1(0-2).

Review of fundamental principles of arithmetic; study of the measurement of dosage, methods of administering medicines and uses of antiseptics and disinfectants in the care of patients.

Nursing Fundamentals. N21NF. 5(3–4); N22NF. 2(0–4); N23NF. 1(0–2).

A foundation course designed to assist the student in acquiring and developing knowledge, skills, and understandings essential to basic professional care of the patient. Continues through three quarters and correlated with medical and surgical nursing.

Pharmacology. N22Ph. 2(0-4); N23Ph. 1(0-2); N31Ph. 1(0-2); N32Ph. 1(0-2).

Study of the principles of drug therapy including the newest chemotherapeutic and antibiotic agents. Correlated with units in medical and surgical nursing for four quarters.

Medical Nursing. N22M. 2(2-0); N23M. 4(4-0); N31M 3(3-0); N32M. 2(2-0).

A study of the causes, pathology, prevention and treatment of medical conditions and the related emotional, social and rehabilitative as-

*N denotes school. Letters following numbers identify subject.

pects essential in understanding how to meet the nursing needs of individual patients. Course extends over four quarters, correlated with surgical nursing. Supervised clinical practice—24 weeks.

Diet in Health and Disease. N22DT. 5(4-2); N23DT. 5(4-2).

A study of dietary modifications necessary in the treatment of pathological conditions. Emphasis on the individual and cultural needs of patients. Approximately 75 hours—guided experience.

Surgical Nursing. N22S. 2(2-0); N23S. 2(2-0); N31S. 5(5-0); N32S. 2(2-0).

Study and guided practice in the care of the surgical patient. Includes gynecological, orthopedic and neurosurgical conditions; and the emergencies resulting from atomic disaster. Course extends over four quarters. Supervised clinical practice—24 weeks.

Psychiatric Nursing. N24Psy. 10(10-0).

A study of the dynamics of human behavior with emphasis on pathological manifestations, and rehabilitative measures employed. Supervised clinical experience—12 weeks.

Operating Room Nursing. N31OR. 4(4–0).

The principles of operative and aseptic technique and practice as a surgical assistant. Supervised clinical practice—12 weeks.

Obstetric Nursing. N33Ob. 4(4–0); N41Ob. 4(4–0).

A study of the physiological conditions of the ante-natal, natal and post-natal phases of pregnancy; the complications which may arise; the nursing care of mothers and infants. Course continues through two quarters. Guided experience—12 weeks.

Pediatric Nursing. N32Ped. 5(5-0); N33Ped. 4(4-0).

General study of the child in health and disease, from the preventative and curative aspects. Integration of biological, physiological, social and nutritional sciences. Includes communicable disease nursing. Course continues through two quarters. Guided practical experience—12 weeks.

Public Health Nursing. N32PH. 3(3-0); N33PH. 3(3-0).

A study of the basic principles of public health nursing, including epidemiology, vital statistics, organization and administration of a health agency. Course progresses through two quarters. Eight weeks guided experience in a public health agency.

Tuberculosis Nursing. N34Tb. 7(7–0.)

Introduction to principles and practice of tuberculosis nursing with emphasis on treatment and rehabilitation of the individual patient. Clinical experience under supervision—8 weeks.

Senior Conference. N43SC. 3(3-0).

A study of trends involving legal aspects, economic security and areas of employment for the professional nurse.

THE GRADUATE SCHOOL

F. A. WILLIAMS, *Dean.*

More than sixty years ago, in 1891, the North Carolina General Assembly took the first step in the development of anticipated Graduate Education by providing for the establishment of The Agricultural and Technical College of North Carolina, an institution in practical agriculture, the mechanic arts and such branches of learning related thereto, not excluding academic and classical instruction. Since that time, the expansion of the institution has been both steady and rapid. Graduate education was not authorized at the college until 1939, when the North Carolina Legislature provided that the college offer graduate training in agriculture, technology, applied sciences and allied areas of study. Through these sixteen years the Graduate School has cooperated to the fullest with the state and the body politic in preparing teachers and other professional and semi-technical workers to qualify under the state certification requirements and to develop competencies desired in other vocations. Presently, the Graduate School endeavors to offer graduate education to prepare students to become:

1. Teachers of vocational agriculture particularly in the public schools of North Carolina and the South.
2. Instructors of general agriculture in southern colleges.
3. Instructors in special teaching programs in agriculture.
4. County and assistant county agents in North Carolina and other southern states.
5. Specialized workers in other agricultural industries.
6. Teachers of industrial arts in the public schools of North Carolina and the South.
7. Instructors of trades in the secondary schools of the South.
8. Instructors in certain applied sciences in the smaller colleges of the nation.
9. Administrators or supervisors in the public school system of North Carolina and other states.
10. Competent teachers of science in the secondary schools of the nation.
11. Efficient teachers for all levels of public education.
12. Research workers in the field of rural education.
13. Individuals rooted in the art and science of self-development for job security in various areas of employment.
14. Persons qualified for advanced study at other colleges and universities.

The Graduate School also seeks to enable graduate students to:

1) broaden their knowledge of a given area of study, 2) increase their competence in a selected area of study, 3) develop power and interest in self-improvement, 4) become imbued with a true spirit of research, and 5) become widely read in those fields related to their chosen field of study.

The office of the Graduate School is located in Room E, Dudley Hall. The office is open from 8:30 a.m. to 5:00 p.m. daily, except Saturday. On Saturday, the hours are from 8:30 to 12:00 a.m.

ORGANIZATION

The Graduate School is under the administration of the Dean of the Graduate School, the Graduate Council, the Thesis Committee, and Examining Committees.

GRADUATE OFFERINGS

Graduate courses are offered in the areas of Agricultural Education, Industrial Arts Education, Rural Education and other areas of applied education and science. In addition to these regularly established programs of graduate studies, other courses in agriculture, technical and applied sciences may be pursued with the approval of the Graduate School.

ADMISSION TO GRADUATE STUDY

Persons interested in entering graduate study at this institution should obtain an *Application for Admission* blank from either the Graduate School or the College Registrar.

Applicants from the Agricultural and Technical College of North Carolina, or from an accredited college or university requiring substantially the same undergraduate program as is required at this college, may be admitted to full graduate standing pending approval for candidacy.

Graduate students with relatively low grades on their undergraduate record from any institution will be assessed an entrance penalty of from six to nine quarter hours. *Application for Admission* to graduate study and two transcripts of the applicant's undergraduate record must be submitted to and approved by the Registrar in advance of registration. Admission to graduate study does not admit a student either to a particular major or to candidacy for the Master's degree.

Unconditional or Full Admission. Graduate students will be admitted unconditionally if they meet the following requirements:

1. Hold a baccalaureate degree from an accredited institution representing not less than four years or the equivalent of undergraduate work.

2. Hold or be preparing to hold a teaching certificate in the field of their specialized area of teacher education.

3. Have completed not fewer than twenty-seven (27) quarter hours of professional education.

4. Have maintained an average grade of C in their undergraduate work.

Conditional or Temporary Admission. Graduate students who are unable to meet requirements for unconditional admission, may be granted *conditional or temporary admission* under the following conditions:

1. Have been graduated from a non-accredited institution; or, if their undergraduate record is not wholly satisfactory, they may be permitted to enter graduate work conditionally, but they will be allowed to continue taking graduate work only if, in the first fifteen (15) quarter hours of graduate work taken in the Graduate School, the quality of work is satisfactory.

2. Have had less than twenty-seven (27) hours of undergraduate work in education; they may make-up the deficiency by taking additional undergraduate courses or by taking approved advanced undergraduate and/or graduate courses.

Graduate students who are admitted conditionally, may be required by the Graduate School to pursue additional course work.

Admission to graduate study does not imply admission to candidacy for an advanced degree. Such candidacy is determined after students have demonstrated their ability to do work of graduate quality as shown in the passing of a qualifying examination.

Admission of Non-Candidates for Degrees. Graduate students who are not expecting to become candidates for a graduate degree or for a professional certificate requiring graduate study may be admitted to certain graduate courses even though they do not hold the baccalaureate degree and may not have fifteen (15) quarter hours of undergraduate education courses. Normally, only mature persons who have special professional interest will be admitted under these conditions.

Rejection. Applicants for admission to graduate study may be rejected by the Graduate School if their undergraduate record is such as to indicate that there is little probability that they will successfully complete their selected graduate course of study. They will also be requested to withdraw from the Graduate School if, after admission,

their personal qualifications or scholarship do not continue to be acceptable. They will also be denied the privilege of continuing graduate work if their social behavior reflects upon the moral tone of the college.

VETERAN'S ADMISSION

The United States Veterans Administration has approved the Agricultural and Technical College of North Carolina as an institution for training under Public Law 16—Vocational Rehabilitation Act and Public Law 346—the Service Men's Readjustment Act of 1944 (G. I. Bill of Rights) and Public Law 550. The College, accordingly, encourages the enrollment of Veterans and offers its facilities to those qualified for attendance to the full extent of its accommodations in its Graduate School. The rules for admission and continued registration for demobilized students are, in general, the same as those operative for other students.

REGISTRATION AND ASSIGNMENT

Graduate students who have been admitted to full-time graduate study, register, obtain their assignments from the Dean of the Graduate School, and pay their fees during the regular registration periods.

Not more than fifteen quarter hours, including research, may be assigned in a single quarter. In-service or part-time graduate students follow the same procedure as full-time graduate students.

REQUIREMENTS FOR MASTER OF SCIENCE DEGREES

When graduate students pursue work in the Graduate School, they may work toward either of two graduate programs in education. They may work toward a Master of Science with a thesis, or toward a Master of Science without a thesis.

General Requirements. Students may meet specific residence requirements for each degree offered in the Graduate School by taking courses offered in the regular or summer sessions, as well as Evening and Saturday courses or a half-quarter of residence by pursuing courses offered in the Graduate School's Off-Campus centers.

Graduate students who take full-time work will normally take fifteen (15) quarter hours each quarter or 9 quarter hours during six weeks summer session. However, if graduate students are employed full-time, they may not take more than six quarter hours of graduate work per quarter toward their degree.

The minimum requirements of candidates for the Master's degree is one academic year. Most times a longer period of residence will prove necessary.

Not more than nine (9) quarter hours of credit toward the Master's degree may be allowed for acceptable graduate work completed elsewhere. Such credit cannot therefore shorten the minimum period of full-time residence work required at the Agricultural and Technical College of North Carolina.

All work offered for the Master's degree, whether in the regular academic year or in the Summer Session, must be completed within a period of six years from the time the graduate program was started.

Program of Study. At the time of admission to the Graduate School, students on the advice of the Dean, may be assigned to an adviser who advises them throughout their course. This assignment is usually made after the student has successfully passed the qualifying examination. The choice of an adviser is largely determined by the student's major subject or field.

The program of study may consist of courses chosen from one department or it may include such cognate courses from other departments as may in individual instances seem to offer greatest immediate and permanent values.

Admission to Candidacy. To become admitted to candidacy for a degree, a student must have been unconditionally admitted to graduate standing, and must have been approved by his adviser and the Dean of the Graduate School for his particular area of study. Candidacy is based on an examination of the student's undergraduate record and on the passing of a qualifying examination. The minimum prerequisite is 15 quarter hours over and above any entrance deficiencies or penalties. All arrangements and agreements are tentative until the student has been admitted to candidacy for a degree.

Course Examinations. Final examinations are administered at the close of each quarter or summer session.

Qualifying Examinations. On the completion of fifteen (15) quarter hours of graduate work, graduate students are required to take a qualifying examination which includes:

a. An appraisal of the prospective candidate's college record.
b. An examination of the student's graduate work.
c. A 500-word, or more, written composition on some assigned subject. This is done one-half hour before the oral examination is administered.
d. An oral examination of not less than one hour which usually includes:
    1. Questions on general education.
    2. Questions on educational methods and procedure.

3. Questions on the student's subject matter specialty including his specific subject matter and educational areas.
4. Questions on current socio-economic problems and current literature in the prospective candidate's field of study.
5. Questions which will demonstrate the student's ability to do creative or reflective thinking.

MASTER OF SCIENCE WITHOUT A THESIS

Graduate students who do not wish to write a thesis as a part of their master's degree requirements should meet the following requirements:

1. They should be admitted unconditionally to graduate study in the Graduate School, or, if they are allowed to enter conditionally, they should have removed the conditions satisfactorily.
2. They should successfully pass the qualifying examination.
3. They should complete a total of fifty-four (54) quarter hours of required graduate work.
4. They should include in the fifty-four (54) quarter hours of graduate work for their degree a minimum of twenty-seven hours of prescribed work in education.
5. They should earn from fifteen (15) to eighteen (18) quarter hours of graduate work related to their teaching field.
6. They should earn from nine (9) to twelve (12) hours in electives, or specialized professional courses as prescribed in their area of teacher education.
7. They must maintain an average scholarship of B in their graduate program.
8. They are not required to take a foreign language.
9. They should prepare an investigative paper and present in Education 632, Seminar in Educational Problems.
10. They must complete all the work to be applied toward the degree within a period of six calendar years.
11. They should attend the *Annual Commencement Exercises.*

The Investigative Paper. The investigative paper should represent mature judgment and a command of the technics generally associated with the broadening of one's knowledge involved in gathering, organizing and interpreting data in the library.

Graduate students should present their investigative problem to their adviser, together with an outline and a statement of the pro-

cedure. After the topic has been approved by your adviser, students should complete and present their paper in *Education 632, Seminar in Educational Problems.* A guide for the preparation of the investigative report has been prepared by the Graduate School.

After students have presented their paper to the seminar, they should have the original copy bound and deposited with the Graduate School.

General Instructions or Steps for the Non-Thesis Plan are as follows:

1. Be enrolled as a permanent qualified graduate student.
2. Be a certified graduate candidate by having successfully passed the qualifying examination.
3. Secure from the Graduate School and file a declaration blank as to the non-thesis plan of graduate study.
4. Have an adviser for consultation on the *written report.*
5. Enroll in Education 612, Techniques of Educational Research.
6. Secure the approval of the title of the written report from the adviser.
7. Secure a copy of Regulations for *Graduate Written Reports* from the *Graduate Office.*
8. Complete (54) hours of graduate work including all required courses.
9. Secure clearance for final examination with respect to graduate credit by:
   a. Obtaining an official check on grades at both the *Graduate and the Registrar's Offices.*
   b. Obtaining a date and hour for the final examination from the Dean of the Graduate School.
10. Take (and successfully pass) the final examination.
11. Secure blanks from the *Graduate Office* for payment of graduation fees at the *Bursar's Office.*
12. Deposit four copies of the *corrected report* with the Graduate School.
13. Make plans to attend the *Annual Commencement Exercises.*

MASTER OF SCIENCE WITH A THESIS

Graduate students who wish to include the writing of a thesis as a part of their Master's degree requirements should meet the following requirements:

1. They should be enrolled as a qualified graduate student.
2. They should be a certified graduate candidate by having successfully passed the qualifying examination.

3. They should complete a total of forty-five quarter hours of prescribed graduate work including three (3) quarter hours for the thesis.
4. They should include in the forty-five (45) quarter hours of graduate work for their degree a minimum of twenty-one (21) to twenty-four (24) quarter hours of professional education.
5. They should earn from fifteen (15) to eighteen (18) quarter hours of graduate work related to their teaching field.
6. They should earn from three (3) to six (6) quarter hours elective work.
7. They should successfully defend a thesis proposal before the Graduate Committee on Thesis Proposals.
8. They must maintain an average scholarship of "B" in their graduate program.
9. They should pass a final examination in subject matter and the thesis.
10. They should prepare an acceptable abstract of the thesis.
11. They must complete all the work to be applied toward the degree within a period of six calendar years.

Thesis. The thesis must concern some problem in the graduate student's field of specialization. It should be in the nature of an original contribution through research in education regarded as an applied science. In some instances, it may be a mature and expert analysis and evaluation of existing knowledge as it applies to the larger problems in the area of education and other allied fields of study.

The thesis problem should recognize the following:

1. The problem should be of significance in its field.
2. The problem should be clearly defined.
3. The problem should raise distinct questions.
4. The data for the problem must be available to the student.
5. The problem should be within the ability of the student.
6. The problem should be in the student's field.

The thesis is expected to exhibit insight into a research problem and competence in the use of appropriate English, and scholarly methods.

The format of the thesis should follow the *Regulations for Thesis Writing* as set forth by the Graduate School.

Proposal. A thesis proposal is to be presented or defended before the *Committee on Thesis Proposals.* If the proposal is approved by the Committee, the thesis will be completed under the direction of the student's adviser. The thesis proposal should be in the format as set forth

in the *Regulation for Thesis Proposals*, the official manual of the Graduate School.

Abstract of Thesis. When graduate students file their thesis, they should also file four copies of an abstract of their thesis, not to exceed 2,000 words in length. The abstract should be approved by their adviser. The abstract will be published annually in the Graduate School's *Bulletin on Abstracts of Graduate Theses.*

General Instructions or Steps For The Thesis Plan are as follows:

1. Be enrolled on a permanent basis in the Graduate School.
2. Be a certified master's candidate by having passed the qualifying examination.
3. Secure from the Graduate Office and fill out a declaration blank for the thesis plan of study.
4. Have an adviser for consultation in regards to the research problem for the thesis.
5. Secure a copy of *Proposal Regulations* from the *Graduate Office.*
6. Prepare and successfully defend a thesis proposal before the Thesis Proposal Committee.
7. Secure a copy of *Thesis Regulations* from the *Graduate Office.*
8. *Enroll in Education 612.* This should be done during the student's third full-quarter of graduate study.
9. Complete the thesis and 42 hours of required course work.
10. Prepare an acceptable thesis abstract for publication in the *Graduate Bulletin of Abstracts.*
11. Apply for oral examination at the *Graduate Office.*
12. Secure clearance for final examination with respect to graduate credit by:
    a. Obtaining a check on grades at both the *Graduate and Registrar's Offices.*
    b. Obtaining a date and hour for the final examination at the *Graduate Office.*
13. Take (and successfully pass) a final oral examination on the thesis.
14. Secure blanks from the Graduate Office for payment of *graduation fees* at the *Bursar's Office.*
15. Deposit four corrected copies of both the thesis and abstract with the *Graduate Office.*
16. Make plans to attend the *Annual Commencement Exercises.*

FIELDS OF SPECIALIZATION IN GRADUATE EDUCATION

The Graduate School of the Agricultural and Technical College of North Carolina attempts to meet the professional needs and interests of graduate students in the basic fields of applied educational specialization which are adapted to the areas of study at the College. These

courses will count toward a Master's degree as well as a Master's certificate.

In taking graduate work in education, students may specialize in at least four areas of education; namely, Agricultural Education, Industrial (Arts) Education, Rural Education, and Rural School Administration and Supervision. Academic courses are offered in a number of fields depending largely upon the certification of graduate students.

Agricultural Education. Graduate courses are offered in agricultural education for teachers of vocational agriculture, county agents, community leaders, agricultural specialists, and other graduate students who are concerned with the broad problems of vocational education in the American society. The program is designed primarily to give a working knowledge for solving problems in rural living generally encountered by professional agricultural workers.

Industrial (Arts) Education. Graduate offerings in industrial arts education make it possible for graduate students to meet the peculiar needs and interests for this area of vocational specialization. In this area of study, students can take work that will prepare them (1) to serve as head of an industrial department in land-grant institutions, (2) to teach industrial arts and trades in high schools, junior colleges, senior colleges, technical and vocational institutes, (3) to supervise programs of industrial and vocational education in city and county public school systems, (4) to teach or supervise adult education programs in schools, colleges and industrial firms.

Rural Education. Persons who are teaching, or planning to teach in elementary and secondary schools and desire to take further work in those two levels of public school education, may prepare for a position as an effective classroom teacher, critic teacher, or special teacher. These courses lead toward requirements for the Master's degree and a Master's teaching certificate in North Carolina and other states.

Graduate students may select from several areas of academic subjects in rural education in order to qualify for various teaching specialties.

Rural Education (Administration and Supervision). Offerings in this area of rural education are designed primarily to give the basic understanding for becoming supervisors of instruction, principals of elementary and high schools, directors of curriculum, administration and supervision in colleges, and a variety of administrative and supervisory positions in all levels of education.

Graduate work in this area of educational specialization leads to both a Master's degree and a Master's certificate.

PROGRAMS OF STUDY IN GRADUATE EDUCATION

The graduate programs of the Agricultural and Technical College of North Carolina are organized in terms of major preparation in the fields of Agricultural Education, Industrial Arts Education, Rural Education and other areas of Applied Science and Technology.

Areas of graduate study as well as course programs should be selected in terms of undergraduate majors, teacher certification, undergraduate deficiencies and professional objectives.

Regardless of the student's area of study the following *Core Courses or Basic Areas of Educational Preparation* must be included in the student's graduate program, namely:

1. History of Education
2. Principles of Teaching
3. Curriculum
4. Educational Psychology

AGRICULTURAL EDUCATION

The requirements for the Master of Science degree with a major in Agricultural Education along with a North Carolina Graduate Teacher's Certificate are as follows:

The No Thesis Plan. Fifty-four (54) quarter hours are required under the no thesis plan with a distribution of credits as follows:

1. Core Program ..... 12 quarter hours
   a. Education 605, Principles of Teaching ..... 3 hrs.
   b. Education 606, The Curriculum ..... 3 hrs.
   c. Education 607, History of Education ..... 3 hrs.
   d. Psychology 621, Educational Psychology ..... 3 hrs.
2. Other Professional Courses ..... 12 quarter hours
   a. Education 608, Philosophy of Education ..... 3 hrs.
   b. Education 623, Educational Sociology ..... 3 hrs.
   c. Education 631, Educational Statistics ..... 3 hrs.
   d. Education 632, Seminar in Educational Problems ..... 3 hrs.
3. Academic Program ..... 18 quarter hours
   (Including Agronomy, Horticulture, etc.)
4. Professional Program in Agricultural Education 12 quarter hours
5. Written Report (investigative paper)

The Thesis Plan. Forty-five (45) quarter hours are required under the thesis plan with a distribution of credits as follows:

1. Core Program ..... 12 quarter hours
   (Same as non-thesis plan)

2. Academic Program ..... 18 quarter hours
   (Including Agronomy, Horticulture, Poultry, etc.)
3. Professional Program ..... 12 quarter hours
   (Courses in Agricultural Education)
4. Thesis (Original research) ..... 3 hrs.

INDUSTRIAL (ARTS) EDUCATION

The requirements for the Master of Science degree in Industrial Arts Education along with a North Carolina Graduate Teacher's Certificate are as follows:

The No Thesis Plan. Fifty-four (54) quarter hours are required under the no thesis plan with a distribution of credits as follows:

1. Core Program ..... 12 quarter hours
   a. Education, 605, Principles of Teaching ..... 3 hrs.
   b. Education 606, Curriculum ..... 3 hrs.
   c. Education 607, History of Education ..... 3 hrs.
   d. Psychology 621, Educational Psychology ..... 3 hrs.
2. Other Required Professional Courses ..... 12 quarter hours
   a. Education 608, Philosophy of Education ..... 3 hrs.
   b. Education 623, Educational Sociology ..... 3 hrs.
   c. Education 631, Educational Statstics ..... 3 hrs.
   d. Education 632, Seminar in Educational Problems .... 3 hrs.
3. Academic Program ..... 18 quarter hours.
   (Includes technical or shop courses in Industrial Arts)
4. Professional Program ..... 12 quarter hours
   (Professional courses in Industrial Education)
5. Written Report (investigative paper)

The Thesis Plan. Forty-five (45) quarter hours are required under the thesis plan with a distribution of credits as follows:

1. Core Program ..... 12 quarter hours
   (Same as non-thesis plan)
2. Academic Program ..... 18 quarter hours
   (Same as non-thesis plan)
3. Professional Program ..... 12 quarter hours
   (Same as non-thesis plan in Industrial Education)
4. Thesis (Original research) ..... 3 quarter hours

RURAL EDUCATION

The requirements for the Master of Science degree in Rural Education at the secondary level are as follows:

The No Thesis Plan. Fifty-four (54) quarter hours are required

under the non-thesis plan with a distribution of credit as follows:

1. Core Program ..... 12 quarter hours
   a. Education 605, Principles of Teaching ..... 3 hrs.
   b. Education 606, Curriculum ..... 3 hrs.
   c. Education 607, History of Education ..... 3 hrs.
   d. Psychology 621, Educational Psychology ..... 3 hrs.
2. Other Required Professional Courses ..... 18 quarter hours
   a. Education 608, Philosophy of Education ..... 3 hrs.
   b. Education 612, Techniques and Methods of Research .. 3 hrs.
   c. Education 623, Educational Sociology ..... 3 hrs.
   d. Education 631, Educational Statistics ..... 3 hrs.
   e. Education 632, Seminar in Educational Problems ..... 3 hrs.
   f. Guidance 601, Field of Guidance ..... 3 hrs.
3. Academic Program ..... 18 quarter hours
   (These 18 hours must be pursued in the student's certification area)
4. Electives (any area) ..... 6 quarter hours
5. Written Report (investigative paper)

The Thesis Plan. Forty-five (45) quarter hours are required under the thesis plan with a distribution of credits as follows:

1. Core Program ..... 12 quarter hours
   (Same as the non-thesis plan)
2. Other Required Professional Courses ..... 9 quarter hours
   a. Guidance 601, Field of Guidance ..... 3 hrs.
   b. Education 612, Techniques and Methods of Research . 3 hrs.
   c. Psychology 622, Measurements and Evaluation ..... 3 hrs.
3. Academic Program ..... 18 quarter hours
   (Same as under the non-thesis Plan)
4. Electives (any area) ..... 3 quarter hours
5. Thesis (Original research) ..... 3 quarter hours

The requirements for the Master of Science degree in Rural Education with emphasis on the elementary level are as follows:

The No Thesis Plan. Fifty-four (54) quarter hours are required under the non-thesis plan with a distribution of credits as follows:

1. Core Program ..... 12 quarter hours
   (Same as other programs)
2. Other Required Professional Program ..... 18 quarter hours
   (Same as Rural Education at the Secondary level)
3. Academic Program ..... 15 quarter hours
   (Same as non-thesis program)
4. Electives (any area) ..... 9 quarter hours
5. Written Report (investigative paper)

The Thesis Plan. Forty-five (45) quarter hours are required under the thesis plan with a distribution of credits as follows:

1. Core Program ..... 12 quarter hours
   (Same as Rural Education at the secondary level)
2. Other Required Professional courses ..... 9 quarter hours
   (Same as Rural Education at the secondary level)
3. Academic Program ..... 15 quarter hours
   (These 15 hours should be pursued in academic work suitable for grades taught or planned to be taught)
4. Electives (any area) ..... 6 quarter hours
5. Thesis ..... 3 quarter hours

Requirements for the Master of Science degree in Rural Education with emphasis on administrative or supervisory level are as follows:

The No Thesis Plan. Fifty-four (54) quarter hours are required under the non-thesis plan with a distribution of credits as follows:

1. Core Program ..... 12 quarter hours
   (Same as other Plans)
2. Other Required Professional Courses ..... 36 quarter hours
   a. Education 608, Philosophy of Education ..... 3 hrs.
   b. Education 609, School Planning ..... 3 hrs.
   c. Education 612, Techniques and Methods of Research . 3 hrs.
   d. Education 622, Measurements and Evaluation ..... 3 hrs.
   e. Education 623, Educational Sociology ..... 3 hrs.
   f. Education 624, Elementary School Administration .... 3 hrs.
   g. Education 625, Elementary School Supervision ..... 3 hrs.
   h. Education 626, H. S. Administration ..... 3 hrs.
   i. Education 627, H. S. Supervision ..... 3 hrs.
   j. Education 631, Educational Statistics ..... 3 hrs.
   k. Education 632, Seminar in Educational Problems ..... 3 hrs.
   l. Guidance 601, the Field of Guidance ..... 3 hrs.
3. Academic Program (Social Science) ..... 3 quarter hours
4. Electives (any area) ..... 3 quarter hours
5. Written Report (investigative paper)

The Thesis Plan. Forty-five (45) quarter hours are required under the thesis plan with a distribution of credits as follows:

1. Core Program ..... 12 quarter hours
   (Same as for other areas in graduate education)
2. Other Required Professional Courses ..... 24 quarter hours
   (Same as under non-thesis plan, however, excluding Ed. 608, 623, 631 and 632)

3. Academic Program ..... 3 quarter hours
   (A social science course)
4. Electives (any area) ..... 3 quarter hours
5. Thesis (Original Research) ..... 3 quarter hours.

MASTER CERTIFICATES

Graduate students who desire to qualify for teaching and administrative and supervisory certificates for North Carolina, will find the qualifications to be as follows:

Graduate Certificates for Teachers:

I. Graduate Secondary Teacher's Certificates:
   A. Hold or be qualified to hold the Class A High School Teacher's Certificate.
   B. Have three or more years' teaching experience.
   C. Have a Master's degree from an institution of higher learning with recognized graduate standards approved by the State Department of Public Instruction. This would include:

	S. H.
1. Subject matter in the certificate fields	12
2. Education (philosophy, principles, curriculum, psychology, etc.)	6
3. Electives	12

II. Graduate Elementary Teacher's Certificate:
   A. Have or be qualified to hold the Class A Primary or Grammar Grade Certificate.
   B. Have three or more years' teaching experience.
   C. Hold a Master's degree from an institution of higher learning with recognized graduate standards approved by the State Department of Public Instruction. This credit would include:
      1. Academic work 6–12
         This should include subject matter in those fields in which there are manifest weaknesses in the equipment of the individual, as well as subject matter that would strengthen points already strong.
      2. Education (philosophy, principles, curriculum) 6
      3. Electives 12–18

Validity:

These certificates have the same validity as the Class A certificates. The Graduate Elementary Teacher's Certificate is valid for teaching in the elementary school, grades 1-8 inclusive, and the Graduate Secondary Teacher's Certificate is valid for teaching in the high school, grades 9-12 inclusive, the subject or subjects appearing thereon.

Renewal:

Initially the certificates are valid for a period of five years from date of qualification. The first renewal requires graduate credit for six semester hours, with at least one-half of the credit in Education. Subsequent renewals require six semester hours of graduate credit, as in the first renewal, or three years of teaching experience during the five-year renewal period.

III. PRINCIPAL'S CERTIFICATE:

A. Hold or be qualified to hold the Class A teacher's certificate (secondary or elementary).

B. Have three years' teaching experience within the past five years.

C. Hold a Master's degree from an institution of higher learning with recognized graduate standards approved by the State Department of Public Instruction.

D. Have credit for a minimum of 12 semester hours (18 recommended) of graduate work in Education selected from the following areas:

1. Fundamental Bases of Education
   a. The Curriculum, at least 2 semester hours required
   b. Human Growth and Development
   c. Social Foundations of Education
2. Instructional and Supervisory Techniques
   a. Principles of Supervision, at least 2 semester hours required
   b. Teaching Procedures
   c. Guidance and Pupil Personnel and Accounting
   d. Measurements
3. Organization and Administration
   a. High School Administration, at least 2 semester hours required
   b. Elementary School Administration, at least 2 semester hours required
   c. General Administration
   d. School Plant
   e. Staff Personnel
   f. Community Relations

E. Electives ..... 12–18 semester hours
This elective credit may be of the candidate's choice, subject to such requirements as the institution may have for the Master's degree, but it should be designed primarily to add to one's equipment as a teacher.

Validity:

The certificate is valid for the principalship of a strictly secondary school, union school, elementary school, for general supervision, and for teaching on whatever level requirements for teachers' certificates have been met. It is required for the principalship of classified schools, that is, schools with seven or more teachers. Information on any exceptions, if any, may be secured from the Division of Professional Service, State Department of Public Instruction, Raleigh, N. C.

Renewal:

Initially the certificate is valid for a period of five years from date of qualification. The first renewal requires graduate credit for six semester hours, with at least one-half of the credit in Education. Subsequent renewals require six semester hours of graduate credit, as in the first renewal or three years' experience as a principal or supervisor during the five-year renewal period.

IV. Supervisory Certificate:

Same requirements as for the principal's certificate.

OTHER INFORMATION ON GRADUATE EDUCATION

Grading System. The work of graduate students performed in connection with research work, and the thesis should be reported as "P" indicating progress until the work has been completed when a final grade is assigned. All other work is reported as "A" Excellent, "B" Average, and "C" Below Average. A grade below "C" is not accepted for graduate credit. A grade of "C" may be compensated by earning an "A" in another course. Should a candidate receive more than three grades below "B" the Dean of the Graduate School may request that the student discontinue graduate study.

Withdrawal From The College. Graduate students who desire to withdraw from the College must apply to the Dean of the Graduate School for permission to withdraw in good standing. If students leave the College at any time during the Quarter, without communicating with the Dean, he will be marked as having failed in all of his courses for the Quarter. No withdrawal from the College will be permitted after two weeks prior to the beginning of final examinations.

The written permission of the Dean shall be filed with the Registrar at once by the student in order that the proper entry may be made upon the College record.

Changes in Graduate Courses. Graduate students who desire to discontinue a course and/or add a course should procure three blanks entitled, *Approval of Change of Course* and have them signed by the Dean of the Graduate School and the Registrar. This should be done within

one week from the beginning of each quarter unless permission is granted otherwise by the Graduate School.

College Seniors. Regularly enrolled seniors who lack not more than nine quarter hours to meet requirements for graduation may register for additional courses to complete a normal schedule, in the Graduate School. Such additional courses may be counted towards the Master's Degree, after the Bachelor's Degree has been granted, but they will not be counted for meeting requirements for both the Bachelor's and the Master's Degree.

College Faculty—Staff and Graduate Work. Full-time members of the college staff with the president's approval may be permitted to register for not more than three hours, or one course, per quarter in the Graduate School, provided such would not interfere with their regular college duties.

Course Announcements. The quarter in which a course is to be offered will be found in the regular college graduate schedule of courses. The College reserves the right to discontinue any course for which the registration is not sufficiently large. As would be expected, at the graduate level, student demands frequently make it necessary to vary course offerings made in advance.

Responsibility of Graduate Students. The responsibility of course enrollment rests entirely upon the graduate students. They should read the regulations carefully, and should follow them in all matters.

Members of the faculty and the Dean of the Graduate School are always ready to advise students and assist in planning their study program, but they are not responsible for enforcing the regulations of the Graduate School.

Graduate Courses During the Summer. The College offers opportunities to pursue regular graduate courses leading toward the Master's degree during the summer in connection with the Summer School. Details regarding courses offered, facilities for study, and environment may be found in the Summer School Catalogue, a copy of which is available upon request to the Director of the Summer School or upon request to the Graduate Office.

GENERAL INFORMATION

Housing. The College provides housing accommodations for a limited number of graduate students. Information on housing for female students will be furnished by the Dean of Women. Requests for information on housing for male students should be directed to the Dean of Men.

Mature graduate students are able to obtain rooms at a reasonable

rate in private homes relatively near the college. Prospective graduate students who are married and desire housing should contact either the Deans of Men and Women or the Graduate Office.

The Library. The new college library is one of the largest in the state. The library provides a special research room and seminar room especially equipped for graduate students. It also provides an inter-library loan service through which graduate students may borrow materials from other libraries.

Fees and Tuition. Full-time graduate students pay the same fees as undergraduate students, while part-time students may pursue courses at a much more reasonable rate. (See Fees on page 53.)

Graduation Fee. Before receiving a Master's degree, students who follow the thesis plan are required to pay a graduation fee of $50.00 to cover the costs of library usage, diploma, thesis binding, and publication of an abstract. Graduate students who follow the non-thesis plan are required to pay a graduation fee of $25.00.

Off-Campus Graduate Centers. Graduate students who are teaching or are otherwise employed at distances too great to attend regular graduate on-campus courses for part-time students may be able to enroll in one of the *Off-Campus Centers* which are held in various locations in the state. These courses are taught by regular college professors and provide residence credit toward a Master's degree.

GRADUATE COURSES OF INSTRUCTION

Graduate courses are offered in the major departments of the College and are on single-term (quarter) basis.

Courses in the 500 series which may be pursued by graduate students are listed under the department of the three major colleges of the institution.

AGRICULTURAL ECONOMICS

601. Economics of Agricultural Production.
602. Farm Organization and Management.
603. Land Economics
604. Current Problems in Agricultural Economics.
605. Research in Agricultural Economics.

AGRICULTURAL EDUCATION

601. Administration and Supervision.
602. Curricular Construction in Vocational Agriculture.
603. History of Vocational Agriculture.

604. Community Problems in Agriculture.
605. Public Relations in Agriculture.
606. Research in Vocational Education.

AGRONOMY

631. The Soils of North Carolina.
634. Legumes and Grasses.
635. Crop Breeding.

ANIMAL HUSBANDRY

601. Research Studies in Animal Husbandry.
602. Poultry Research.
603. Seminar.

BACTERIOLOGY

601. Soil Bacteriology.
602. Dairy Bacteriology.

CHEMISTRY

601. Problems in Organic Chemistry.

EDUCATION AND PSYCHOLOGY

601. Theory of American Public Education.
602. Negro Education in the Bi-Racial System.
603. The County Training School.
604. The Small Negro Rural School.
605. Principles of Teaching.
606. The Curriculum.
607. History of American Education.
608. Philosophy of Education.
609. School Planning.
610. Special Workers and Services in Rural Education.
611. Audio-Visual Aids Program.
612. Techniques and Methods of Research.
613. Organization of Audio-Visual Programs.
613R. Problems in Rural Education.
614. Audio-Visual Aids Workshop.
615. Problems and Trends in Teaching Social Sciences.
616. Problems and Trends in Teaching Science.
617. Mental Hygiene for Teachers.
621. Educational Psychology.
622. Measurements and Evaluation.

623. Educational Sociology.
624. Elementary School Administration.
625. Elementary School Supervision.
626. High School Administration.
627. High School Supervision.
628a. Adult Education.
628b. Adult Education.
629. The Community College and Post-Secondary School Education.
630. Principles of College Teaching.
631. Seminar in Educational Problems.
632. Educational Statistics.

ENGLISH

601. Expository Writing.
602a. Studies in English Literature.
606b. Studies in English Literature.
603a. Problems in English.
604a. Aspects of American Literature.
604b. Aspects of American Literature.
605. Modern World Fiction.

GEOGRAPHY AND GEOLOGY

601. The Physical Universe.
602. Geology.
603. Geography of North America.
604. Conservation of Natural Resources.

GOVERNMENT

501. The Federal Government.
502. State and Local Government.
503. Government Finances.
505. The Constitution and Minorities.
506. Research and Current Problems.

GUIDANCE AND PERSONNEL WORK

601. The Field of Guidance.
602. Psychological Aspects of Guidance.
603. School and Community Guidance Programs.
604. Student Personnel: Program and Problems.
605. The Function of the Teacher in Guidance.
606. Case Work in Guidance.
607. Personnel Administration.
609. Guidance for Rural Youth.

610. Guidance in the School.
612. Techniques of Individual Analysis.
613. Techniques in Counselling.
614. Occupational Information.
615. Diagnostic Techniques in Guidance.
616. Administration of Guidance.
618. Guidance Laboratory (Practicum).

HISTORY

604. The Negro in the Reconstruction of the South.

INDUSTRIAL ARTS

608, 609, 610. Comprehensive Shop Problems.
611, 612, 613. Problems in Industrial Arts.
624. Laboratory Planning for Industrial Shops.

INDUSTRIAL EDUCATION

602. Current Problems in Industrial Education.
603. Industrial Psychology.
604. Supervision and Administration of Industrial Education.
605. Curriculum Laboratory in Industrial Education.
606. Research Problems in Industrial Education.
620. Co-operative Training.
631. General Industrial Education Programs.

MATHEMATICS

601. Theory of Equations.
605. Statistical Methods.

ORNAMENTAL HORTICULTURE

601. Research in Crops.
602. Research in Soils.

PHYSICS

602. Heat.
605. Modern Physics.

POULTRY SCIENCE

601. Production Studies and Experiments.

VOCATIONAL EDUCATION

619. Techniques in Educational and Vocational Guidance.
622. Tests and Measurements in Vocational Education
628. Research in Special Problems.
631. The Teaching of Agriculture in the High School.

ZOOLOGY

601. Special Problems in Insect Control.

DESCRIPTION OF COURSES BY DEPARTMENTS

GENERAL AGRICULTURE

111. Orientation for Students in Agriculture. 1(1–0).

Designed to assist the student in getting adjusted to the college and in planning for a career in agriculture.

121. Supervised Job Experience. 9(0–45).

Designed to provide students pursuing the two-year terminal curricula with an apprenticeship experience in the special vocation they plan to enter. Each student required to spend a minimum of twelve weeks working full time in an approved job situation.

122. Supervised Job Experience. 3 credits.

Registration concurrently with 121; assigned reading; record of observations and personal experiences; personal evaluation of own work, and reports.

DEPARTMENT OF AGRICULTURAL ECONOMICS AND RURAL SOCIOLOGY

VERNON C. JOHNSON, *Chairman*

The Department of Agricultural Economics and Rural Sociology offers courses in farm management, marketing, land economics, agricultural statistics, agricultural prices, financing and credit arrangements, agricultural legislation, and rural sociology.

The Department offers a curriculum leading to the degree of Bachelor of Science in Agricultural Economics. Courses are designed to develop techniques for analyzing rural technical and social problems, to prepare students for farming careers, and to lay a groundwork for those who wish to do graduate study.

Majors in the Department should follow the basic curriculum in agriculture for freshmen and sophomores.

Employment opportunities:

Federal and State governments employ many agricultural economists for domestic and foreign research and educational work. There is also a good possibility for employment with business organizations as salesmen, purchasing agents, and marketing specialists. Opportunities for trained farm managers and farm operators are likely to increase as farming becomes more complex.

CURRICULUM IN AGRICULTURAL ECONOMICS

Junior Year

Course and No.	*Fall*	*Winter*	*Spring*
Agricultural Economics 122, 123, 131	4(4–1)	4(3–1)	3(3–0)
Agricultural Economics 145, 142, 132	3(3–0)	3(3–0)	3(2–2)
Economics 232, 233, 234	5(5–0)	5(5–0)	5(5–0)
Mathematics 313, 321	5(5–0)	5(5–0)	.....
English 237	.....	.....	3(3–0)
Electives*	3(3–0)	3(3–0)	3(3–0)
	21	19	17

*Math 318 or courses of interest in Rural Sociology or Ag. Econ.

Senior Year

Course and No.	*Fall*	*Winter*	*Spring*
Agricultural Economics 148, 149, 050	3(3–0)	3(3–0)	3(2–2)
Agricultural Economics 146, 508, 510	2(2–0)	3(1–5)	2(2–0)
Rural Sociology 131, 501	3(3–0)	3(3–0)	.....
Political Science 231	5(5–0)	.....	.....
English 224, 225	.....	3(3–0)	3(3–0)
Psychology 221	.....	.....	5(5–0)
Electives	6( )	6( )	6( )
	19	18	19

122. Introduction to Agricultural Economics. Credit 4(3–2).

An application of the fundamental principles of economics to agricultural production, marketing, land tenure, leasing arrangements, financing and related economic problems.

123. Elements of Farm Management. Credit 4(2–4).

Principles which govern the effective organization and operation of the farm firm.

131. Marketing Agricultural Products. Credit 3(3–0).

Principles and practices of marketing as applied to farm commodities. Form, place, time and possession utility, the ultimate consumer's market, the agricultural industries market, the middleman system, exchange market operation and future contracts, price determination, reducing marketing costs and Federal Legislation as it applies to agricultural marketing. Visits will be made to local markets. Prerequisite: Ag. Econ. 122.

132. Agricultural and Social Statistics. Credit 3(2–1).

Making use of Census data, statistical methods. Calculating machines used extensively. Prerequisite: Ag. Econ. 122.

141. Farm Records and Accounts. Credit 3(2–2).

Methods and practices employed in taking farm inventories, filing income tax returns, receipts and expenditures, preparing financial statements. Single enterprise accounts and the use of farm accounts as a method of indicating the efficiency of farm operations. Prerequisite: Ag. Econ. 122.

142. Financing Agriculture. Credit 3(3–0).

Risks and uncertainty as applied to agriculture, the role of agricultural credit in a money economy, classification of credit, principles underlying the economic use of farm credit, primary lending agencies in North Carolina, and the growth of Federal Lending agencies in the farm credit field. Prerequisite: Ag. Econ. 122.

145. Land Economics. Credit 3(3–0).

Isolates land as a factor of production, historical implications of land policies in the United States, land classification, land utilization, rights in land and the extent of public land ownership. Prerequisite: Ag. Econ. 122.

146. Land Income. Credit 2(2–0).

Historic and present theories of rent, the role of the landlord, principles of land evaluation, appraisal and taxation. Prerequisites: Ag. Econ. 122, 145.

147. Cooperative Marketing. Credit 3(3–0).

Early cooperative movements, principles of cooperative, importance of cooperatives in the United States, problems of organization, management and operation of cooperative endeavors by farmers in buying and selling. Prerequisites: Ag. Econ. 122, 131.

148. Agricultural Legislation. Credit 3(3–0).

The relationship between agriculture and government since the Northwest Ordinance of 1787 to the present; how this relationship has affected the farm business, price supports and other policy which has an impact upon agriculture. Prerequisite: Ag. Econ. 122.

149. Marketing Dairy Products. Credit 3(2–2).

Economic problems in procuring milk and cream, in processing and distributing fluid milk, cream and manufactured dairy products; marketing legislation, market news, market methods, including cooperation, consumer demand and price policy. Prerequisite: Ag. Econ. 131.

150. Farmer Movements. Credit 3(3–0).

A study of the history, formulation, and growth of the major farm organizations in the United States; the economic philosophy of these organizations and their methods of operation with respect to government. Prerequisite: Ag. Econ. 122.

Advanced Undergraduates and Graduates

501. Southern Resources in a Changing Economy—A Seminar. Credit 3(3–0).

Trends and the formulation of economic and social problems in the South, and particularly in North Carolina; labor and capital mobility, agriculture as compared with industry, the problem of underemployment, and important phases of current economic development. Prerequisites: Economics 231, Sociology 231 or Ag. Econ. 122.

502. Agricultural Policy. Credit 3(3–0).

The place of agriculture in a national and international economy; the impact of public policy on agriculture, an analysis of policy as it relates to the price support program, farm credit, international trade, aid to low income farmers, and resource development.

503. Farm Cost Accounts. Credit 3(2–2).

A study of records needed to determine the relative profitability of various agricultural enterprises, setting up and keeping running accounts of the farm business, interpretation and use of accounts in farm management.

505. Agricultural Prices. Credit 3(2–1).

Information regarding agricultural price changes, index numbers, price determination, seasonal and cyclical price movements, storage problems, and other methods of controlling extreme price fluctuations, government price policy.

506. Seminar in Marketing Farm Products. Credit 2(2–0).

Discussion, reports, consultation and research efforts which throw light on marketing problems of low income farmers in North Carolina, including National and International importance of locally grown products such as tobacco and cotton.

507. Advanced Agricultural Economics. Credit 3(3–0).

Methodology and the application of economic theoretical tools for analyzing problems in agriculture of domestic nature and also as regarding underdeveloped countries.

508. Special Problems in Agricultural Economics. Credit 3–6(0–6).

Designed for students who desire to work out special problems in the field of agricultural economics; problem definition and formulation; developing thesis proposals.

509. Advanced Farm Management. Credit 3(2–2).

Methods of research, plans, organization, and the application of principles as they relate to farm management. Part of the students' time will be spent on the college farm.

510. Seminar in Agricultural Economics. Credit 2(2–0).

Discussion, reports and an appraisal of current literature on agricultural problems. Consent of instructor.

RURAL SOCIOLOGY

131. Principles of Rural Sociology. Credit 3(3–0).

Social systems, cultural patterns and institutional arrangements of people in rural environments in relation to those of towns and cities.

Advanced Undergraduates and Graduates

501. Rural Social Problems. Credit 3(3–0).

Population, education, religion, health, land tenure, parity income, farm labor and mechanization, and housing.

502. Rural Leadership. Credit 3(3–0).

Opportunities and needs for rural leadership; educational and psychological requirements for various types of rural leaders.

503. The Rural Family. Credit 3(3–0).

The institutional nature of the rural family, etc., role in the community including its relations to educational, religious, welfare and other community organizations.

504. Community Organization. Credit 3(3–0).

Planning and organizing educational, health, recreational and religious activities for rural people.

505. Rural Standards of Living. Credit 3(3–0).

Consumption behavior in the man community groups of our society.

506. Special Problem in Rural Sociology. Credit 2 to 4 hours.

Work on a problem in rural sociology under the guidance of a member of the faculty.

DEPARTMENT OF AGRICULTURAL EDUCATION

C. E. DEAN, *Chairman*

The Department of Agricultural Education offers professional courses in agricultural education to prepare persons for teaching and related fields. The program has been developed to meet the certification requirements of teachers of vocational agriculture in North Carolina.

CURRICULUM IN AGRICULTURAL EDUCATION

Junior Year

Course and No.	*Fall*	*Winter*	*Spring*
Education 222	3(5–0)		
Psychology 202, 203		3(2–2)	3(3–0)
Agricultural Economics 122, 123	3(3–0)	3(3–0)	
Agricultural Engineering 123, 124		3(1–4)	3(1–4)
Animal Husbandry 132	5(3–4)		
Dairy Husbandry 123	3(2–2)		
English 224	3(2–2)		
Horticulture 132, 135		3(2–2)	3(1–4)
Soils 132		3(3–0)	
Botany 133			3(3–2)
Zoology 133			3(2–2)
Electives			3( )
Ag. Educ. 500, 503	3(2–2)	3(3–0)	
	18	18	18

Senior Year

Course and No.	*Fall*	*Winter*	*Spring*
Education 233, 237	3(3–0)		3(3–0)
Rural Sociology 131	3(3–0)		
Agricultural Education 141, 142	5(5–0)	5(5–0)	
Agricultural Education 501a, 143	3(3–0)		5(5–0)
Agricultural Education 501b		3(3–0)	
Animal Husbandry 144			3(1–4)
Political Science 211			3(3–0)
Animal Husbandry 135			3(3–0)
Agricultural Engineering 501		3(3–0)	
Electives	3( )	3( )	3(3
	17	14	20

AGRICULTURAL EDUCATION

141. Materials and Methods of Teaching Vocational Agriculture. 5(5–0).

Principles of teaching as applied to vocational agriculture; preparing lesson plans, and organizing teaching aids to meet community needs. Prerequisites: Education 222, Psychology 202 and 203.

142. Observation and Directed Practice Teaching. 5(5–0).

Student will be required to spend eight weeks in an approved training center doing observation and directed practice teaching. Prerequisite: Agricultural Education 141.

143. Problems in Teaching Vocational Agriculture. 5(5–0).

The discovery and analysis of problems in the field, program building, and evaluating instruction in vocational agriculture. Prerequisite: Agricultural Education 142.

Advanced Undergraduates and Graduates

500. Audio-Visual Aids in Vocational Agriculture. 3(2–2).

Techniques of preparing, using, and evaluating audio-visual aids in vocational agriculture.

501a. Materials and Methods of Teaching Out-of-School Groups. 3(3–0).

Methods and materials used in teaching young farmers and adult groups. Course includes developing various teaching devices and aids for instructing out-of-school groups. Prerequisites: Education 233, 237, Psychology 202, 203.

501b. Teaching Out-of-School Groups. 3(3–0).

Organizing, planning, and teaching out-of-school groups; including working with community committees and organizations and evaluating the outcomes with such groups. Prerequisite: Agricultural Education 501a.

502. Adult Education in Vocational Agriculture. 3(3–0).

Principles and problems of setting up and directing adults with emphasis on conducting organized instruction.

503. The New Farmers of America. 3(3–0).

The practices and procedures of setting up local, district and state organizations. Emphasis will be placed on training officers and members.

504. The Principles of Agricultural Education. 3(3–0).

The principles and practices in agricultural education as revealed by research and new trends.

505. Guidance and Group Instruction in Vocational Agriculture. 3(3–0).

Guidance and group instruction applied to agricultural occupations and other problems of students in vocational agriculture.

506. Problem Teaching in Vocational Agriculture. 3(3–0).

Setting up problems for teaching unit courses in vocational agriculture.

Graduates Only

601. Administration and Supervision. 3(3–0).

Administrative and supervisory problems of vocational agriculture, the practices and policies of local, state and federal agencies dealing with administration and supervision of vocational agriculture.

602. Program Planning in Vocational Agriculture. 3(3–0).

Consideration is given to the community as a unit for program planning in agricultural education. Special emphasis on collecting and interpreting basic data, formulating objectives, developing and evaluating community programs.

603. History of Vocational Agriculture. 3(3–0).

A brief review of vocational education in Europe and America; special attention is given to vocational agriculture as it has developed in the United States.

604. Community Problems in Agriculture. 3(3–0).

Finding the common problems of the community that relate to agriculture and developing solutions.

605. Public Relations in Agriculture. 3(3–0).

The means and methods of promoting and publicizing local programs in agriculture.

606. Research in Vocational Education. 3(3–0).

A research problem is developed under the supervision of the staff.

607. Philosophy of Vocational Education. 3(3–0).

This course deals with the underlying philosophy and basic principles of vocational education. Emphasis is placed upon the factors contributing to the nature, purpose, scope, organization, and administration of vocational education in agriculture.

608. Seminar in Agricultural Education. 3(3–0).

Includes a review of current problems and practices in the field of agricultural education.

AGRICULTURAL AND HOME ECONOMICS EXTENSION

141. Principles of Extension Education. Credit 3(3–0).

Background, development, and organization of the Agricultural and Home Economics Extension Service; principles underlying extension education; program building and techniques of teaching.

DEPARTMENT OF ANIMAL INDUSTRY

W. L. KENNEDY, *Chairman*

The Department of Animal Industry offers curricula leading to the degree of Bachelor of Science.

The curricula are designed to meet the diverse interests of students by offering a choice of several options of study in which the students may specialize. Students wishing a major in Animal Industry may concentrate in either of the following fields of specialty: Animal Husbandry, Dairy Husbandry, Dairy Manufacturing, and Poultry Husbandry.

The specialized options of the student are particularly well suited to equip them as owners and managers of general farms where livestock is handled, for specialized types of dairy and poultry farming, as instructors and investigators in Animal Industry.

Students who wish to major in the Department should follow the Basic Curriculum in Agriculture for the freshmen and sophomore years. Programs for the junior and senior years will be under the supervision of a faculty advisor assigned by the head of the department.

A two-year terminal course in Animal Industry is offered for those students who plan to remain in college only two years.

TWO-YEAR ANIMAL HUSBANDRY CURRICULUM

The two-year curriculum in animal husbandry is designed to prepare students for the following positions:

1. Livestock farm operators
   a. Tenants
   b. Owners
2. Herdsmen
3. Helpers in meat processing plants
4. Salesman for feed and livestock supplies

First Year

Course and No.	*Fall*	*Winter*	*Spring*
Animal Husbandry 111, 122, 124	3(2–2)	3(2–2)	3(2–2)
Dairy Husbandry 111	.....	3(2–2)	.....
Poultry Husbandry 111	3(2–2)	.....	.....
Agricultural Economics 123, 131	.....	4(2–4)	3(2–2)
Agronomy 131	.....	.....	3(2–2)
Agricultural Engineering 111, 122	.....	3(0–6)	3(1–4)
English 200, 201	3(3–0)	3(3–0)	.....
Math 309	3(3–0)	.....	.....
R.O.T.C. 211, 212, 213	2( )	2( )	2( )
Physical Education 208, 213, 219	1(0–2)	1(0–2)	1(0–2)
General Science 131, 132	4(2–4)	.....	4(2–4)
General Agriculture 111	1(1–0)	.....	.....
	20	19	19

Second Year

Course and No.	*Fall*	*Winter*	*Spring*
General Agriculture 121	9(0–45)	.....	.....
General Agriculture 122	3( )	.....	.....
Animal Husbandry 132, 133	.....	5(3–4)	3(2–2)
Animal Husbandry 142, 135	.....	4(2–4)	3(3–0)
Animal Husbandry 144	.....	.....	3(1–4)
Agronomy 140	.....	.....	3(3–0)
Political Science 211	.....	3(3–0)	.....
R.O.T.C. 220b, 220c	.....	2( )	2( )
Physical Education 210b, 210c	.....	1(0–2)	1(0–2)
Animal Husbandry 136, 134	.....	3(2–2)	3(2–2)
	12	18	18

CURRICULUM IN ANIMAL HUSBANDRY*

The four-year curriculum in animal husbandry is designed to prepare students professionally for the following:

1. Herdsman
2. Livestock farm operator
3. Meat inspector
4. Assistant in meat process plant
5. Graduate study
6. Government service

*Students follow Basic Agriculture Curriculum in Freshman and Sophomore years.

Junior Year

Course and No.	*Fall*	*Winter*	*Spring*
Agricultural Economics 122, 123, 131	4(3–2)	4(2–4)	5(5–0)
Animal Husbandry 124, 131, 132	3(2–2)	4(2–4)	5(3–4)
Zoology 142	3(3–0)	.....	.....
Animal Husbandry 134, 137	.....	3(2–2)	3(2–2)
Chemistry 121, 131	4(2–6)	5(3–6)	.....
Animal Husbandry 136	.....	.....	3(2–2)
Dairy Husbandry 141	.....	.....	3(1–4)
Electives	3( )	3( )	.....
	17	19	19

Senior Year

Animal Husbandry 133, 144	3(2–2)	.....	3(1–4)
Animal Husbandry 501, 142	5(5–0)	4(2–4)	.....
English 225	3(2–2)	.....	.....
Rural Sociology 131	3(3–0)	.....	.....
Field Crops 124, 131	.....	3(2–2)	3(2–2)
Bacteriology 144	.....	4(2–4)	.....
Dairy Husbandry 134	.....	3(2–2)	.....
Agricultural Economics 141	.....	.....	3(2–2)
Animal Husbandry 135	.....	.....	3(3–0)
Animal Husbandry 502	.....	1(1–0)	.....
Electives	3( )	3( )	6( )
	17	18	18

ANIMAL HUSBANDRY

111. Breeds of Livestock. 3(2–2).

Breeds of farm animals with reference to their origin and development.

122. Types and Market Classes of Livestock. 3(2–2).

The economic importance, classification and grading of cattle, sheep, swine, horses, and livestock products.

124. Swine Production. 3(2–2).

The place of swine in the farm program; their selection, breeding, care and management.

131. Physiology of Domestic Animals. 4(2–4).

Designed to acquaint students with structure and function of tissues, organs and systems of the animals.

132. Livestock Feeding. 5(3–4).

Principles of feeding and the composition of feeds; practice in formulating rations for the various classes of livestock.

133. Diseases of Farm Animals. 3(2–2).

The common diseases of livestock with reference to causes, prevention, and treatment.

134. Animal Breeding. 3(2–2).

A study of the principles of genetics as applied to the improvement of farm animals, and some of the methods and problems of the breeder.

135. Beef Production. 3(3–0).

Breeds of beef cattle, their selection, care, and management.

136. Sheep Production. 3(2–2).

The place of sheep in the farm program; their selection, breeding, care, and management.

137. Livestock Marketing. 3(2–2).

A study of the development of livestock markets, methods of marketing and seasonal trends will be considered. Field trips will be made to local livestock markets and slaughtering plants.

142. Farm Meats. 4(2–4).

Meat production from a market standpoint with laboratory work in the slaughtering, curing, and marketing of meat products.

144. Livestock Judging. 3(1–4).

Special training in points of selection of farm animals.

Advanced Undergraduates and Graduates

501. Animal Nutrition. 5(5–0).

Metabolism of carbohydrates, fats, proteins and minerals; net energy values and application to new theories of feeding.

502. Seminar. 1(1–0).

A review of current literature related to Animal Husbandry.

TWO-YEAR DAIRY HUSBANDRY CURRICULUM

The two-year curriculum in dairy husbandry is designed to prepare students for the following positions:

1. Dairy farm operators
   a. Owners
   b. Renter
   c. Helpers
2. Herdsman
3. Salesman for feed and dairy supplies

First Year

Course and No.	*Fall*	*Winter*	*Spring*
Dairy Husbandry 111, 134	.....	3(2–2)	3(2–2)
Dairy Husbandry 141	.....	.....	3(1–4)
Animal Husbandry 111	3(2–2)	.....	.....
Poultry Husbandry 112	.....	3(2–2)	.....
General Agriculture 111	1(1–0)	.....	.....
Agricultural Economics 123, 131	.....	4(2–4)	3(3–0)
Agronomy 124, 131	3(2–2)	.....	3(2–2)
English 200, 201	3(3–0)	3(3–0)	.....
Math 309	3(3–0)	.....	.....
Agricultural Engineering 111	.....	3(0–6)	.....
R.O.T.C. 211, 212, 213	2( )	2( )	2( )
Physical Education 208, 213, 219	1(0–2)	1(0–2)	1(0–2)
General Science 131, 132	4(2–4)	.....	4(2–4)
	20	19	19

Second Year

Course and No.	*Fall*	*Winter*	*Spring*
General Agriculture 121	9(0–45)	.....	.....
General Agriculture 122	3(1–4)	.....	.....
Dairy Husbandry 142	.....	3(2–2)	.....
Dairy Husbandry 146a, 146b	.....	3(0–9)	3(0–9)
Agricultural Engineering 122, 124	.....	3(1–4)	3(0–6)
Agricultural Engineering 132	.....	.....	3(1–4)
Animal Husbandry 132, 134	.....	5(3–4)	3(2–2)
R.O.T.C. 220b, 220c	.....	2( )	2( )
Physical Education 210b, 210c	.....	1(0–2)	1(0–2)
Political Science 211	.....	3(3–0)	.....
Agronomy 140	.....	.....	3(3–0)
	12	20	18

CURRICULUM IN DAIRY HUSBANDRY

The four-year curriculum in dairy husbandry is designed to prepare students professionally for the following:

1. Dairy farm operator
2. Herdsman
3. Extension specialist
4. Graduate study
5. Government service

CURRICULUM IN DAIRY HUSBANDRY

Junior Year

Course and No.	*Fall*	*Winter*	*Spring*
Agricultural Economics 122, 123, 131	4(3–2)	4(2–4)	5(5–0)
Animal Husbandry 132	.....	.....	5(3–4)
Dairy Husbandry 111, 122	3(2–2)	3(2–2)	.....
Animal Husbandry 133, 131	3(2–2)	4(2–4)	.....
Dairy Husbandry 134	.....	.....	3(2–2)
Zoology 142	.....	3(3–0)	.....
Chemistry 131	5(3–4)	.....	.....
Animal Husbandry 144	.....	.....	3(1–4)
Dairy Seminar 501a, 501b	1(1–0)	1(1–0)	.....
Electives	3( )	3( )	3( )
	19	18	19

Senior Year

Course and No.	*Fall*	*Winter*	*Spring*
Agricultural Economics 141	3(2–2)	.....	.....
Agricultural Engineering 124	.....	3(0–6)	.....
English 225	.....	3(2–2)	.....
Dairy Husbandry 141	.....	.....	3(1–4)
Animal Husbandry 124	3(2–2)	.....	.....
Bacteriology 144	.....	4(2–4)	.....
Dairy Husbandry 147, 148	3(2–2)	3(2–2)	.....
Animal Husbandry 134	.....	.....	3(2–2)
Agronomy 124, 131	.....	3(2–2)	3(2–2)
Dairy Husbandry 142, 146	3(2–2)	.....	3(0–6)
Electives	6( )	3( )	6( )
	18	19	18

CURRICULUM IN DAIRY MANUFACTURING

The four-year curriculum in dairy manufacturing is designed to prepare students professionally for the following:

1. Plant Managers
2. Dairy equipment salesman
3. Dairy laboratory technician
4. Plant operator
5. Dairy inspectors
6. Jobber's salesman
7. Government service

CURRICULUM IN DAIRY MANUFACTURING

Junior Year

Course and No.	*Fall*	*Winter*	*Spring*
Physics 312, 321	.....	5(3–4)	5(3–4)
Chemistry 121, 131, 132	4(2–6)	5(3–6)	5(3–6)
Dairy Husbandry 111, 122, 123	3(2–2)	3(2–2)	3(2–2)
Dairy Husbandry 142	3(2–2)	.....	.....
Agricultural Economics 123, 131, 149	4(2–4)	3(3–0)	3(2–2)
Dairy Husbandry 501a, 501b	1(1–0)	.....	1(1–0)
Electives	4( )	2( )	.....
	19	18	17

Senior Year

Agricultural Engineering 140	3(2–2)	.....	.....
Bacteriology 144	.....	4(2–4)	.....
Chemistry 146	.....	.....	5(3–6)
Dairy Husbandry 143, 130, 144	4(2–4)	3(2–2)	3(1–4)
Dairy Husbandry 140, 146	.....	2(0–2)	3(0–6)
English 225	.....	.....	3(2–2)
B.A. 321	5(5–0)	.....	.....
Dairy Husbandry 504	.....	2(2–0)	.....
Electives	6( )	7( )	4( )
	18	18	18

DAIRY HUSBANDRY

111. Principles of Dairying. 3(2–2).

The fundamental principles of dairying; type in dairy cattle; the composition of milk, its chemical and physical properties; sampling and testing of milk; selection and herd management.

122. Dairy Technology. 3(2–2).

The composition of milk and milk products; study of the Babcock test for fat in milk and cream and use of modified Babcock test for fat in other dairy products. Prerequisite: Dairying 111.

123. Dairy and Food Plant Sanitation. 3(2–2).

Principles and procedures, sanitary standards and regulations for milk and food products; equipment cleaning and detergents used for an effective job.

130. Dairy Plant Management. 3(2–2).

The organization and management of a dairy plant; procurement of raw supplies; plant layout, equipment for plants, distribution of products, cost of operation, and record keeping.

134. Dairy Cattle and Milk Production. 3(2–2).

Breeds of dairy cattle, their development, care and management.

140. Dairy Products Judging. 2(0–2).

Standards and grades of dairy products; practice in judging milk, cream, butter and ice cream.

141. Dairy Management. 3(1–4).

Designs and construction of dairy building; problems of economical milk production; fitting and showing dairy cattle.

142. Market Milk. 3(2–2).

The Market Milk industry, milk ordinances, city milk supply, transportation, grading, pasteurizing, bottling, and distribution. Prerequisite: Dairying 111, 122.

143. Advanced Dairy Technology. 4(2–4).

Theory of and practice in analytical methods used for control in dairy manufacturing plant. Prerequisite: Dairying 142.

144. Ice Cream Making. 3(1–4).

The principles involved in the manufacturing of commercial ice cream and ices.

146. Dairy Plant Practice. 3(0–6).

Assigned practice work at the college dairy and the milk and ice cream laboratories of the college dairy plant; given for both dairy manufacturing and dairy husbandry majors. Prerequisite: Three dairy subjects.

147. Dairy Breeds and Pedigrees. 3(2–2).

A study of dairy pedigrees and breed families; official testing and dairy herd improvement, and association method.

148. Dairy Cattle Judging. 3(2–2).

Characteristics of the dairy breeds and score-card requirements; relation of type, form and function to the value of selection. Practice judging.

Advanced Undergraduates and Graduates

501a, b. Dairy Seminar. 1(1–0).

Assignment of papers on subjects relating to the dairy industry and methods in preparing such papers.

504. Special Problems.

Assignment of work along special lines in which a student may be interested, given largely by the project method for individuals either in Dairy Manufacturing or Dairy Husbandry. Prerequisite: Three dairy subjects.

TWO-YEAR POULTRY HUSBANDRY CURRICULUM

The two-year curriculum in poultry husbandry is designed to prepare students for the following positions:

1. Poultry farm operators
2. Helpers in grading and processing plants
3. Salesman in equipment, feeds and supplies

First Year

Course and No.	*Fall*	*Winter*	*Spring*
Poultry Husbandry 111, 112, 122	3(2–2)	3(2–2)	3(2–2)
Agricultural Education 111	1(1–0)	.....	.....
Animal Husbandry 111	.....	.....	3(2–2)
Dairy Husbandry 111	.....	3(2–2)	.....
Agricultural Engineering 111, 122	.....	3(1–4)	3(1–4)
Agricultural Economics 123, 131	.....	4(2–4)	3(2–2)
General Agricultural 111	1(1–0)	.....	.....
English 200, 201	3(3–0)	3(3–0)	.....
Math 309	3(3–0)	.....	.....
General Science 231, 232	4(2–4)	.....	4(2–4)
R.O.T.C. 211, 212, 213	2( )	2( )	2( )
Physical Education 208, 215, 219	1(0–2)	1(0–2)	1(0–2)
	17	19	19

Second Year

Course and No.	*Fall*	*Winter*	*Spring*
General Poultry 121	9(0–20)	.....	.....
General Agriculture 122	3(1–4)	.....	.....
Poultry Husbandry 131, 141	.....	3(2–3)	3(2–2)
Poultry Husbandry 134, 132	.....	4(2–4)	4(3–2)
Poultry Husbandry 143, 142	.....	3(2–2)	3(3–0)
Political Science 211	.....	3(3–0)	.....
Agricultural Engineering 124	.....	.....	3(0–6)
R.O.T.C. 220b, 220c	.....	2( )	2( )
Physical Education 210b, 210c	.....	1(0–2)	1(0–2)
	12	16	16

CURRICULUM IN POULTRY HUSBANDRY*

The four-year curriculum in poultry husbandry is designed to prepare students professionally for the following:

1. Managers of general farm and specialized flocks
2. Managers of hatcheries, buying stations and processing plants
3. Teachers of poultry husbandry
4. Extension service
5. Advanced study and research

Junior Year

Course and No.	*Fall*	*Winter*	*Spring*
Agricultural Engineering 124	3(0–6)	.....	.....
Poultry Husbandry 131, 143, 123	3(2–2)	3(2–2)	3(2–2)
Poultry Husbandry 134, 141	.....	4(2–4)	3(2–2)
Agricultural Economics 122, 131	3(4–1)	.....	5(3–0)
Organic Chemistry 131	5(3–4)	.....	.....
English 224, 244	3(2–2)	.....	3(3–0)
Rural Sociology 131	.....	3(3–0)	.....
Biochemistry 134	.....	5(3–4)	.....
Political Science 211	.....	3(3–0)	.....
Zoology 142	.....	.....	3(3–0)
	17	18	17

*Students should follow Basic Curriculum in Freshman and Sophomore years.

Senior Year

Course and No.	*Fall*	*Winter*	*Spring*
Poultry Husbandry 501a, 501b, 501c	1(1–0)	1(1–0)	1(1–0)
Poultry Husbandry 144, 142, 122	3(2–2)	3(3–0)	3(2–2)
Poultry Husbandry 132, 502	4(3–2)	.....	3–5
Agricultural Engineering 141	3(0–6)	.....	.....
Agronomy 124	3(2–2)	.....	.....
Zoology 143	.....	4(3–4)	.....
Agricultural Economics 141	.....	.....	3(2–2)
Animal Husbandry 132	.....	5(3–4)	.....
Electives	4( )	4( )	6( )
	18	17	16–18

POULTRY HUSBANDRY

111. Poultry Husbandry. 3(2–2).

The industry; origin and classification of breeds, selection, improvement and management of laying and breeding flocks.

112. Poultry Husbandry. 3(2–2).

Incubation; brooding, housing, feeding, and management of young growing stock.

121. Poultry Plant Practice. 9(0–20).

A laboratory course designed to develop and improve practical skills in poultry management and production.

122. Incubation and Hatchery Management. 3(2–2).

A study of the operation of incubators and management of commercial hatcheries including sanitation, egg sources, hatchability, records and the National Poultry Improvement Plan. Prerequisite: Zoology 143.

123. Turkey Management. 3(2–2).

History, origin, development and management of the turkey flock. Prerequisite: Poultry Husbandry 112.

131. Poultry Judging. 3(2–2).

Standard and utility judging of fowls, selection and preparation for shows and organization and supervision of poultry shows, judging and laying contests. Prerequisite: Poultry Husbandry 112.

132. Poultry Nutrition and Feeding. 4(3–2).

Nutritive requirements and metabolism of Poultry; feed ingredients,

compounding rations and feeding standards for breeding, fattening, growing and production stock. Prerequisite: Chemistry 134.

134. Poultry Anatomy-Physiology. 4(2–4).

A course which deals with the structure and function of tissues, organs and systems of the domestic fowl. Prerequisite: Poultry Husbandry 112.

141. Poultry Diseases and Parasites. 3(2–2).

Poultry hygiene; causes of diseases; symptoms and control of diseases and parasites. Prerequisite: Poultry Husbandry 134.

142. Poultry Farm Management. 3(3–0).

Principles of farm management as applied to poultry production; records and factors influencing economic returns. Prerequisite: Poultry Husbandry 112.

143. Processing and Marketing Poultry Products. 3(2–2).

Methods of killing, dressing, grading and storage of poultry meats and the grading and storage of eggs; transportation of poultry products and factors influencing price. Prerequisite: Poultry Husbandry 112.

144. Poultry Breeding. 3(2–2).

Inheritance of certain significant morphological and physiological characters in the fowl; systems of mating, breeding patterns, trap nesting, pedigrees and artificial insemination. Prerequisite: Zoology 142.

501a, b, c. Poultry Seminar. One hour credit.

Special articles and reports on subjects relating to the poultry industry will be assigned each student with round table discussion.

Advanced Undergraduates and Graduates

502. Special Problems in Poultry. 3-5 hours.

Problems in diseases, nutrition, breeding, incubation and marketing.

DEPARTMENT OF ARCHITECTURAL ENGINEERING

WILLIAM A. STREAT, *Chairman*

The objective of this curriculum is to provide a general understanding of the profession of architecture from the standpoint of design safety and economy. Study is devoted to all forms of building construction with emphasis placed on the structural and mechanical aspects of architecture. Sufficient work in architectural design, art and history

of architecture is included so that the student may acquire considerable knowledge of the utilitarian and aesthetic phases of planning.

The four-year program leads to the degree of Bachelor of Science in Architectural Engineering.

Freshman Year

(See First Year's Curricula of Engineering, Page 70.)

Sophomore Year

Course and No.	*Fall*	*Winter*	*Spring*
Freehand Drawing 311, 313	3(0–6)	.....	3(0–6)
Arch. Perspective and Shades and Shadows, A.E. 324	.....	3(0–6)	.....
General Physics 321, 322, 323	5(3–4)	5(3–4)	5(3–4)
Mathematics, 321 322, 323	5(5–0)	5(5–0)	5(5–0)
Arch. Design, A.E. 321, 322, 323	4(0–8)	4(0–8)	4(0–8)
Military or Air Science 221, 222, 223	2(2–2)	2(2–2)	2(2–2)
Engineering Problems M.E. 318, 319	1(0–2)	1(0–2)	.....
	20	20	19

Junior Year

Course and No.	*Fall*	*Winter*	*Spring*
Mechanics, M.E. 331, 332, 333	5(5–0)	5(5–0)	5(5–0)
Arch. Design, A.E. 331, 332, 333	5(0–10)	5(0–10)	5(0–10)
History of Arch., A.E. 325, 326, 327	4(4–0)	4(4–0)	4(4–0)
Working Drawings, A.E. 334, 335, 336	3(0–6)	3(0–6)	3(0–6)
Electives	3( )	3( )	3( )
	20	20	20

Senior Year

Course and No.	*Fall*	*Winter*	*Spring*
Theory of Structures A.E. 341, 342, 343	5(0–10)	5(0–10)	5(0–10)
Reinforced Concrete Design, A.E. 345	.....	4(4–0)	.....
Arch. Practice, A.E. 346	2(4–0)	.....	.....
Surveying Math. 324	.....	.....	3(1–4)
Contracts and Specifications, M.E. 327	.....	.....	3(3–0)
Materials of Construction, I.Ed. 324	3(3–0)	.....	.....
Heating and Ventilating, M.E. 334, 335	3(3–0)	3(3–0)	.....
Testing Materials, M.E. 346	2(0–4)	.....	.....
Economics 231, 234	.....	5(5–0)	5(5–0)
Electives	3( )	3( )	3( )
	18	20	19

COURSES IN ARCHITECTURAL ENGINEERING

A.E. 321. Architectural Design. Credit 4(0–8).

Fundamentals of architectural planning and design. Principles of plan, elevation and section in small buildings. Prerequisite: M.E. 312.

A.E. 322. Architectural Design. Credit 4(0–8).

Problems in the design of small buildings with emphasis on environmental influences, space organization, climate and orientation. Prerequisite: A.E. 321.

A.E. 323. Architectural Design. Credit 4(0–8).

Continuation of A.E. 322; principles of site planning.

A.E. 324. Architectural Perspective and Shades and Shadows. Credit 3(0–6).

Principles of architectural perspectives; shades and shadows. Prerequisite: M.E. 314.

325. History of Architecture. Credit 4(4–0).

Ancient and classical architecture including the Egyptian, Western Asiatic, Greek, Roman and Early Christian styles.

326. History of Architecture. Credit 4(4–0).

Byzantine, Romanesque, and Gothic Architectural styles. Prerequisite: A.E. 325.

327. History of Architecture. Credit 4(4–0).

The Renaissance, Early American, and Modern architectural styles. Prerequisite: A.E. 326.

A.E. 331. Architectural Design. Credit 5(0–10).

Group planning, development of architectural models, solutions of contemporary architectural problems. Prerequisite: A.E. 323.

A.E. 332. Architectural Design. Credit 5(0–10).

Continuation of A.E. 331 with emphasis on interior design. Prerequisite: A.E. 331.

A.E. 333. Architectural Design. Credit 5(0–10).

Continuation of A.E. 332 with problems involving larger buildings. Prerequisite: A.E. 332.

A.E. 334. Architectural Working Drawings. Credit 3(0–6).

Non-fire resistant construction; framing methods for small buildings, characteristics of materials, standard detailing and dimensioning. Prerequisite: A.E. 323.

A.E. 335. Architectural Working Drawings. Credit 3(0–6).

Continuation of A.E. 334; Semi-fireproof construction, selection of materials, finishing materials. Prerequisite: A.E. 334.

A.E. 336. Architectural Working Drawings. Credit 3(0–6).

Continuation of A.E. 335; Fireproof construction, Multi-Story buildings. Prerequisite: A.E. 335.

341. Theory of Structures. Credit 5(0–10).

The theory of stress analysis as it applies to building structures; includes loadings, reactions, shears, moments, deflections, beam theory and design. Mathematical and graphical solutions covered. Prerequisite: M.E. 333.

342. Theory of Structures. Credit 5(0–10).

Continuation of A.E. 341; column theory and design, steel truss and plate girder design. Special beam and girder connections, truss deflections by methods of virtual work and Williot Mohr. Prerequisite: A.E. 341.

343. Theory of Structures. Credit 5(0–10).

Continuation of A.E. 342; the analysis of statiscally indeterminate portal frames and bents; virtual work, angle change, slope deflection, and moment distribution methods applied to the solution of indeterminate problems. Prerequisite: A.E. 342.

A.E. 344. Wiring and Illumination. Credit 3(3–0).

Fundamentals of Residential, Commercial, and Industrial illumination and wiring practice. Prerequisite: A.E. 335.

A.E. 345. Reinforced Concrete Theory. Credit 4(4–0).

Reinforced concrete theory as applied to building structures. Theory of design for footings, beams, columns, and slabs. Prerequisite: A.E. 341.

A.E. 346. Architectural Practice. Credit 2(4–0).

Procedures in the professional practice of architecture; seminar. Prerequisite: Junior Classification.

A.E. 347. Architectural Design. Credit 5(0–10).

Advanced problems in the design of buildings having more complex requirements. Prerequisite: A.E. 333.

A.E. 348. Architectural Design. Credit 5(0–10).

Continuation of A.E. 347; design solutions of complex requirements. Prerequisite: A.E. 347.

A.E. 349. Building Sanitation. Credit 3(3–0).

Principles of plumbing; including venting, drainage, demand and load calculations, water distribution, pipe sizing, storm drainage and sprinkler systems. Prerequisite: A.E. 335.

DEPARTMENT OF ART

H. CLINTON TAYLOR, *Chairman*

GENERAL STATEMENT

The objectives of this department are as follows:

(a) To discover and develop the latent talent of students for artistic expression and lay a foundation for careers as creative artists.
(b) To meet a growing demand for specially trained art teachers in public schools and colleges.
(c) To develop taste and discrimination in choice of materials used in everyday life which will find expression in more beautiful homes and gardens, schools, parks, playgrounds and other public works.
(d) To provide a cultural activity leading to a more worthy use of leisure time.

Students in other departments desiring special work in art may, by arrangement with the instructor, take any course listed under art.

CURRICULUM OF ART

Freshman Year

(See First Year's Curricula of Engineering, Page 70.)

NOTE: Students majoring in Art will take History 213 during freshman year.

Sophomore Year

Course and No.	*Fall*	*Winter*	*Spring*
English Elective	.....	.....	5(5–0)
French 214, 215	5(5–0)	5(5–0)	.....
Modern European History 211 or 212	5(5–0)	.....	.....
Freehand Drawing 311, 312, 313	3(0–6)	3(0–6)	3(0–6)
Art 314, 315, 316	2(2–0)	2(2–0)	2(2–0)
Military or Air Science 221, 222, 223	2(2–0)	2(2–0)	2(2–0)
Art 317, 318, 319 Color and Design	3(0–6)	3(0–6)	3(0–6)
Elective	.....	3( )	3( )
	20	18	18

Junior Year

Course and No.	*Fall*	*Winter*	*Spring*
American History 221 or 222	5(5–0)	.....	.....
Mediaevel History 232	.....	5(5–0)	.....
Commercial Art 321, 322, 323	3(0–6)	3(0–6)	3(0–6)
Portrait, Art 334, 335, 336	2(0–4)	2(0–4)	2(0–4)
Art 327, 328, 329	2(2–0)	2(2–0)	2(2–0)
Ceramics 337, 338, 339	3(0–6)	3(0–6)	3(0–6)
Composition, Art 331, 332, 333	2(0–4)	2(0–4)	2(0–4)
Elective	3( )	3( )	3( )
	20	20	17

Senior Year

Course and No.	*Fall*	*Winter*	*Spring*
History 231	5(5–0)	.....	.....
Figure Drawing, Art 341, 342	3(0–6)	3(0–6)	.....
Oil Painting, Art 347, 348, 349	3(0–6)	3(0–6)	3(0–6)
Phy. Ed. 234	.....	.....	5(5–0)
Electives	6( )	8( )	6( )
	17	14	14

NOTE: The junior and senior electives may be taken in Advanced Military or Air Science. Planning of the electives will be done in consultation with the student's adviser.

311. Freehand Drawing. Credit 3(0–6).

A study of the fundamental principles of drawing as a useful mode of visual expression. Selected problems involving basic considerations of line, mass and color are presented for analysis and laboratory practice.

312. Lettering and Poster Design. Credit 3(0–6).

A comprehensive study of the art of lettering with speedball pens, the principles of the layout, poster construction, and general advertising.

313. Water-color Painting. Credit 3(0–6).

Provides a working knowledge of color both from the standpoint of its use and enjoyment. Various theories of color are analyzed along with drill on the techniques of water-color painting. Prerequisite: 311.

314. Art Appreciation. Credit 2(2–0).

An introductory course to the study of fine arts. Basic qualities of various forms of artistic expression are explained. Emphasis is placed on the application of art principles in everyday life.

315. History of Art. Credit 2(2–0).

A study of the art historic periods. Representative examples of the architecture and sculpture of ancient Egypt, Greece and Rome are selected for analysis, interpretation and comparison.

316. History of Art. Credit 2(2–0).

Traces the development of the art of painting from the Italian Primitive through the English School by means of analysis and comparison of works of representative painters.

317. Color and Design. Credit 3(1–5).

Deals with the theory of color and principles of pure design as applied in textiles and the development of decorative motifs, all-over patterns, and sources of design. Fall.

318. Intermediate Design. Credit 3(1–5).

A continuation of 317 with greater emphasis on the development of the student's creative ability. Printing and stenciling are introduced. Prerequisite: Art 317.

319. Advanced Design. Credit 3(0–6).

A continuation of 318 with emphasis on applying basic principles to the production of industrial products work with looms, hand weaving, leather work, and textile dyeing. Prerequisite: Art 318.

320. Anatomy. Credit 3(1–5).

A study of the human figure with emphasis on anatomy, body structure and human proportions, draped and undraped figures at rest and in action.

321. Commercial Art. Credit 3(0–6).

The handling of various media used in commercial art—laboratory drills in sketching and rendering in pen and ink and wash. Prerequisite: 313.

322. Commercial Art Design. Credit 3(0–6).

Advertising design. Water color and show-card color are used with continued drills in laboratory techniques suitable for reproduction and cartooning. Prerequisite: 321.

323. Commercial Art. Credit 3(0–6).

Study and production of book jacket designs, layouts for newspapers, designs for calendars, greeting cards, magazine illustrations, posters, etc. Prerequisite: 322.

327. Art Appreciation. Credit 2(2–0).

A study of the arts in America, beginning with a study of the crafts and continuing through American architecture, representative personalities and their works are studied, analyzed, and interpreted.

328. History of Art. Credit 2(2–0).

Traces the development of the art of sculpture in America from the Revolutionary period to the present era.

329. History of Art. Credit 3(2–0).

Traces the development of the art of painting in America from the Revolutionary period to the present era. Emphasis is placed on analysis and interpretation of representative works.

331. Composition. Credit 2(0–4).

A study of the basic principles of pictorial composition or designing the picture with definite consideration of the requirements of commercial art; drills in abstract arrangements of dark and light are given.

332. Composition. Credit 2(0–4).

A continuation of 331 with emphasis on the study of accessories, figure arrangement, and expression. Prerequisite: 331.

333. Composition. Credit 2(0–4).

A continuation of 332 with the introduction of a wide range of assigned topics or themes to be illustrated with original pictures. Emphasis is placed on originality, design, and expression.

334. Portrait. Credit 2(0–4).

Drawing from the antique or cast drawing as a foundation for drawing from life. Basic consideration in modeling in full scale of values are studied and practiced in charcoal.

335. Portrait. Credit 2(0–4).

A study of the techniques in the reproduction of photographs in charcoal and pastel. Emphasis is placed on laboratory techniques. Prerequisite: 334.

336. Portrait. Credit 2(0–4).

A study of the technique of portraiture. Studies are made from living models with emphasis on composition and expression. Prerequisite: 335.

337. Elementary Ceramics. Credit 3(1–5).

Study of the historical development, materials and processes, and structural forms as well as simple exercises in modeling in clay. Supplementary reading and laboratory practice is required. Fall.

338. Ceramics. Credit 3(1–5).

An intermediate course. Emphasis is placed on laboratory techniques, casting, and approved practices and procedures. Winter. Prerequisite: Art 337.

339. Advanced Ceramics. Credit 3(1–5).

Study of modern methods of production, building of armatures and casting in plaster, making of moulds, one piece, waste moulds and piece moulds, decorative processes in relation to glazing and firing. Creative thought is stimulated by composition of original designs and collecting and analysis of contemporary works. Prerequisite: 338.

341. Figure Drawing. Credit 3(0–6).

A study of the human figure from life. A study is made of the full length figure with emphasis on proportion, action and modeling in full values.

342. Figure Drawing and Design. Credit 3(0–6).

A continuation of 341 with emphasis on laboratory techniques in drawing, design and painting from life.

347. Oil Painting. Credit 3(0–6).

Study of oil painting with emphasis placed on the technique of oil painting still life, landscapes and portraits.

348. Oil Painting. Credit 3(0–6).

A continuation of 347 with emphasis on the development of original themes. Prerequisite: 347.

349. Oil Painting. Credit 3(0–6).

A continuation of 348 with emphasis on originality of subjects and treatment. Prerequisite: 348.

501. Public School Art. Credit 3(3–0).

Study of materials, methods and procedures in teaching art in the public schools. Special emphasis is placed on selection and organization of materials, seasonal projects, the lesson plan and correlation, lectures, demonstrations, assigned readings. Summer Quarter.

502. Drawing and Painting for Graduate Students. Credit 3(3–0).

Study of basic consideration of line-form content-technique. Summer Quarter.

503. Seminar In Art History. Credit 3(3–0).

This course is a round table discussion with student reports. Prerequisite: Consent of the instructor.

504. Studio Techniques. Credit 3(3–0).

Problems in laboratory, practices of interest to class are selected and studied.

(a) Water color
(b) Pastel
(c) Oil Painting

DEPARTMENT OF BIOLOGY

Artis P. Graves, *Chairman*

The program of the Biology Department is designed to serve the needs of the college as a whole in the area of the biological sciences. The courses of instruction are organized to provide training necessary for specialization in agricultural sciences, home economics, nursing, horticulture, and the teaching of Biology. The Department also offers courses designed to meet the general education requirement of the college and for entrance into graduate, medical, dental and veterinary schools.

A student may earn the degree of Bachelor of Science in Biological Science by completing the minimum of 45 quarter hours in the major field. These credits should consist of the following courses: Zoology 111, 112; Botany 111, 121 or 131; Zoology 122 or Bact. 123; Zool. 123, 124, 132, 142, 143 and 144 or other courses permitting major credit. General Chemistry 111, 112, 113; Organic Chemistry 131, 132; Physics 311, 312, and Mathematics 311, 312.

A minimum of 30 quarter hours is required of persons who minor in Biological Science. Persons who plan to do their minor in Biology must meet the departmental requirements from the following courses: Zoology 111, 112; Botany 111, 121; Zoology 123, 143, 144.

Students who plan majoring in General Science must complete the following specific requirements for a major:

Twenty-five quarter hours in either Biology or Chemistry and ten quarter hours each in four other areas, as:

Concentration in Biology
Zoology 111, 112
Botany 111
Zoology 123 and 5 hours of electives in Biology
Chemistry 111, 112
Physics 311, 312
Math. 311, 312

Geog. 10 hours

Concentration in Chemistry:
Chemistry 111, 112, 113 and 10 hours of Advanced Chemistry
Botany 111
Zoology 111
Physics 311, 312
Math. 311, 312
Geog. 10 hours

Students planning a vocation in teaching, but whose major emphasis is in Biology should consult the Head of the Department before completing their registration.

CURRICULUM IN BIOLOGICAL SCIENCE

Freshman Year

Course and No.	*Fall*	*Winter*	*Spring*
Zoology 111, 112	5(3–4)	5(3–4)	.....
Botany 111	.....	.....	5(3–4)
English 211, 212, 213	5(5–0)	5(5–0)	5(5–0)
Math. 311, 312	5(5–0)	5(5–0)	.....
History 210	.....	.....	5(5–0)
Education 211	1(1–0)	.....	.....
Mil. Sc. 211, 212, 213	2(2–0)	2(2–0)	2(2–0)
Phy. Ed. 210a, 210b, 210c	1(0–2)	1(0–2)	1(0–2)
	19	18	18

Sophomore Year

Course and No.	*Fall*	*Winter*	*Spring*
Botany 121, or 131	.....	3(2–2)	.....
Zoology 122	.....	4(2–4)	.....
Bact. 123	.....	5(3–4)	.....
Zoology 123	4(2–4)	.....	.....
Education 222	.....	.....	3(3–0)
Chemistry 111, 112, 113	5(3–4)	5(3–4)	5(3–4)
English 220, 223	5(5–0)	5(5–0)	.....
History 221, or 222	.....	.....	5(5–0)
Music 211	.....	.....	2(2–0)
Military Science 221, 222, 223	2(2–2)	2(2–2)	2(2–2)
Phy. Ed. 220a, 220b	1(0–2)	.....	1(0–2)
	17	19	18

Junior Year

Course and No.	*Fall*	*Winter*	*Spring*
Zoology 124	4(2–4)	.....	.....
Zoology 132	.....	4(3–4)	.....
Zoology 142	.....	.....	3(3–0)
French 211, 212, 213	5(5–0)	5(5–0)	5(5–0)
Chemistry 131, 132	5(3–4)	5(3–4)	.....
Sociology 231	.....	.....	5(5–0)
Minor or free elective	3( )	3( )	3( )
Art 314, 315, 316	2(2–0)	2(2–0)	2(2–0)
Phy. Ed. 220c	.....	.....	1(0–2)
	19	19	19

Senior Year

Course and No.	*Fall*	*Winter*	*Spring*
Zoology 143, 144	.....	4(2–4)	4(2–4)
Major electives	3( )	.....	.....
History 213	5(5–0)	.....	.....
Physics 311, 312 or †Physics 321.1, 321.2, 321.3	5(4–2)	5(4–2)	5(4–2)
Education 221	5(5–0)	.....	.....
Minor or free electives	.....	5( )	5( )
	18	14	14

BACTERIOLOGY

112. Microbiology. Credit 5(3–4).

A survey of the principles and techniques of microbiology and immunology with special emphasis on their application to nursing.

123. General Bacteriology. Credit 5(3–4).

A general course designed to study the morphology, physiology, and taxonomy of bacteria; a prerequisite to all other courses offered in bacteriology.

134. Food Bacteriology. Credit 4(2–4).

A study of the role of microorganisms in the preparation, preservation, and decomposition of various food products. Some consideration is given to the Public Health problem regarding the spread of some diseases from contaminated foods.

†Preveterinary and pre-medical students should enroll in Physics 321.1.

144. Dairy Bacteriology. Credit 4(2–4).

A general course which considers some of the common organisms associated with normal, and abnormal fermentations of milk; the role of microorganisms in the production and decomposition of various dairy products is also considered.

145. Soil Bacteriology. Credit 4(2–4).

The role of microorganisms in soil fertility. Special emphasis is on the activity of the nitrogen-fixing bacteria and also those concerned in the decomposition of organic waste materials.

BOTANY

111. General Botany. Credit 5(3–4).

Plants as living organisms constituting an integrated part of man's environment; general plant structure, general classification, evolutionary tendencies and living processes.

112. Plant Taxonomy. Credit 5(3–4).

The systematic organization of the plant kingdom; emphasis on identification and classification of important plant *genera* and families.

121. Elementary Plant Physiology. Credit 3(2–2).

The relationship between plant structure and various physiological processes; a general consideration of absorption, nutrition, respiration, growth and reproduction.

131. Plant Physiology. Credit 4(2–4).

An analysis of complex living processes occurring in plants and an attempt to explain them in terms of chemistry and physics.

133. Plant Pathology. Credit 3(2–2).

Basic factors governing the development of plant diseases including host-parasite relationships, effect of environment on disease development and the nature of disease resistance.

141. Cytology. Credit 3(1–4).

The structure and functional organization of protoplasm and its relationship to metabolism, heredity, and evolution.

Advanced Undergraduates and Graduates

504. Special Problems in Botany. Credit 2 to 5 hours.

Open to advanced students in botany for investigation of specific problems.

ZOOLOGY

110. General Zoology (for nurses). Credit 5(3–4).

Lectures and laboratory procedures introductory to the field of animal life as it relates to the education of professional nurses. It will further give especial emphasis to the following areas of human development: origin and development of germ cells, fertilization and development, general structure and function of tissues, organ systems, and the basis of heredity.

111. General Zoology. Credit 5(3–4).

A general concept of the basic principles of Zoology and a brief survey of the animal kingdom. Various areas of animal biology are studied, including cellular organization, classification, morphology, and physiology of representative forms from the protozoa through the phylum arthropoda.

112. General Zoology. Credit 5(3–4).

A comparative study of representative Mollusca, Echinoderms, and the chordates, and gives the more fundamental training required of Biological Science majors. Required of all majors with their concentration in zoology. Prerequisite: Zoology 111 or its equivalent.

121. Human Anatomy and Physiology. Credit 5(3–4).

A study of the general structure and function of the organ systems of man. The laboratory work shall consist of the dissection of the foetal pig and a study of the human skeleton. Required of Home Economics majors and majors in the School of Nursing.

122. Invertebrate Zoology. Credit 4(2–4).

Comprehensive consideration of the morphology, function, phylogeny, classification and the life histories of representative forms of lower and higher invertebrate groups exclusive of insects. Prerequisites: Zoology 111, 112.

123. Comparative Anatomy of the Vertebrates. Credit 4(2–4).

A comparative study of chordate organ systems with rather detailed emphasis on the primitive vertebrates, the dogfish shark and the turtle. Prerequisite: Zoology 112.

124. Mammalian Anatomy. Credit 4(2–4).

Lectures and detailed laboratory dissections on the cat, dog, or foetal sheep and other related mammals as a basis for an understanding of human anatomy. Prerequisite: Zoology 123.

131. Human Anatomy. Credit 5(3–4).

Lectures, demonstrations and the laboratory study of manikins and

the human skeleton. Organ systems of such mammals as the cat and pig are dissected and compared with conditions as they exist in man. This course is required of Physical Education majors. Prerequisite: Zoology 111.

132. Histology. Credit 4(2–4).

An intensive study of the cell and cellular organization of the tissue and organs of various animals. Prerequisite: Zoology 112 or its equivalent.

133. Economic Entomology. Credit 4(2–4).

Elementary structure, life histories, classification, and control of insect pests and related arthropods. Recommended for students majoring in one of the agricultural sciences. Prerequisite: Zoology 111.

134. General Entomology. Credit 4(2–4).

Elementary structure, description, and habits of the principal orders of insects. Laboratory work will consist of collecting, mounting, preserving, and classification of principal insect representatives. Recommended for general science and biological science majors. Prerequisite: Zoology 111.

141. Human Physiology. Credit 5(5–0).

Lectures and laboratory demonstrations of certain organ activity of common laboratory animals. This introductory course correlates these physiological principles with the performance of the integrated organ systems of the human. Prerequisite: Zoology 131.

142. Genetics. Credit 3(3–0).

Principles and mechanism of inheritance in plants and animals.

143. Vertebrate Embryology. Credit 4(2–4).

Study of the developmental stages of selected vertebrates. The materials are treated comparatively and consist of amphibian, bird, rodent, and references to mammalian forms. Prerequisite: Zoology 123 or special consent of instructor.

144. Vertebrate Embryology. Credit 4(2–4).

Stresses variations in rodent and mammalian development and applications of experimental embryological procedures. Prerequisite: Zoology 143.

Advanced Undergraduates and Graduates

501. Special Problems in Zoology. Maximum 6 credit hours.

Open to students qualified to do research in Zoology. Credit 2 to 3 hours per quarter.

502. Mammalian Biology. Credit 3(2–2).

Study of the evolutionary history, classification, adaptation and variation of representative mammals with special emphasis on the prenatal variations in prototherian, metatherian and eutherian types. Prerequisites: Zoology 111 and Botany 111.

***503. Biology of Sex.** Credit 3(3–0).

Lectures on the origin and development of the germ cells and reproductive systems in selected animal forms. Prerequisites: Zoology 111, 112 or equivalent.

***504. Cytology.** Credit 3(3–0).

Study of the cell with lectures and periodic student reports on modern advances in cellular biology. Prerequisite: 132 or special consent of instructor.

505. General Microtechnique. Credit 4(2–4).

Designed to develop skills in the preparation of cells, tissues and organs for microscopic observation and study. Prerequisites: Zoology 111, 112 or equivalent.

506. Nature Study. Credit 3(3–0).

A study of diversified organisms, their habits, life histories, defenses, sex relationships, periodic activities and economic values designed to acquaint the student with fundamental knowledge that should lead to a fuller appreciation of nature.

***507. General Parasitology.** Credit 5(3–4).

General principles of parasitology including morphology, taxonomy, life histories, host-parasite relationships, and epidemiology. Course recommended for students preparing for related areas in agricultural science, medicine, or advance work in zoology. Prerequisite: Zoology 112.

DEPARTMENT OF BUSINESS

JAMES L. STUART, *Chairman*

Four four-year curricula leading to the Bachelor of Science Degree are offered by the Department: Accounting, Business Administration, Business Education, and Secretarial Science. These curricula are designed to develop special competency in areas where the student exhibits interest and aptitude which portend the achievement of adequate

*Courses that may be substituted for those offering major or minor credit if granted permission by the Departmental head and Staff.

economic self-sufficiency in a chosen occupation. (Coextensive with this aim is the belief that the art of living needs emphasis equal to that of earning a living.) To achieve this end, courses in the freshman and sophomore years have been grouped so as to provide for a large portion of general education. Every student in the Department is required to take courses which are planned to provide a liberal background and to avoid the narrowing effects of specialization.

To seek to develop competency in one of the business specializations, the offerings of the Department have been set up also to develop the needed business efficiency of students enrolled in agriculture, home economics, industrial education, and the various technical curricula. Some of the offerings of this Department may be useful to all students regardless of their specializations. The courses of the Department are, therefore, open to all who have the requisite background courses to assure at least minimum success.

GRADUATION REQUIREMENTS

To be recommended for the Bachelor of Science Degree by the faculty of the Department, a student must complete the requirements of one of the specializations, *i.e.*, Accounting, Business Administration, Business Education, or Secretarial Science. This requires at least 200 quarter hours of work, including the general education sequence and electives.

A student will be recommended only after he has made at least an average of "C" in all courses taken in the Department.

ACCOUNTING

The accounting curriculum is designed to serve the needs of students in the several schools and Technical Institute of the College, and to provide adequate subject material for those contemplating a career in accounting or graduate work in this specialized field.

Although the emphasis is on courses in accounting, the sequence includes courses in business law, economics, finance, business management, insurance and statistics. Through this arrangement the student is brought to interpret accounting as an indispensable tool of management.

A minor shall consist of at least thirty (30) hours in accounting.

The curriculum for accounting majors is as follows:

Freshman Year

Course and No.	*Fall*	*Winter*	*Spring*
B.A. 351	.....	.....	5(5–0)
Chem. 111, 112	5(3–4)	5(3–4)	.....
or			
Physics 311, 312	5(4–2)	5(4–2)	.....
or			
Botany 111 and Zoology 111	5(3–4)	5(3–4)	.....
Math. 311, 312, 315	5(5–0)	5(5–0)	5(5–0)
English 211, 212, 213	5(5–0)	5(5–0)	5(5–0)
Phy. Ed. 210a, b, c	1(0–1)	1(0–1)	1(0–1)
Electives*	2 or 3	2 or 3	
	18	18	18

Sophomore Year

Course and No.	*Fall*	*Winter*	*Spring*
Acct. 321 Introductory Accounting	5(5–0)	.....	.....
Acct. 322 Introductory Accounting	.....	5(5–0)	.....
Acct. 323 Cost Accounting	.....	.....	5(5–0)
Math 318	.....	.....	5(5–0)
English 224, 225	3(2–2)	3(2–2)	.....
Geography, History, Political Sci.			
or Sociology	5(5–0)	5(5–0)	5(5–0)
Music or Art Appreciation	2( )	2( )	2( )
Phy. Ed. 220a, b, c	1(0–2)	1(0–2)	1(0–2)
Electives*	2( )	2( )	2( )
	18	18	20

Junior Year

Course and No.	*Fall*	*Winter*	*Spring*
Acct. 331, Intermediate Accounting	3(3–0)	.....	.....
Acct. 332, Intermediate Accounting	.....	3(3–0)	.....
Acct. 333, Advanced Accounting	.....	.....	5(5–0)
B.A. 331, 332, 333	3(3–0)	3(3–0)	3(3–0)
Sec. Science 317, 318, 319	2(0–5)	2(0–5)	2(0–5)
Econ. 231, 232, 233	5(5–0)	5(5–0)	5(5–0)
Electives	5( )	5( )	3( )
	18	18	18

*Male students are required to take Military or Air Science.

Senior Year

Course and No.	*Fall*	*Winter*	*Spring*
Acct. 341, Auditing	3(3–0)		
Acct. 342, Auditing		3(3–0)	
Acct. 351, Accounting Systems	3(3–0)		
Acct. 352, Federal Tax Accounting		5(5–0)	
Acct. 353, Governmental Accounting			5(5–0)
B.A. 354			3(3–0)
B.A. 355	5(5–0)		
B.A. 339		3(3–0)	
Electives	3( )	3( )	6( )
	14	14	14

BUSINESS ADMINISTRATION

The curriculum in business administration has been developed to provide the student with a broad academic background and a sound business training. In addition to courses in management, the student takes courses in general economics, labor problems, applied economics, finance, insurance, accounting, and statistics.

Freshman Year

Course and No.	*Fall*	*Winter*	*Spring*
Eng. 211, 212, 213	5(5–0)	5(5–0)	5(5–0)
Math. 311, 312, 315	5(5–0)	5(5–0)	5(5–0)
Chem. 111, 112	5(3–4)	5(3–4)	
or			
Physics 311, 312	5(4–2)	5(4–2)	
or			
Botany 111 and Zoology 111	5(3–4)	5(3–4)	
Sec. Sc. 317, 318, 319	2(0–5)	2(0–5)	2(0–5)
Ed. 211	1(1–0)		
Phy. Ed.	1(0–2)	1(0–2)	1(0–2)
History 213			5(5–0)
	19	18	18

Male students are required to enroll in Military or Air Science for a two-hour course each quarter.

Sophomore Year

Course and No.	*Fall*	*Winter*	*Spring*
B.A. 351	5(5–0)	.....	.....
Sec. Sc. 324	.....	2(0–4)	.....
B.A. 323	.....	.....	5(5–0)
Pol. Sc. 233	.....	3(3–0)	.....
Math. 318	.....	.....	5(5–0)
Speech 224	3(2–2)	.....	.....
Econ. 231, 232, 233	5(5–0)	5(5–0)	5(5–0)
Art or Music Appreciation (Select from Art 314, 315, 316—Music 211, 212, 213)	2(2–0)	2(2–0)	2(2–0)
Phy. Ed.	1(0–2)	1(0–2)	1(0–2)
Electives	3( )	3 to 5	———
	19	16 to 18	18

The program of male students will include two hours of Military or Air Science each quarter.

Junior Year

Course and No.	*Fall*	*Winter*	*Spring*
Acct. 321, 322, 323	5(5–0)	5(5–0)	5(5–0)
B.A. 331, 332, 333	3(3–0)	3(3–0)	3(3–0)
B.A. 339	.....	3(3–0)	.....
B.A. 356	5(5–0)	.....	.....
B.A. 352	.....	3(3–0)	.....
B.A. 354	.....	.....	3(3–0)
Geo. 241	5(5–0)	.....	.....
Econ. 234	.....	.....	5(5–0)
Electives	.....	3 to 5	3
	18	17 to 19	19

Senior Year

Course and No.	*Fall*	*Winter*	*Spring*
B.A. 346	.....	.....	3(3–0)
B.A. 345	.....	.....	3(3–0)
B.A. 355	5(5–0)	.....	.....
B.A. 353	.....	.....	5(5–0)
Acct. 352	.....	5(5–0)	.....
B.A. 357	.....	5(5–0)	.....
Econ. 236	3(3–0)	.....	.....

B.A. 344	3(3–0)	.....	.....
Phil. 212 (Ethics)	.....	3(3–0)	.....
B.A. 358	2(0–10)	2(0–10)	2(0–10)
Electives	3	3	2 to 5
	16	18	15 to 18

Recommended Electives

Accounting 321, 322—Intermediate Accounting ..... 3 hrs. ea
(Fall) (Winter)
Agricultural Econ. 146—Land Income ..... 2 hrs.

BUSINESS EDUCATION

The business education curriculum is designed to prepare students to meet state certification requirements for teachers of:

Typewriting and Shorthand
or
Bookkeeping and Basic Business

Students who plan to teach in secondary schools should select this curriculum not later than the last quarter of the freshman year in order that certification requirements may be met. Before a student will be admitted to Directed Teaching, he must present a minimum average of two grade points for each credit hour of work in all Business Education and Secretarial Science courses taken in the department.

Freshman Year

Course and No.	*Fall*	*Winter*	*Spring*
Eng. 211, 212, 213	5(5–0)	5(5–0)	5(5–0)
Math. 311, 312	5(5–0)	5(5–0)	.....
B. A. 351	.....	.....	5(5–0)
Chem. 111, 112	5(3–4)	5(3–4)	.....
or Physics 311, 312			
or Botany 111 and Zoology 111	5(5–0)	5(5–0)	.....
Phy. Ed. 210	1(0–2)	1(0–2)	1(0–2)
Phy. Ed. 234	.....	.....	5(5–0)
Sec. Sc. 317, 318, 319	2(0–5)	2(0–5)	2(0–5)
	18	18	18

Men students electing these curricula will add Military Science.

TEACHERS OF SHORTHAND AND TYPEWRITING

Sophomore Year

Course and No.	*Fall*	*Winter*	*Spring*
Eng. 224, 244	3(2–2)	3(3–0)	.....
History 221	.....	.....	5(5–0)
Art. 314, 315, 316	2(2–0)	2(2–0)	2(2–0)
Phy. Ed. 220a,b,c,	1(0–2)	1(0–2)	1(0–2)
Sec. Sc. 320, 325, 324	2(0–3)	2(0–3)	2(0–4)
Sec. Sc. 314, 315, 316	5(5–0)	5(5–0)	5(5–0)
Ed. 221, 222, 223, 231	5(5–0)	3(3–0)	3(3–0)
		3(3–0)	
	18	19	18

Junior Year

Course and No.	*Fall*	*Winter*	*Spring*
B. A. 352	3(3–0)	.....	.....
Econ. 231, 232	5(5–0)	5(5–0)	.....
Sec. Sc. 321, 322, 323	5(5–0)	3(3–0)	5(2–8)
Ed. 233, 224, 237	.....	3(3–0)	3(3–0)
		3(3–0)	
B. E. 336, 350	3(3–0)	.....	5(5–0)
B. A. 339	.....	.....	3(3–0)
Acct. 301, 302, 303	3(3–0)	3(3–0)	3(3–0)
	19	17	19

Senior Year

Course and No.	*Fall*	*Winter*	*Spring*
B. A. 344	.....	.....	3(3–0)
Econ. 236	5(5–0)	.....	.....
B. E. 352	5(5–0)	.....	.....
B. A. 346	.....	.....	3(3–0)
B. A. 331	.....	.....	3(3–0)
Sec. Sc. 326, 327	2(2–0)	2(0–13)	.....
Music 211, 212	2(2–0)	2(2–0)	.....
Electives	.....	10( )	5( )
	14	14	14

Suggested electives from Government, Economics, History, Sociology.

TEACHERS OF BOOKKEEPING AND GENERAL BUSINESS

Sophomore Year

Course and No.	*Fall*	*Winter*	*Spring*
Eng. 224, 244	3(2–2)	3(3–0)	.....
Art 314, 315, 316	2(2–0)	2(2–0)	2(2–0)
Phy. Ed. 220a,b,c	1(0–2)	1(0–2)	1(0–2)
Sec. Sc. 320, 325, 324	2(0–3)	2(0–3)	2(0–4)
Acct. 321, 322, 323	5(5–0)	5(5–0)	5(5–0)
Ed. 221, 222, 223, 231	5(5–0)	3(3–0)	3(3–0)
		3(3–0)	
Hist. 221	.....	.....	5(5–0)
	18	19	18

Junior Year

Course and No.	*Fall*	*Winter*	*Spring*
Econ. 231, 232, 233	5(5–0)	5(5–0)	5(5–0)
Acct. 331, 332	5(5–0)	5(5–0)	.....
Ed. 233, 224, 237	.....	3(3–0)	3(3–0)
		3(3–0)	
B. E. 336, 351	3(3–0)	.....	5(5–0)
B. A. 331, 332, 339	3(3–0)	3(3–0)	3(3–0)
B. A. 344, 352	3(3–0)	.....	3(3–0)
	19	19	19

Senior Year

Course and No.	*Fall*	*Winter*	*Spring*
Music 211, 212	.....	2(2–0)	2(2–0)
Geog. 241	5(5–0)	.....	.....
B. E. 352	.....	5(5–0)	.....
Econ. 236, 234	5(5–0)	5(5–0)	.....
B. A. 346	.....	.....	3(3–0)
Sec. Sc. 326, 327	2(2–0)	2(2–0)	.....
Electives	.....	.....	10( )
	12	14	15

Suggested electives from Government, Economics, History, and Sociology.

SECRETARIAL SCIENCE

The Secretarial Science curriculum is designed for the student who wishes to reach a responsible secretarial position. Emphasis is placed upon the development of superior skill in shorthand, typewriting, office appliances, and business correspondence. Courses in accounting, economics, management, business law, and English are included in order that the student may come to view business as an integrated activity. Through such a basic understanding secretarial workers can expect to take advantage of the opportunities for advancement likely to be offered them.

The curriculum for Secretarial Science majors is as follows:

Freshman Year

Course and No.	*Fall*	*Winter*	*Spring*
Eng. 211, 212, 213	5(5–0)	5(5–0)	5(5–0)
Math. 311, 312, 315	5(5–0)	5(5–0)	5(5–0)
Music or Art Appreciation	2(2–0)	2(2–0)	2(2–0)
Physical Education	1(0–2)	1(0–2)	1(0–2)
Chem. 111, 112	5(3–4)	5(3–4)	.....
or			
Physics 311, 312	5(4–2)	5(4–2)	.....
or			
Botany 111 and Zoology 111	5(3–4)	5(3–4)	.....
Sec. Sc. 317, 318, 319	2(0–5)	2(0–5)	2(0–5)
	20	20	15

Sophomore Year

Course and No.	*Fall*	*Winter*	*Spring*
Sec. Sc. 314, 315, 316	5(5–0)	5(5–0)	5(5–0)
Sec. Sc. 320	2(0–3)	.....	.....
Sec. Sc. 325	.....	2(0–3)	.....
B. A. 351	.....	.....	5(5–0)
English 224	.....	3(2–2)	.....
Art or Music Appreciation	2(2–0)	2(2–0)	.....
Physical Education	1(0–2)	1(0–2)	1(0–2)
History (selected by student)	5(5–0)	5(5–0)	.....
Education 221	.....	.....	5(5–0)
	15	18	16

Junior Year

Course and No.	*Fall*	*Winter*	*Spring*
Sec. Sc. 321, 322, 323	5(5–0)	3(3–0)	5(2–8)
Sec. Sc. 329	2(3–0)	.....	.....
Sec. Sc. 324, 326	.....	2(0–4)	2(2–0)
Acct. 301, 302, 303	3(3–0)	3(3–0)	3(3–0)
B. A. 323	.....	.....	5(5–0)
Economics 231, 232	5(5–0)	5(5–0)	.....
English 244	3(3–0)	.....	.....
B. A. 339	.....	3(3–0)	.....
	18	16	15

Senior Year

Course and No.	*Fall*	*Winter*	*Spring*
Sec. Sc. 328	3(3–0)	.....	.....
Sec. Sc. 327	2(0–13)	2(0–13)	2(0–13)
B. A. 331, 332	3(3–0)	3(3–0)	.....
B. A. 356, 352, 353	5(5–0)	3(3–0)	3(3–0)
Soc. 243	3(3–0)	.....	.....
English 220	.....	5(5–0)	
Phil. 212	.....	.....	3(3–0)
Gov. 233	.....	.....	3(3–0)
	16	13	11

A sufficient number of hours in electives must be taken to complete the requirements for graduation.

SUGGESTED PROGRAM FOR SECRETARIES AND STENOGRAPHERS

Two-Year Course

First Year

Course and No.	*Fall*	*Winter*	*Spring*
Eng. 211, 212, 213	5(5–0)	5(5–0)	5(5–0)
Sec. Sc. 317, 318, 319	2(0–5)	2(0–5)	2(0–5)
Math. 311, 312, 315	5(5–0)	5(5–0)	5(5–0)
Sec. Sc. 314, 315, 316	5(5–0)	5(5–0)	5(5–0)
Phy. Ed.	1(0–2)	1(0–2)	1(0–2)
	18	18	18

Second Year

Course and No.	*Fall*	*Winter*	*Spring*
Sec. Sc. 320, 325, 327	2(0–3)	2(0–3)	2(0-13)
Eng. 244, 224	3(3–0)	.....	3(2–2)
Sec. Sc. 321, 323, 324	5(5–0)	5(2–8)	2(0–4)
B. A. 351, 352, 339	5(5–0)	3(3–0)	3(3–0)
Phy. Ed.	1(0–2)	1(0–2)	1(0–2)
Sec. Sc. 326	.....	2(2–0)	
Electives	.....	3	5
	16	16	16

COURSES IN ACCOUNTING, BUSINESS ADMINISTRATION, BUSINESS EDUCATION, AND SECRETARIAL SCIENCE

Courses in Accounting

301. Elements of Accounting and Bookkeeping. Credit 3(3–0).

Familiarization with basic accounting concepts, principles and theory. For non-Accounting and non-Business Administration majors.

302. Elements of Accounting and Bookkeeping. Credit 3(3–0).

Mechanics of record keeping, statement preparation and use. Prerequisite: Accounting 301.

303. Elements of Accounting and Bookkeeping. Credit 3(3–0).

Application of accounting and bookkeeping practices through use of practice sets of typical business organizations. Prerequisite: Accounting 302.

304. Bookkeeping for Tradesmen. Credit 3(3–0).

The fundamentals of elementary bookkeeping useful and applicable to practice tradesmen. Restricted to students in the Technical Institute.

321. Introductory Accounting (Formerly B.A. 332). Credit 5(5–0).

A study of the fundamental principles of accounting, embracing the theory of double-entry system recording and its application to business transactions through the complete accounting cycle.

322. Introductory Accounting (Formerly B.A. 333). Credit 5(5–0).

Continuation of Accounting 321. Introduction of Corporate and Manufacturing accounts. Prerequisite: Accounting 321.

323. Cost Accounting (Formerly B.A. 341). Credit 5(5–0).

Elements and principles of cost accounting as applied to job lot, process, and standard costs systems. Prerequisite: Accounting 322.

331. Intermediate Accounting (Formerly B.A. 334). Credit 3(3–0).

Advanced training in the theory of accounts recording of accounts data, and preparation of accounting statements. Prerequisite: Accounting 323.

332. Intermediate Accounting. Credit 3(3–0).

Continuation of Accounting 331, with emphasis on analysis and interpretation of accounting data. Prerequisite: Accounting 331.

333. Advanced Accounting (Formerly Acct. 341). Credit 5(5–0).

Special advanced training in accounting techniques utilized in partnership accounting, special sales procedure, consolidation, fiduicary accounting, and actuarial science. Prerequisite: Accounting 332.

341. Auditing (Together with Acct. 342, formerly B.A. 343 and Acct. 343). Credit 3(3–0).

Procedures and theory of verification of accounts, and the accountant's responsibilities. Prerequisite: Accounting 333 or concurrent enrollment therein.

342. Auditing (Together with Acct. 341, formerly B.A. 343 and Acct. 343). Credit 3(3–0).

Preparation of audit reports. Prerequisite: Accounting 333.

351. Accounting Systems (Formerly Acct. 334). Credit 3(3–0).

A study of accounting features peculiar to special businesses. Prerequisite: Accounting 332.

352. Federal Tax Accounting (Formerly Acct. 342). Credit 5(5–0).

Federal income tax laws in relation to accounting and the preparation of tax returns. Prerequisite: Accounting 323.

353. Governmental Accounting (Formerly Acct. 335). Credit 5(5–0).

Accounting for institutional and governmental units. Prerequisite: Accounting 323, 332.

Courses in Business Administration

323. Principles of Marketing. Credit 5(5–0).

General survey of the field of Marketing. Consideration is given to the marketing process and marketing functions.

330. Law for Tradesmen. Credit 3(3–0).

Study of phases of business law useful and applicable to practicing tradesmen. Restricted to students in the Technical Institute.

331. Introductory Business Law I. Credit 3(3–0).

Acquaints the student with the origin, development and classification of law and with courts and court procedure.

332. Introductory Business Law II (Formerly B.A. 335). Credit 3(3–0).

Considers the laws governing negotiable instruments, business organization and agency. Prerequisite: B.A. 331.

333. Advanced Business Law. Credit 3(3–0).

Primarily concerned with security relationships. Government and social control of business are also considered. Prerequisite: B.A. 332.

339. Business Correspondence. Credit 3(3–0).

Principles and practices of effective business communications. Practice in writing sales letters, letters of complaints, collection, and application. Prerequisite: Sec. Sci. 319 or consent of instructor.

344. Principles of Salesmanship. Credit 3(3–0).

Effective selling techniques and major problems of sales organization and management.

345. Principles of Advertising. Credit 3(3–0).

Economics of advertising, advertising techniques and media are considered.

346. Principles of Retailing. Credit 3(3–0).

This course is concerned with retail store organization and operation.

351. Introduction to Business. Credit 5(5–0).

Survey of the field of business to acquaint the student with the organization, problems, and activities of business in a capitalistic system.

352. Office Management. Credit 3(3–0).

Consideration is given to office organization and management, office location and layout, office systems and procedures, and office equipment. Prerequisite: Sec. Sci. 324.

353. Personnel Administration. Credit 5(5–0).

Study of the modern personnel department and basic principles and procedures in employment and personnel management. Prerequisite: B.A. 351 or consent of instructor.

354. Business Management and Problems. Credit 3(3–0).

Study of the fundamentals of business organization and management and the resultant problems. Prerequisite: B.A. 351.

355. Financial Organization and Operation.

The financial structure and management of business are analyzed. Capitalization, methods of obtaining capital stocks, bonds, business failures and reorganization are treated. Prerequisite: Acct. 323.

356. Principles of Insurance.

Study of the fundamentals of general insurance. Attention is given to life, property, casualty, liability and other forms of insurance as used by modern business. Prerequisite: B.A. 351.

357. Principles of Real Estate. Credit 5(5–0).

A survey course covering types of real estate, interests, deeds, leases, restrictions, real estate brokerage, selling, advertising, and management. Prerequisite: B.A. 351.

358. Business Internship. Credit 2(0–10).

Students are required to do 10 hours of practice work per week in the offices and plants of the College and in and around Greensboro for a period of three quarters.

Courses in Business Education

336. Measurement in Business Education. Credit 3(3–0).

Study of instruments of measurement, construction and use for diagnostic, prognostic, remedial and achievement evaluation in Business Education. Prerequisite: Educ. 237.

350. Methods of Teaching Skill Subjects. Credit 5(5–0).

Analysis and evaluation of objectives, materials and methods of teaching typewriting, shorthand, transcription and related office skills. Provision is made for observation and practicipation in demonstration teaching. Prerequisite: Educ. 237, B.E. 336.

351. Methods of Teaching Bookkeeping and Basic Business Subjects. Credit 5(5–0).

Selection, organization, and evaluation of supplementary teaching materials and analysis of techniques in teaching bookkeeping, general business, business law, business structure, and elementary economics. Construction of teaching units, enrichment materials and lesson plans for effective teaching on the secondary level. Prerequisite: Educ. 237, B.E. 336.

352. Directed Teaching in Business Education. Credit 5(5–0).

Off campus student teaching in accredited high schools of the State. Opportunities are provided for supervision of extra-curricular activities, keeping of student records, and participation in community activities and projects. Prerequisite: B.E. 350 or 351.

Courses in Secretarial Science

314. Shorthand. Credit 5(5–0).

Study of wordbuilding and the general principles outlined in the Gregg Shorthand manual (simplified) and speed studies. Prerequisite: Eng. 210.

315. Shorthand. Credit 5(5–0).

Continuation of 314 and with added emphasis on transcription of simple letters and documents. Prerequisite: 314.

316. Shorthand. Credit 5(5–0).

Principles are included early in this course and emphasis is placed on difficult dictation and transcription, speed tests and reporting speeches, Prerequisite: 315.

317. Typewriting. Credit 2(0–5).

A working knowledge of the use of all parts of the typewriter, a thorough command of the keyboard by means of the touch system, rhythmic drills, practice in writing words, etc. Minimum rate for course credit is 30 CWPM.

318. Typewriting. Credit 2(0–5).

Tests and drills for speed and accuracy in the transcription of easy material from printed matter. Prerequisite: 317. Minimum rate for course credit is 50 CWPM.

319. Typewriting. Credit 2(0–5).

Technical typewriting is emphasized through tabulation, stencil cutting, report making and other practical duties. Prerequisite: 318. Minimum rate for course credit is 60 CWPM.

320. Advanced Typewriting. Credit 2(0–3).

Improvement of speed, accuracy, and machine manipulation. Specialized instruction is given in advanced techniques, duplication processes, and forms common to office work. Prerequisite: Secretarial Science 319.

321. Advanced Stenography and Typewriting. Credit 5(5–0).

A review of techniques in typing and shorthand for the purpose of developing speed. Emphasis is placed on the advanced dictation take rates and transcription rates.

322. Transcription. Credit 3(3–0).

To develop the ability to transcribe accurately, to use machines and materials properly and to promote habits of performance that are desirable for satisfying the requirements of business.

323. Secretarial Studies. Credit 5(2–8).

Qualifications, duties, responsibilities and work of a secretary. Prerequisites: Sec. Sci. 319, 322, Eng. 213, or consent of instructor.

324. Office Appliances. Credit 2(0–4).

Knowledge and skill in the use of modern office equipment. Prerequisite: Sec. Sc. 325.

325. Production Typewriting. Credit 2(0–3).

Production of various kinds of typewritten matter that would be required in a business office.

326. Office Procedures. Credit 2(2–0).

Study and discussion of the varous problems found in several types of business offices.

327. Business Internship. Credit 2(0–13).

Students are required to do 13 hours of practice work per week in the offices and plants of the College and in and around Greensboro for a period of three quarters.

328. Specialized Secretarial Work. Credit 3(3–0).

Study of special duties, requirements, and procedures of secretaries in various types of offices. Prerequisite: Secretarial Science 322.

329. Filing. Credit 2(0–4).

Special emphasis on Remington Rand alphabetic filing, with some attention to subject, geographic, numeric, and Soundex systems.

DEPARTMENT OF CHEMISTRY

J. PENDERGRAST, *Acting Chairman*

The Department of Chemistry offers a professional major leading to the Bachelor of Science degree. This curriculum is designed to meet the needs of students planning to begin professional careers in chemistry upon graduation, or to engage in further study in the field at the graduate level. The department also offers a minor curriculum and many service courses for the various departments of the college.

Professional Major. This program requires that the student complete 65 quarter hours in chemistry consisting of the following courses: 111, 112, 113*, 121, 122, 123, 131, 132, 133, 141, 142, 143, and five quarter hours in chemistry numbered 145 or above. Other requirements are listed in the course of study outline.

The student must also complete a minimum of 24 quarter hours in non-specialized courses other than in physical sciences and mathematics. Courses in American History, United States History, Sociology, Economics, and Political Science are recommended.

Minor. A minor in chemistry requires a minimum of 35-40 quarter hours, consisting of the following courses: 111, 112, 113*, 121, 122, 123, 131, 132. Students planning to teach may follow the minor sequence and the required professional courses in education—see Department of Education and Psychology.

*Students who demonstrate exceptional ability in chemistry 111 and 112 may omit from their course of study Chemistry 113 and go directly to Chemistry 121 if they are recommended by their instructors and pass a General Chemistry Proficiency Examination that will be administered by the department.

PROFESSIONAL MAJOR CURRICULUM

Freshman Year

Course and No.	*Fall*	*Winter*	*Spring*
Chemistry 111, 112, 113	5(3–4)	5(3–4)	5(3–4)
English 211, 212, 213	5(5–0)	5(5–0)	5(5–0)
Math. 311, 312, 313	5(5–0)	5(5–0)	5(5–0)
Education 211	1(1–0)	.....	.....
Military or Air Science 211, 212, 213	2(1–2)	2(1–2)	2(1–2)
Physical Education 210a, 210b, 210c	1(0–2)	1(0–2)	1(0–2)
	19	18	18

Sophomore Year

Course and No.	*Fall*	*Winter*	*Spring*
Chemistry 121, 122, 123	5(2–6)	5(2–6)	5(2–6)
Math. 321, 322, 322	5(5–0)	5(5–0)	5(5–0)
English 220 or 223	5(5–0)	.....	.....
Botany 111	.....	5(3–4)	.....
Zoology 111	.....	.....	5(3–4)
Military or Air Science 221, 222, 223	2(1–2)	2(1–2)	2(1–2)
Physical Education 220a, 220b, 220c	1(0–2)	1(0–2)	1(0–2)
	18	18	18

Junior Year

Course and No.	*Fall*	*Winter*	*Spring*
Chemistry 131, 132, 133	5(3–4)	5(3–4)	5(3–4)
Physics 321, 322, 323	5(3–4)	5(3–4)	5(3–4)
French 211, 212, 213	5(5–0)	5(5–0)	5(5–0)
Electives	3( )	3( )	3( )
	18	18	18

Senior Year

Course and No.	*Fall*	*Winter*	*Spring*
Chemistry 141, 142, 143	5(3–4)	5(3–4)	5(3–4)
Chemistry Electives	(2–5)	(2–5)	(2–5)
Electives	(3–5)	(3–5)	(3–5)
History 210, 222	5(5–0)	5(5–0)	.....
Economics 231	.....	.....	5(5–0)
	15 to 18	15 to 18	15 to 18

COURSES IN CHEMISTRY

107. General Chemistry for Nurses. Credit 5(3–4).

Introduction to techniques and concepts in chemistry necessary for nursing students; includes writing and interpretation of symbols, formulas, equations; atomic structure; composition and reactions of matter.

108. General Chemistry for Nurses. Credit 5(3–4).

Survey of functional groups in organic compounds, introduction to the basic cellular components; analyses of gastric and pancreatic contents, blood, and urine.

111. General Chemistry. Credit 5(3–4).

Introduction, elements, compounds, atomic structure, bonding, gases, and calculations.

112. General Chemistry. Credit 5(3–4).

Solids, liquids, solutions, electrolytes, oxidation-reduction and the halogens.

113. General Chemistry. Credit 5(3–4).

The sulfur, nitrogen, carbon, alkali, and alkaline earth families, equilibrium, organic chemistry, metallurgy, and nuclear chemistry.

121. Semimicro Qualitative Analysis. Credit 5(2–6).

Systematic analysis of cations, anious, simple compounds, ores, and alloys. Ionization theories, chemical equilibrium, and theory of oxidation-reduction.

122. Quantitative Analysis. Credit 5(2–6).

Volumetric Methods of analysis, placing emphasis upon physico-chemical principles.

123. Quantitative Analysis. Credit 5(2–6).

Gravimetric and electrometric methods of analysis.

131. Organic Chemistry. Credit 5(3–4).

Aliphatic compounds and their derivatives.

132. Organic Chemistry. Credit 5(3–4).

Complex aliphatic compounds, introduction to aromatic compounds and their derivatives.

133. Organic Chemistry. Credit 5(3–4).

Complex aromatic compounds and the systematic identification of organic compounds.

141. Physical Chemistry. Credit 5(3–4).

Atomic and nuclear structure, gaseous and crystalline states, physical properties and molecular structure, and the laws of Thermodynamics. Prerequisites: Physics 322, Math. 323, Chemistry 123.

142. Physical Chemistry. Credit 5(3–4).

Studies of the liquid state, solutions, chemical equilibria, and phase diagrams.

143. Physical Chemistry. Credit 5(3–4).

A study of chemical kinetics, electric conductance, ionic equilibria, and colloids.

145. Introduction To Chemical Research.

Makes use of the laboratory and library facilities in studying minor problems of research. Credit 3–6 hours each quarter. May be taken for credit during more than one quarter. Prerequisite: Advanced standing and permission of department.

146. Dairy Chemistry. Credit 5(3–4).

An elementary study of the chemistry of milk and dairy products. Prerequisite: Chemistry 131. Not accepted for credit toward a degree in chemistry.

147. Elementary Biochemistry. Credit 5(3–4).

A study of fundamental cellular constituents. Emphasis is placed on physiological applications and analyses. Prerequisite: Chemistry 132. Not accepted for credit toward a degree in chemistry.

148. General Biochemistry. Credit 5(3–4).

A study of the fundamental cellular constituents. Emphasis is placed on chemical composition and reactions. Prerequisites: Chemistry 123 and 133.

151. Advanced Inorganic Chemistry. Credit 2(2–0).

Atomic Structures, electronic configuration of elements, periodic system, and some of the more recent theories in the interpretation of chemical reactions. Prerequisite: Chemistry 123 and 133.

152. Advanced Inorganic Chemistry. Credit 2(2–0).

Theories of acids and bases, and inorganic complexes, and special topics.

153. Inorganic Preparations. Credit 1(0–2).

An advanced laboratory course. Emphasis is placed on preparation and purification of more complex inorganic compounds. Prerequisite: Chemistry 123 and 133. May be taken for credit during more than one quarter.

161. Advanced Organic Chemistry. Credit 2(2–0).

Special topics in organic chemistry. Includes carbohydrates, Terpenes, Vitamins, Dyes and heterocyclic compounds. Prerequisites: Chemistry 123 and 133.

162. Organic Preparations. Credit 1(0–2).

An advanced laboratory course. Emphasis is placed on the preparation and purification of more complex organic compounds. Prerequisite: Chemistry 123 and 133. May be taken for credit during more than one quarter.

COURSES FOR SCIENCE TEACHERS

511. Inorganic Chemistry. Credit 3(3–0).

A lecture course covering selected topics in Inorganic Chemistry; designed for science teachers having a limited background in Chemistry. Prerequisites: Chemistry 113. Not accepted for credit toward a degree in Chemistry.

512. Organic Chemistry. Credit 3(3–0).

A lecture course covering selected topics in Organic Chemistry; designed for science teachers with a limited background in chemistry. Prerequisite: Chemistry 113. Not accepted for credit toward a degree in Chemistry.

DEPARTMENT OF EDUCATION AND PSYCHOLOGY

CALVIN R. STEVENSON, *Acting Chairman*

Courses offered by the Department of Education and Psychology are designed to serve the needs of the entire College in the areas of the professional education of teachers and the psychological education of students preparing for careers in teaching, social work, government service, and allied vocations. To achieve these objectives, the courses are organized to provide training in professional education and in psychology. In view of this concept, students cannot pursue majors or minors in these areas.

Requirements for Teacher Certification

Requirements for the certification of persons to teach in the public schools of North Carolina are established by the State Department of Public Instruction. Persons desiring to qualify for a teacher's certificate should familiarize themselves with these requirements during their sophomore year. Since the College can advise and aid the student in planning his courses of study so as to include the necessary professional education and psychology courses, it is suggested that students interested in meeting the certification requirements of the State Department of Education should make application to the Chairman of the Department of Education and Psychology during their sophomore year.

Courses offered by the College to enable the student to meet certification requirements are designed to provide experiences which will develop the understandings, knowledges, and skills related to the art and sciences of teaching. They are organized around three areas: the pupil, the school, and teaching practicum. Students desiring to meet the minimum requirements for certification on the high school level, should complete at least nine quarter hours in each of these areas. Further, students are required to complete said minimum requirements under "The Pupil" and "The School" before enrolling in courses in teaching practicum, unless special permission is granted by the dean of the school in which the student is enrolled.

Following are courses offered to enable students to meet State requirements for *certification:*

NOTE: Persons interested in securing a certificate to teach in the Public Schools of this state should contact the Division of Certification, State Department of Public Instruction, Raleigh, North Carolina, immediately after graduation.

The Pupil

Psy. 201. Child Psychology or Psy. 202. Adolescent Phychology 3(2–2)
Psy. 203. Educational Psychology ..... 3(3–0)
Psy. 204. Tests and Measurements ..... 3(2–2)
Ed. 233. Introduction to Guidance ..... 3(2–2)
Ed. 234. Field-Laboratory Experiences in Education .....2(½–2½)
Psy. 205. Mental Hygiene ..... 5(5–0)
Psy. 206. Social Psychology ..... 5(5–0)

The School

Ed. 222. Introduction to the Study of Education ..... 3(3–0)
Ed. 224. Philosophy of Education ..... 3(3–0)
Ed. 237. Principles of Secondary Education ..... 3(3–0)
*Ind. Ed. 331. Vocational Education ..... 3(3–0)
*Ind. Ed. 332. Vocational Guidance ..... 3(3–0)

Teaching Practicum

Ed. 241, 243, 245, 246, 247,
248, 249, 250. Materials and Methods of Teaching ..... 5(5–0)
(The particular methods course pursued by the student will be determined by his major or minor subject)
Ed. 251. Observation and Practice Teaching ..... 5(2–6)

COURSES IN EDUCATION

For Undergraduates

211. Orientation. Credit 1(1–0).

Lectures and discussions designed to provide the student with functional insight into methods of improving study, taking notes, and using the library. Any quarter of the Freshman year.

222. Introduction to the Study of Education. Credit 3(3–0).

Overview of the historical background of the systems of education in the United States, their aims, organization and procedures, and of the principles and practices on all levels of the American educational system. Consideration given to qualifications for teaching with emphasis on the requirements of North Carolina.

*Industrial Education Majors.

224. Philosophy of Education. Credit 3(3–0).

View of the educative process, in the light of biology, psychology, and sociology, with emphasis on the philosophical bases and implications as they relate to the pupil, curriculum, teacher, and the institution.

225. Audio-Visual Laboratory. Credit 3(2–2).

Practical experiences in the operation and maintenance of projectors, recorders, radios, television sets, etc. Laboratory fee $2.00.

233. Introduction to Guidance. Credit 3(2–2).

Various systems of individual and group guidance, with special reference to the secondary school. Attention paid to handling special cases of learning deficiences. Prerequisite: Psy. 203.

234. Field-Laboratory Experiences. Credit 3(½–3).

Designed to place the student in position to summon, organize, and apply to the task of helping individuals learn, all the resources of the school and community.

237. Principles of Secondary Education. Credit 3(3–0).

History, nature and function of the secondary school and its relationship to the elementary school and adult life. Prerequisites: Ed. 224, and Psy. 204 or Ed. 233.

241. Special Methods. Credit 5(5–0).

Use of special teaching methods, techniques, devices, and materials related to each of the special fields of teaching. Opportunities for students to observe classes and teachers at work. Open only to seniors. Prerequisite: 18 quarter hours in Education and Psychology. Fall and Winter.

243. Methods of Teaching English. Credit 5(5–0).

Study of materials and methods of teaching English in the high school. Required of those planning to teach English. Prerequisites: 40 hours of English and 18 quarter hours in Education and Psychology. Fall and Winter.

245. Methods of Teaching Social Sciences. Credit 5(5–0).

Designed to provide the student with an understanding of the place of social sciences in high school and to assist him in understanding the techniques of social science instruction on the high school level. Required of those planning to teach the subject. Prerequisites: 40 hours of Social Studies and 18 quarter hours in Education and Psychology.

246. Methods of Teaching Mathematics. Credit 5(5–0).

Deals with evaluation of subject matter, materials, methods and

techniques, and objectives in the teaching of mathematics in the junior and senior high school. Required of those planning to teach the subject. Prerequisite: 30 hours of Mathematics and 18 hours of Education and Psychology. Fall and Winter.

247. Methods of Teaching Modern Languages. Credit 5(5–0).

Study of the problems and difficulties experienced in teaching foreign languages. Special attention is given to the matter of classroom aids, equipment, etc. Required of those students planning to teach languages. Prerequisite: 40 hours of French and 18 quarter hours of Education and Psychology. Fall and Winter.

248. Methods of Teaching Art. Credit 5(5–0).

Aims, objectives, methods and techniques of art teaching in the modern school. Special attention given to planning courses of study, presentation, selection of equipment, reference and illustrative material and correlation. Required of those wishing to qualify as art teachers. Prerequisite: 45 hours of Art and 18 hours of Education and Psychology. Fall and Winter.

249. Methods of Teaching Science. Credit 5(5–0).

Study of methods, materials and techniques of teaching such subjects as biology, chemistry, physics, and general science in the high school. Required of all those planning to teach in this field. Prerequisites: 40 hours of Science and 18 quarter hours of Education and Psychology. Fall and Winter.

250. Methods of Teaching Commercial Subjects. Credit 5(5–0).

Organization, preparation and care of materials, followed by an analysis of the method of procedure, standards and objectives of the teacher of commercial subjects in high school. Students may be admitted to this course only upon the recommendation of the head of the Department of Commercial Education. Fall and Winter.

251*. Observation and Practice Teaching. Credit 5(2–6).

Designed to provide the student an opportunity to put to use methods, techniques, and materials of instruction in a real classroom situation under supervision. Prerequisites: 5 quarter hours in methods of teaching, and an average grade of "B" or above in the field in which practice teaching is to be done. Maximum load, including Ed. 251, will be 13 hours. Fall, Winter and Spring.

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*All students planning to teach are required to spend at least sixty clock hours in practice teaching in the type of school in which they plan to work. Students should schedule this course only after consultation with the director of practice teaching.

501. Introduction to Audio-Visual Education. Credit 3(1–4).

Orientation of the student to the basic principles and practices of audio-visual aids for use in classroom instruction. Laboratory fee $2.00.

502. Production: Inexpensive Instructional Materials. Credit 3(2–2).

Emphasizes basic principles for preparation and utilization of audio-visual materials in the classroom. Laboratory period for application of techniques for preparing posters, charts, mounted still pictures, recordings, handmade lantern slides, etc. Laboratory fee $2.00.

505. Introduction to Adult Education. Credit 3(3–0).

History, philosophy, and general organizational and administrational problems of adult education. Prerequisite: Ed. 231.

506. Methods in Adult Education. Credit 3(3–0).

Methods of informal instruction, group leadership, conference planning, and techniques in handling various issues of interest to adults. For persons preparing to conduct adult education programs as well as those preparing to serve as instructors or leaders in the public schools and/or in various agencies serving adults. Prerequisite: Ed. 505.

COURSES IN PSYCHOLOGY

For Undergraduates

Psy. 200. General Psychology (Formerly Education 221). Credit 5(5–0).

What psychology is, what it aims to do, how its data are gathered, and the principles of human behavior which it attempts to describe. While this course will not be counted to meet the specific requirements in education for a high school teacher's certificate, it is a prerequisite for other courses in psychology.

Psy. 201. Child Psychology (Formerly Education 230). Credit 3(2–2).

Study of the elaboration of behavior from conception to puberty in such a way as to discover the principles underlying the wholesome development of children. Prerequisite: Psy. 200.

Psy. 202. Adolescent Psychology (Formerly Education 223). Credit 3(2–2).

Study of behavior during the culturally produced transitional period between childhood and adulthood. Prerequisite: Psy. 200.

Psy. 203. Educational Psychology (Formerly Education 231). Credit 3(3–0).

Basic problems underlying the psychology of education. Individual differences, development of personality, motivation of learning and development, nature of learning, and procedures which best promote its efficiency. Prerequisites: Psy. 201 or Psy. 202.

Psy. 204. Tests and Measurements (Formerly Education 236). Credit 3(2–2).

Standardized and teacher-made measuring devices, acceptable methods of selecting, administering, and interpreting all types of tests applicable to the school and classroom. Prerequisite: Psy. 203.

Psy. 205. Mental Hygiene (Formerly Education 226). Credit 5(5–0).

Basic principles of adjustment and mental hygiene, varieties of adjustment, personality development, and psychotherapy in theory and in practice. Prerequisite: Psy. 200 and 201 or 202.

Psy. 206. Social Psychology (Formerly Sociology 240). Credit 5(5–0).

Social application of psychology; social stimulation and response; formation of attitudes involved in cooperation-competition, leadership-submission, frustration-aggression, crowd and mob phenomena. Prerequisites: Psy. 200 and Sociology 231.

DEPARTMENT OF ELECTRICAL ENGINEERING

ARMAND RICHARDSON, *Chairman*

The curriculum of the Department of Electrical Engineering provides comprehensive training in the fundamental sciences—mathematics, physics, chemistry—with selected courses in the humanities designed to develop well-rounded engineers.

Courses offered in Electrical Engineering include basic work in the theoretical and practical phases of power generation, distribution, and utilization, in the transmission of intelligence by open wires, cables, and radio, and in the statistical behavior of electrons and ions in various types of electrical equipment.

Throughout the various courses, the teaching of theory and its modifications by practice, the development of an analytical judgment, and the acquiring of a fundamental scientific background are emphasized.

CURRICULUM

Freshman Year

(See First Year's Curricula of Engineering, Page 70.)

Sophomore Year

Course and No.	*Fall*	*Winter*	*Spring*
Math. 321, 322, 323	5(5–0)	5(5–0)	5(5–0)
Physics 321, 322, 323	5(3–4)	5(3–4)	5(3–4)

E.E. 324, 325, 326	5(3–4)	5(3–4)	5(3–4)
Air or Military Science 221, 222, 223	2(2–2)	2(2–2)	2(2–2)
M.E. 323	3(0–6)	.....	.....
Machine Shop 328	.....	2(0–4)	.....
M.E. 327	.....	.....	3(3–0)
Engineering Problems, M.E. 318, 319	1(0–2)	1(0–2)	.....
	21	20	20

Junior Year

Course and No.	*Fall*	*Winter*	*Spring*
E.E. 331, 332, 333	3(3–0)	3(3–0)	5(3–4)
E.E. 334, 335, 336	3(1–4)	3(1–4)	3(3–0)
M.E. 331, 332, 333	5(5–0)	5(5–0)	5(5–0)
Math. 331	5(5–0)	.....	.....
Econ. 231	.....	5(5–0)	.....
M.E. 321	.....	.....	3(2–2)
*Electives	4( )	3( )	3( )
	20	19	19

Senior Year

Course and No.	*Fall*	*Winter*	*Spring*
E.E. 346, 347, 348	4(3–3)	4(3–3)	4(3–3)
E.E. 355, 356, 357	4(3–3)	4(3–3)	4(3–3)
E.E. 360, 361	.....	3(3–0)	3(3–0)
Econ. 234	5(5–0)	.....	.....
Phy. 332, 333	3(3–0)	3(3–0)	.....
M.E. 336	.....	.....	3(3–0)
M.E. 353	.....	.....	1(0–3)
M.E. 337	.....	.....	3(3–0)
*Electives	3( )	3( )	3( )
	19	17	21

COURSES IN ELECTRICAL ENGINEERING

321, 322, 323. Basic Electrical Engineering. Credit 5(3–4).

Electrical engineering fundamentals and applications for non-electrical engineering students; a-c and d-c circuits and machinery; electron tubes and applications; electro-chemical processes; coordinated laboratory work. Prerequisites: Phy. 323, Math 323.

324, 325, 326. Introduction to Electrical Engineering. Credit 5(3–4).

A first course for electrical engineering students; electric and mag-

netic concepts and units; motional electromagnetic forces; electric fields and forces; electrochemistry; introduction to electronics. Coordinated laboratory work. Corequisites: Phy. 321, Math. 321.

331, 332. Electric Circuit Analysis. Credit 3(3–0).

Fundamental circuit theory and parameters; vector algebra and a-c circuit analysis; non-sinusoidal functions; coupled-circuit theory; balanced and unbalanced polyphase circuits; elementary filter theory. Prerequisites: Math. 323, E.E. 326.

333. Direct Current Machinery. Credit 5(3–4).

Principles, characteristics and operation of direct current apparatus; laboratory work coordinated with class-room study. Required of Juniors in E.E. Prerequisites: E.E. 332.

334, 335. Electrical Measurements. Credit 3(1–4).

Instruments and techniques for measuring electrical and magnetic quantities; galvanometers, d-c bridges, potentiometers; a-c bridges; magnetic measurements; measurement of power. Prerequisites: E.E. 326 or Phy. 331.

336. Principles of Electric and Magnetic Fields. Credit 3(3–0).

Basic electric fields; basic magnetic fields; elementary electron balistics. Prerequisites: E.E. 332, Math. 331.

346. Applied Electronics. Credit 4(3–3).

Electron ballistics and emission as applied to vacuum tubes, gas filled tubes, and specialized tubes; coordinated laboratory work. Prerequisites: Math. 331, E.E. 336.

347, 348. Radio Engineering. Credit 4(3–3).

Principles of electronic circuits, rectifiers and power filters; amplifiers; feedback systems; oscillating systems; modulation and demodulation; wave-shaping circuits; receiving and transmitting systems. Coordinated laboratory work. Prerequisite: E.E. 346.

351. Power Transmission Lines. Credit 5(5–0).

Long distance transmission of power; determination of distributed line parameters; general circuit constants and equations; circle diagrams as applied to long distance power lines. Prerequisites: E.E. 332, Math. 331.

354. Radio Circuits. Credit 5(1–8).

Special topics and laboratory work of special interest to the student; most of the work is given by the project method. Prerequisite: E.E. 346.

355, 356, 357. Alternating Current Apparatus. Credit 4(3–3).

Principles, characteristics, and operation of alternating current apparatus; application of circuital theory to a-c machinery; characteristics of transformers, induction machines, and synchronous machines; power rectifiers and inverters. Coordinated laboratory work. Prerequisite: E.E. 332.

360, 361. Electromagnetic Wave Theory. Credit 3(3–0).

Fundamental electronic concepts at ultra-high frequencies; analysis of transmission lines and networks; Maxwell's equations and their applications; reflecting phenomena; wave guides and radiating systems. Prerequisite: E.E. 336.

DEPARTMENT OF ENGLISH

C. R. WYRICK, *Chairman*

AIMS OF THE DEPARTMENT OF ENGLISH

The objectives of the department of English are as follows:

1. To develop in students the skills and techniques of effective writing, reading, and speaking.
2. To lead students to the realization that a mastery of the tools of communication contributes to achievement in all fields of major concentration and to success in all phases of living.
3. To equip students with adequate subject-matter background for the effective teaching of English and with the skills essential to the attainment of related vocational objectives.
4. To cultivate in students an appreciation for literature; to develop ability to interpret it readily; to stimulate a taste and desire for wide reading of the best forms of literature.
5. To prepare and train students for graduate study in English.

GENERAL REQUIREMENTS

All freshmen are required to take a placement test in English. Those failing this test must register for Remedial English (Eng. 210).

A minimum of twenty quarter hours in English is required for graduation from all departments. All students of all departments must take Eng. 211, Eng. 212, and Eng. 213. Five hours literature are required.

ENGLISH MAJORS AND MINORS

English majors and minors are required to have an average of B in their three Freshman English courses and to pass a comprehensive examination in the field of English at the end of the Fall Quarter of

their senior year. Those failing this examination will be required to prepare for a second examination.

A major in English is designed for persons interested in teaching English in the secondary school or in pursuing graduate work in the field. It is also recommended for those intending to follow law, the ministry, writing, or research as a profession.

SUGGESTED SEQUENCE OF COURSES IN ENGLISH

Sophomore Year

Course and No.	*Fall*	*Winter*	*Spring*
Introduction to American Literature 220 ..	5(5–0)	.....	.....
Development of English Literature 222 ...	.....	3(3–0)	.....
Development of English Literature 223 ...	.....	.....	5(5–0)
Voice and Speech Improvement 224	.....	3(2–2)	.....

Junior Year

Course and No.	*Fall*	*Winter*	*Spring*
American Literature 221	.....	5(5–0)	.....
Shakespeare 234	5(5–0)	.....	.....
Advanced Grammar 237	.....	.....	3(3–0)
English Elective	.....	.....	3(3–0)

Senior Year

Course and No.	*Fall*	*Winter*	*Spring*
Advanced Composition 244	3(3–0)	.....	.....
Methods of Teaching English, Ed. 243	.....	5(5–0)	.....
Directed Teaching, Ed. 251	.....	.....	5(2–6)

Suggested Sequence of Courses in English for Minors

Freshman Year:
- Grammar 211
- Composition 212
- Composition and Reading 213

Sophomore Year:
- Introduction to American Literature 220 ..... 1st quarter
- Voice and Speech Improvement 224 ..... 2nd quarter
- Development of English Literature 223 ..... 3rd quarter

Junior Year:
- Shakespeare 234 ..... 1st quarter
- American Literature 221 ..... 2nd quarter
- Advanced Grammar 237 ..... 3rd quarter

Senior Year:
- Advanced Composition 244 ..... 1st quarter

COURSES IN ENGLISH

LANGUAGE AND COMPOSITION

210. Remedial English. Credit 3(3–0).

Emphasis upon the elementary requirements in English usage such as the rudiments of grammar, punctuation, and spelling; students who fail to pass the placement test in English required to complete this course in addition to the regular English requirements.

211. Grammar. Credit 5(5–0).

A review of the fundamental principles of grammar and the application of these principles in sentences and paragraphs. Any quarter.

212. Composition. Credit 5(5–0).

Practice in paragraph development, outlining, letter writing, short themes, and using the library. Prerequisite: English 211.

213. Composition and Reading. Credit 5(5–0).

Introduction to the techniques of research writing. Prerequisite: English 212.

217. Special Reading. Credit 3(1–4).

Opportunity to increase rate of reading and to comprehend thought from the printed page through vocabulary study and a broad reading program.

219. Masterpieces of World Literature. Credit 3(3–0).

Selected literary masterpieces with attempts to show how they were expressions of the culture which produced them.

231. Journalism. Credit 3(3–0).

Theoretical and practical work in the recognizing, gathering, and writing news; primary attention to the development of journalistic technique; considerable drill on the fundamental principles of composition. Prerequisite: English 213.

236. Argumentation and Debating. Credit 3(2–2).

Principles of argumentation; discussions, lectures, and classroom debates. Prerequisite: Eng. 213.

237. Advanced English Grammar. Credit 3(3–0).

English grammar with emphasis on the present status of modern American English. Spring.

244. Advanced Composition. Credit 3(3–0).

Opportunity to practice on the more specialized forms of writing.

245. Review for English Majors and Minors. Credit 0(2–0).

Planned particularly for seniors who desire personal attention in further mastering the fundamentals of English composition and in becoming more conversant with the general field of English and American literature. Winter.

SPEECH AND EXPRESSION

224. Voice and Speech Improvement. Credit 3(2–2).

A study of the basic attributes of effective delivery; tests and recordings to discover speech and voice defects; drills, exercises, and projects to improve general speaking habits. Any quarter.

225. Public Speaking. Credit 3(2–2).

A study of the methods by which public speeches are made clear, interesting, and forceful; practice in writing and delivering speeches according to the occasion. Prerequisite: English 224.

227. Oral Interpretation. Credit 3(1–2).

Training in expressive audience reading of selections from classical and modern literature.

228. Acting. Credit 3(1–4).

A laboratory course designed to develop skill in voice, diction, and pantomime by means of readings, monologues, skits, and short plays for school and community; practical experience in the major A. and T. dramatic productions.

229. Parliamentary Procedure. Credit 1(0–2).

Theory and practice in the rules and customs governing organization and proceedings of deliberative bodies. Prerequisite: English 213.

LITERATURE

220. Introduction to American Literature. Credit 5(5–0).

A survey of American literature from colonial times to the present. Prerequisite: Eng. 213.

221. American Literature. Credit 5(5–0).

A study of major American writers since 1850. Prerequisite: English 213.

222. Development of English Literature. Credit 3(3–0).

Reading in English Literature from the beginning to 1700; lectures; reports.

223. Development of English Literature. Credit 5(5–0).

English Literature from 1700 to the twentieth century; lectures; reports. Prerequisite: Eng. 213.

226. Dramatic Literature. Credit 3(3–0).

A survey of dramatic literature; origin of the drama, readings in Greek, classical French, Elizabethan, and contemporary drama.

234. Shakespeare. Credit 5(5–0).

A detailed, chronological study of the principle plays taken from all four of the periods of dramatic production; lectures, reports, one long paper. Prerequisite: 20 hours of English.

242. The Romantic Era. Credit 3(3–0).

The principles and ideas of Romanticism as expressed in the works of the principal English writers of poetry and prose from 1798 to 1823; term report.

243. The Victorian Era. Credit 3(3–0).

Readings in the works of the principal English writers of the Victorian Age; term report.

246. The Novel in English. Credit 3(3–0).

The growth and development of the novel in English from the eighteenth century to the present time.

DEPARTMENT OF FOREIGN LANGUAGES

WAVERLYN NATHANIEL RICE, JR., *Chairman*

The department aims to develop reasonable facility in the reading, speaking, and writing of the principal modern foreign languages. It endeavors, furthermore, to lead students to an intelligent appreciation of outstanding literary masterpieces, to develop a better knowledge of continental contributions to modern culture, and to create a spirit of understanding that will result in proper attitudes toward different national groups.

Elementary language courses 211, 212, 213 are recommended for those students who have no previous knowledge of the language, or who present one unit of high school credit. For those students presenting two units of high school credit, intermediate language courses 214 and 215 are required. However, if students with two units of the language in high school should take an elementary course, they are required to complete 15 hours on the same level.

Major in Foreign Languages

Junior Year

Course and No.	*Fall*	*Winter*	*Spring*
French 218, 219, 220			
or			
French 221, 222, 223	5(5–0)	5(5–0)	5(5–0)
Education 241, 221, 222	5(5–0)	3(3–0)	3(3–0)
Electives—Spanish 211, 212, 213	5(5–0)	5(5–0)	5(5–0)
or			
French 231, 245, 216	3(3–0)	5(5–0)	5(5–0)

Senior Year

Course and No.	*Fall*	*Winter*	*Spring*
French 232, 233, 234	3(3–0)	3(3–0)	3(3–0)
Education 247, 251	5(5–0)	.....	5(5–0)
Electives—French 217	5(5–0)	.....	.....
or			
Spanish 214, 215, 216	5(5–0)	5(5–0)	5(5–0)
Electives in minor	.....	10(10–0)	.....

Minor in Foreign Languages

Students electing foreign languages as a minor are advised to include in their program the following courses:

French 214, 215, 216
French 221, 222, 223 or
French 218, 219, 220

In keeping with state requirements for certification, French 232, 233, and 234 should be scheduled in a candidate's senior year. Education 247 is highly recommended for those preparing to teach.

If Spanish is elected as a minor, students should complete a minimum of thirty hours, based on two units of high school Spanish. For those students beginning language study with elementary Spanish, a minimum of thirty-five hours will be required.

COURSES IN FRENCH

211. Elementary French. Credit 5(5–0).

Essentials of grammar and pronunciation, acquisition of vocabulary, and attention to elementary composition. Fall.

212. Elementary French. Credit 5(5–0).

Continuation of grammar and pronunciation. Conversation and dictation encouraged. Winter.

213. Elementary French. Credit 5(5–0).

Practice in oral and written composition. Acquisition of taste for advanced French through reading, translation, and interpretation of easy modern French prose. Spring.

214. Intermediate French. Credit 5(5–0).

Course open to students who have completed two units of high school French or college French 211, 212, 213. Brief review of grammar followed by practice in pronunciation. Fall.

215. Intermediate French. Credit 5(5–0).

Reading of French plays encouraged. Ability to write and converse in French further developed. Winter.

216. Phonetics. Credit 5(5–0).

Course intended for students majoring and minoring in French. Recommended for those who wish to improve pronunciation. Spring.

217. French Literature of the Middle Ages and the Renaissance. Credit 5(5–0).

A general introduction to the more advanced study of French literature. To give a clear idea of the great periods and main tendencies in history of French thought and letters from the Middle Ages to the Seventeenth Century. Fall.

218. Advanced French Composition. Credit 5(5–0).

Advanced course in oral and written self-expression in French. Special attention to vocabulary building, free composition, and conversation, prepared and improvised, covering the many phases of everyday activities. Spring.

219. Advanced French Conversation. Credit 5(5–0).

Course for students having some experience in written French. To improved oral and aural conversation. Working groups arranged for practice in French conversation. Spring.

220. Advanced French Grammar and Reading. Credit 5(5–0).

To give the student practical training in the use of advanced French grammar and reading. Conducted largely in French. Spring.

221. French Literature in the Seventeenth Century. Credit 5(5–0).

Course presents Classicism through masterpieces of Corneille, Racine, Moliere and other authors of the "Golden Period" in French letters. Conducted in French. Fall.

222. French Literature of the Eighteenth Century. Credit 5(5–0).

To study in particular the life and works of Montesquieu, Voltaire, Rousseau, and the Encyclopedists. Class conducted in French. Winter.

223. French Literature of the Nineteenth Century. Credit 5(5–0).

Study of the great literary currents of the nineteenth century, romanticism and realism. Spring.

231. Contemporary French Literature (Formerly 243). Credit 3(3–0).

Course deals with the chief writers and literary currents of the time through lectures and outside readings.

232. Oral French. Credit 3(3–0).

Basic oral French course prepares students for French 233 and 234. To improve the student's hearing and speaking abilities in French.

233. Intermediate Conversational French. Credit 3(3–0).

To give students intensive training in self-expression and to improve pronunciation and diction in reading and speaking. Class conducted in French. Winter.

234. Advanced Conversational French. Credit 3(3–0).

Intensive oral and written work including discussions and compositions in French. Assigned outside readings on newspaper articles, literature, civilization, etc. encouraged. Spring.

245. French Civilization. Credit 5(5–0).

A general survey of the history of France, with emphasis on the social, political and economic development designed to give the student an understanding of present conditions and events. A detailed study of such French institutions as art, music and education. Course is also offered in conjunction with reports of collateral readings.

247. French for Prospective Teachers. Credit 3(3–0).

Elective for seniors with the consent of the instructor. A brief review of the principles of grammar, followed by intensive drill in phonetics. Aims, problems, methods, and tests discussed. Spring.

COURSES IN SPANISH

211. Elementary Spanish. Credit 5(5–0).

To secure the understanding of easy Spanish, written and spoken. Attention given to essentials of grammar and pronunciation. Fall.

212. Elementary Spanish. Credit 5(5–0).

Continues work in grammar and pronunciation. Prose reading encouraged by exercises in vocabulary building. Winter.

213. Elementary Spanish. Credit 5(5–0).

Attention to advanced elementary grammar. Prose reading continues and a taste for advanced Spanish stimulated through the reading of poetry.

214. Intermediate Spanish. Credit 5(5–0).

For students who have completed two units of high school Spanish or college Spanish 211, 212, 213. A thorough review of Spanish syntax with emphasis on its essential difficulties. Fall.

215. Intermediate Spanish. Credit 5(5–0).

To give practice in writing idiomatic Spanish in translations and free compositions. Readings selected from modern authors. Winter.

216. Survey of Spanish Literature. Credit 5(5–0).

Course designed to give a survey of the most important movement, writers, and works from the Middle Ages up to the present time. Spring.

217. Advanced Spanish Grammar and Composition. Credit 3(3–0).

An advanced course in the study and usage of Spanish grammar and composition, giving a systematic review of oral and written grammar through compositions and exercises.

218. Syntax of the Spanish Verb. Credit 3(3–0).

Principal uses of the Spanish verb. Illustrative examples selected passages of works of standard prose writers. Course recommended for advanced students and prospective teachers.

219. Introduction to Modern Spanish Literature. Credit 3(3–0).

To give the student an introduction to works of important authors of the period through the reading and discussion of selected modern works.

DEPARTMENT OF HOME ECONOMICS

MRS. C. V. EVANS, *Chairman*

The Department of Home Economics offers courses designed for curricula leading to the Bachelor of Science degree in the following subject matter areas: (1) Clothing, (2) Foods and Nutrition, (3) Home Economics Education, (4) Institution Management, and (5) Nursery School Education. Two-year terminal programs leading to a certificate are offered in (1) Clothing, and (2) Food Service Management.

The educational experiences which have been planned in the several curricula aim to contribute to the acquisition of knowledges, appreciations and skills for.

1. The development of better personal, group and family living for active participation in a democratic society, and
2. Earning a profitable living in one of the major areas offered by the Department.

TWO-YEAR TERMINAL PROGRAMS

CLOTHING

The two-year curriculum in clothing is developed to prepare students for employment in the following areas:

1. Dressmakers.
2. Managers or owners of small dress establishments.
3. Assistants in tailoring, dry cleaning, or millinery establishments.
4. Alterers of ready-to-wear garments.

Curriculum

First Year

	Fall	*Winter*	*Spring*
English 200, 201, 202	3	3	3
Art 317, 318, 319	3	3	3
Secretarial Science 317, 318	2	2	....
Home Administration 111, 134	3	....	4
Home Economics Education 111	3	....	....
Clothing 110, 112	5	....	....
Clothing 113, 131	....	7	....
Clothing 114, 121	....	....	9
Dry Cleaning	....	2	....
Physical Education	1	1	1
	20	18	20

Second Year

	Fall	*Winter*	*Spring*
Home Administration 135	5	....	....
Clothing 122, 151	7	....	....
Foods and Nutrition 110	3	....	....
Institution Management 128	5	....	....
Clothing 134, 137, 133, 152	....	16	....
Clothing 140	....	....	15
	20	16	15

FOOD SERVICE MANAGEMENT

The two-year curriculum in Food Service Management prepares a student for the following positions:

1. School lunch managers and assistants.
2. Managers or owners of small food specialty shops.
3. Caterers.
4. Assistant supervisors in charge of food preparation.

Curriculum

First Year

	Fall	*Winter*	*Spring*
English 200, 201, 202	3	3	3
Foods and Nutrition 110, 111, 112	3	4	3
Institution Management 101, 102, 103	5	5	5
Secretarial Science 317, 318	2	2	....
Home Administration 111	3	....	....
Home Economics Education 111	3	....	....
Institution Management 123, 124	....	5	3
Institution Management 104	....	....	5
	19	19	19

Second Year

	Fall	*Winter*	*Spring*
Institution Management 121, 125, 128	15	....	....
Clothing 110, 112	5	....	....
Institution Management 122, 127, 129	....	13	....
Psychology 200	....	5	....
Institution Management 143	....	....	15
	20	18	15

FOUR-YEAR MAJOR CURRICULUM REQUIREMENTS

CLOTHING

The four-year curriculum in clothing is designed to meet the academic requirements necessary to enter the following professions:

1. College clothing or textile instructors after graduate study.
2. Managers or owners of dress establishments.
3. Fashion editors with newspapers or magazines.
4. Textile research worker.
5. Fashion designer's assistants after an approved apprenticeship.
6. Clothing specialists with the Cooperative Extension Service.
7. Milliners.
8. Couturieres.
9. Interior decorators.

Curriculum

First Year

	Fall	*Winter*	*Spring*
Chemistry 101, 102, 103	4	4	4
English 211, 212, 244	5	5	3

Physical Education 210a, b, c, 213	1	1	2
Home Administration 112, 121	....	7	....
Home Economics Education 111	3	....	....
Art 317	3	....	....
Clothing 110, 112, 113	2	3	4
Music 208	....	....	3
Child Development 115	....	....	3
	18	20	19

Second Year

	Fall	*Winter*	*Spring*
Zoology 111, 121	5	5	....
Foods 110, 111, 112	3	4	3
Clothing 122, 131, 121	4	3	4
Physical Education 220a, b, c	1	1	1
English 224, 225	3	3	....
History 234	3	....	....
Psychology 200	....	....	5
Art 318, 319	....	3	3
Home Administration 134	....	....	4
	19	19	20

Third Year

	Fall	*Winter*	*Spring*
Sociology 231, 241	....	5	3
Economics 231, 236	5	3	....
Home Administration 135	5	....	....
Clothing 132, 123	7	....	....
Clothing 134, 137	....	8	....
Clothing 133, 152	....	....	5
Dry Cleaning	....	2	....
Physics 311	....	....	5
Secretarial Science 317, 318	2	2	....
	19	20	18

Fourth Year

	Fall	*Winter*	*Spring*
Home Administration 143 and Electives or Clothing 140 or Electives	15	15	15
	15	15	15

FOODS AND NUTRITION

A major in Foods and Nutrition is designed to prepare graduates for the following professional opportunities:

1. Assistant food technicians.
2. Clinical instructors.
3. Assistant clinical nutritionists.
4. Graduate study to prepare as
   - Nutrition specialists
   - Food specialists
   - Public health nutritionists
   - Food technologists
   - Food Editors
   - College teachers.

Curriculum

First Year

	Fall	*Winter*	*Spring*
Chemistry 111, 112, 113	5	5	5
English 211, 212, 244	5	5	3
Mathematics 311, 312, 313	5	5	5
Home Economics Education 111	3	....	....
Clothing 110, 112, 113	2	3	4
Child Development 115	....	....	3
	20	20	20

Second Year

	Fall	*Winter*	*Spring*
Chemistry 121, 122, 123	5	5	5
Foods 110, 111, 123	3	4	5
Zoology 111, 121	5	5	....
Economics 231, 236	5	3	....
Bacteriology 123	....	....	5
English 224, 225	....	3	3
	18	20	18

Third Year

	Fall	*Winter*	*Spring*
Chemistry 131, 132, 135	5	5	5
Foods and Nutrition 125, 127, 128, 132	5	5	10
Economics 231, 236	5	3	....
Sociology 231	....	5	....
Physics 311	....	5	5
Psychology 200	....	....	5
	20	18	20

Fourth Year

	Fall	*Winter*	*Spring*
Home Administration 112 and Elective	5	....	....
Home Administration 143 or Elective	....	5	5
Foods and Nutrition 129, 130, 131	5	6	....
Home Economics Education 142, 143	....	....	10
Electives	5–10	4–9	0–5
	15–20	15–20	15–20

HOME ECONOMICS EDUCATION

The four-year curriculum in Home Economics Education is designed to prepare graduates for positions as:

1. High school home economics teacher.
2. County Home Demonstration Agent.
3. College teacher of home economics education after graduate study.

Students desiring to secure certification for teaching home economics in North Carolina should meet the requirements for a second teaching area. Certification as a general science teacher may be obtained by electing five additional hours in either chemistry, physics, or biology.

Curriculum

First Year

	Fall	*Winter*	*Spring*
Chemistry 101, 102, 103	4	4	4
English 211, 212, 244	5	5	3
Physical Education 210a, b, c, 213	1	1	2
Home Administration 112, 121	....	7	....
Home Economics Education 111	3	....	....
Art 317	3	....	....
Clothing 110, 112, 113	2	3	4
Music 208	....	....	3
Child Development 115	....	....	3
	18	20	19

Second Year

	Fall	*Winter*	*Spring*
Bacteriology 123	....	....	5
Zoology 111, 121	5	5	....
Foods 110, 111, 112	3	4	3
Physical Education 220a, b, c	1	1	1
English 224, 225	3	3	....
Home Administration 134	....	....	4

Art	....	....	3
Psychology 200, 202	5	3	....
Education 222, 224	....	3	3
History 234	3	....	....
	20	19	19

Third Year

	Fall	*Winter*	*Spring*
Economics 231, 236	5	3	....
Physics 311	5	....	....
Clothing 122	....	5	....
Psychology 203, 204	3	3	....
Education 237, 233	....	3	3
Sociology 231, 233, 241	....	5	6
Child Development 133	....	....	5
Home Economics Education 152	....	....	5
Foods and Nutrition 125	5	....	....
	18	19	19

Fourth Year (Extension Service)

	Fall	*Winter*	*Spring*
Education 505, 506	3	3	....
Home Administration 143 or Elective	5	5	....
Agricultural Education and Home Economics Extension	....	3	....
Home Economics Education 141, 142, 154	....	....	15
Industrial Arts 330	....	3	....
Electives	7–8	0–2	....
	15–16	14–16	15

Fourth Year (Teaching)

	Fall	*Winter*	*Spring*
Home Administration 143 and Electives or Electives or Home Economics Education 141, 142, 153	15	15	15
	15	15	15

INSTITUTION MANAGEMENT

The four-year curriculum in Institution Management is developed to meet the academic requirements for active membership in The Amer-

ican Dietetic Association and entrance to dietetic internships approved by the Executive Board of the Association. A graduate will be qualified for the following professions:

1. Hospital dietitians after an approved internship.
2. College instructors of Institution Management after graduate study.
3. Managers and owners of Food Service establishments.
4. Assistant food directors in Collegiate Food Service Departments.

The Department will assist qualified students in securing internships and graduate fellowships.

Curriculum

First Year

	Fall	*Winter*	*Spring*
Chemistry 111, 112, 113	5	5	5
English 211, 212, 244	5	5	3
Physical Education 210a, b, c	1	1	2
Home Economics Education 111	3	....	....
Home Administration 111, 121	....	....	....
Art 317	3	....	....
Clothing 110, 112, 113	2	3	3
Child Development 115	....	....	3
Music 208	....	....	3
	19	19	20

Second Year

	Fall	*Winter*	*Spring*
Zoology 111, 121	5	5	....
Foods and Nutrition 110, 111, 123	3	4	5
Physical Education 220a, b, c	1	1	1
English 224, 225	3	3	....
Psychology 200	....	....	5
Economics 231, 236	5	3	....
Bacteriology 123	....	....	5
History 234	....	....	3
Home Administration 121	....	4	....
	20	20	19

Third Year

	Fall	*Winter*	*Spring*
Chemistry 131, 132, 135	5	5	5
Foods and Nutrition 125, 127, 132	5	5	5

Accounting 301, 302, 303	3	3	3
Secretarial Science 317, 318	2	2	....
Foods and Nutrition 131	3	....	....
Institution Management 123, 124	....	5	3
Electives	....	....	3–4
	18	20	19–20

Fourth Year

	Fall	*Winter*	*Spring*
Institution Management 121, 122	5	5	....
Institution Management 125, 143	5	....	15
Foods and Nutrition 129	5	....	....
Home Administration 143 or Physics 311	5	5	....
Electives	....	5–10	....
	20	15–20	15

NURSERY SCHOOL EDUCATION

The four-year curriculum in Nursery School Education is developed to meet the needs of students who desire to become teachers or directors of nursery schools or kindergartens.

Curriculum

First Year

	Fall	*Winter*	*Spring*
Chemistry 101, 102, 103	4	4	4
English 211, 212, 244	5	5	3
Physical Education 210a, b, c, 213	1	1	2
Home Administration 112, 121	....	7	....
Home Economics Education 111	3	....	....
Art 317	3	....	....
Clothing 110, 112, 113	2	3	4
Music 208	....	....	3
Child Development 115	....	....	3
	18	20	19

Second Year

	Fall	*Winter*	*Spring*
Zoology 111, 121	5	5	....
Foods 110, 111, 112	3	4	3
Physical Education 220a, b, c	1	1	1
English 224, 225	3	3	....

Psychology 200, 201	5	3	....
Education 222, 224	....	3	3
Child Development 133	....	....	5
History 234	....	....	3
	17	19	19

Third Year

	Fall	*Winter*	*Spring*
Psychology 203, 204, 205	3	3	3
Nursery School Education 131, 132	6	....	....
Nursery School Education 133, 135	....	6	....
Economics 231, 236	5	3	....
Home Economics Education 142	5	....	....
Music 209	1	....	....
Sociology 231, 241	....	5	3
Clothing 121	....	....	4
Electives	....	0–3	0–5
	20	17–20	15–20

Fourth Year

	Fall	*Winter*	*Spring*
Nursery School Education 136, 141	9	....	....
Home Administration 143 or Electives	5	5	....
Electives	2–6	10–15	....
Nursery School Education 142	....	....	15
	16–20	15–20	15

CHILD DEVELOPMENT

115. Introduction to Child Development. Credit 3(2–2).

Survey of the needs of children and how these needs are being met by the home, school and community. Observation with various age groups required.

132. Child Development. Credit 3(3–0).

A study of the physical, mental, social, emotional and personality development of the child from early childhood through adolescence.

133. Child Development. Credit 5 hours—(3 hours lecture and laboratory hours arranged).

A comprehensive study of the physical, social, emotional, personality and language development of the child from birth through adolescence.

CLOTHING

The minimum fees listed for clothing courses refer to the probable cost of materials necessary for the construction of personal garments.

110. Clothing Selection. 2(1–2).

Selection of clothing for individual differences with emphasis on the elements of design and color.

112. Elementary Textiles. 3(1–4).

Textile fibers, their source, characteristics and production into fabric; the social, economic and hygienic aspects and care of clothing.

113. Elementary Clothing Construction. Credit 4(1–6).

Fundamental principles of clothing construction based on the use of the commercial pattern. Minimum cost $15.00.

114. Commercial Pattern Study. Credit 5(1–8).

A study of commercial patterns and probable variations in their design for garment construction. Minimum cost $5.00.

121. Children's Clothing. Credit 4(2–4).

A study of children's clothing with emphasis on the selection and construction of functional garments. Minimum cost $7.50.

122. Advanced Clothing Construction. Credit 5(2–6).

A consideration of the clothing needs of family members with laboratory experience to meet individual needs. Minimum cost $15.00.

123. Textiles. Credit 3(2–3).

Continuation study of the physical and chemical properties of textile fibers and fabrics with emphasis on the continuous scientific and technological developments.

131. Historic Costume. Credit 3(3–0).

The history of costume and its adaptation to our modern dress.

132. Fitting and Pattern Study. Credit 4(1–6).

Partial drafting of a foundation garment from which an individual flat pattern is made. Minimum cost $13.00.

133. Draping. Credit 5(2–6).

Draping and designing in the actual fabric on the form with emphasis on line, form and texture of fabric. Prerequisites: Clothing 131, Art 317.

134. Millinery. Credit 3(0–6).

An introduction to the use of various millinery equipment and materials. Minimum cost $10.00.

135. Advanced Millinery. Credit 5(1–8).

Design and execution of more difficult millinery problems. Minimum cost $10.00. Prerequisite: Clothing 134.

136. Costume Art. Credit 3(1–4).

Application of art principles to the development of original designs in clothing and accessories. Prerequisites: Clothing 131 and Art 320.

137. Tailoring for Women. Credit 5(2–6).

A study of the principles of tailoring as they apply to women's coats and suits; experiences in the handling of more difficult textile fabrics. Minimum cost $20.00. Prerequisite: Clothing 122.

140. Field Experience in Clothing. Credit 15 hours.

A course designed to give the student practical experiences on a commercial basis.

142. Special Problems in Clothing. Credit 5 hours.

Individual work on special problems in clothing.

151. Jewelry and Metalwork. Credit 2(0–4).

Laboratory experiences in the designing and making of jewelry and other small objects. Minimum cost $6.00.

152. Textile Design. Credit 2(0–4).

Fundamentals of textile design employing such methods as batik, stencil, block print, silk screen, paint and looms in making personal and household accessories.

153. Jewelry and Accessories. Credit 2(0–4).

Laboratory experiences in the use of various art media.

FOOD AND NUTRITION

Students enrolling in food preparation classes numbered above 112 should be prepared to purchase not less than two uniforms from the College Bookstore.

110. Elementary Nutrition. Credit 3(3–0).

A study of the basic principles of nutrition in the maintenance of optimum health.

111. Food Preparation. Credit 4(2–6).

A study of the principles of food preparation necessary for obtaining a standard product.

112. Family Foods. Credit 3(1–Laboratory hours arranged).

The application of the principles of nutrition and cookery to the planning, selection, preparation and service of the family's meals.

123. Nutrition and Dietetics. Credit 5(3–6).

A course concerned with the application of the scientific principles of nutrition to the planning of diets for various age groups.

125. Advanced Food Preparation. Credit 5(3–6).

Further study of the principles of food preparation with emphasis on the various methods of food preservation.

127. Meal Planning and Service. Credit 5(3–4).

Low and moderate cost food plans are made to meet the needs of different family groups with experiences in marketing, preparing and serving meals.

128. Child Nutrition. Credit 5(2–6).

A study of the principles of nutrition and their application to the feeding of children in family and nursery school groups.

129. Diet Therapy. Credit 5(3–6).

A study of dietary modifications necessary in the treatment of pathologic conditions. Prerequisites: Foods and Nutrition 123 and Zoology 121.

130. Recent Developments in Foods and Nutrition. Credit 3(3–0).

A study of recent research in foods and nutrition through discussion of reports in current scientific journals.

131. Nutrition Education. Credit 3(2–2).

A course designed to assist in the development of nutrition education programs in the school and community.

132. Experimental Cookery. Credit 5(2–6).

A study of the chemical and physical behavior of foods.

140. Special Problems in Foods and Nutrition. Credit 3–5 hours.

Individualized work on special foods and nutrition problems.

HOME ADMINISTRATION

111. Essentials of Home Management. Credit 3(3–0).

A study of the problems involved in efficient home management.

112. Home Management. Credit 3(3–0).

Managing and caring for the home including the utilization of family resources.

121. Health and Home Nursing. Credit 4(3–2).

Study of problems relating to family and community health; laboratory experiences in how to care for the sick in the home.

122. Personal and Family Finance. Credit 3(3–0).

Specific study of personal and family income and expenditures with emphasis on budget making.

134. Housing. Credit 4(3–2).

A course designed to help the student to interpret architectural plans for homes; practical problems in the adaptation of rooms for more adequate use by the family.

135. Home Furnishings. Credit 5(2–6).

Arrangement of home furnishings with emphasis on color, line and design; laboratory experience in construction principles of making slipcovers, draperies and other fabric furnishings. Prerequisite: H. A. 134.

142. Household Equipment. Credit 3(1–4).

Selection, operation, and care of household equipment.

143. Home Management Residence. Credit 5 hours.

Application of managerial principles and performance of household skills as they relate to personal, group, and family living.

HOME ECONOMICS EDUCATION

111. Personal and Group Living. Credit 3(2–2).

A course concerned with aiding in the solution of the immediate problems of personal and group living as the freshman girls find them at college and at home.

141. Demonstration Techniques. Credit 5(2–6).

The application of the principles of demonstration techniques in all phases of home economics.

142. Audio-Visual Techniques and Materials. Credit 5(2–6).

A course designed to give students practical experiences in the techniques of developing and using audio-visual materials in home economics.

152. Methods of Teaching Home Economics. Credit 5(5–0).

A course designed to acquaint the student with home and family life education in the elementary and secondary schools. Prerequisites:

A 1.5 grade point average in major courses and a 1.0 grade point average in education and psychology courses.

153. Observation and Directed Teaching. Credit 5 quarter hours.

Experience in conducting classes in off-campus teaching centers. A minimum of 6 weeks of teaching required.

154. Field Experience in Cooperative Extension Service. Credit 5 hours.

Experience in County Home Demonstration work. Minimum time—6 weeks.

INSTITUTION MANAGEMENT

101. Institution Management Science. Credit 5(3–4).

An application of the principles of science to the problems of institution management.

102. Institution Management Science. Credit 5(3–4).

Continuation of Institution Management 101.

103. Institution Management Science. Credit 5(3–4).

Continuation of Institution Management 102.

104. Institution Equipment. Credit 5(3–4).

Fundamental principles for planning and equipping small food service establishments.

121. Quantity Cookery. Credit 5(1–6).

The application of the principles of cookery to food preparation for group feeding; emphasis on work schedules, cost and portion control. Prerequisite: Foods and Nutrition 132.

122. Quantity Cookery. Credit 5(1–6).

A continuation of Institution Management 121.

123. Institution Organization and Management. Credit 5(5–0).

A study of the organization, management and administration of food service establishments.

124. Institution Organization and Management. Credit 3(3–0).

A continuation of Institution Management 123; emphasis on personnel management.

125. Institution Marketing. Credit 5(4–3).

A course in buying procedures for quantity purchases.

126. Institution Equipment. Credit 3(2–Laboratory hours arranged).

A study of selection, specifications, records and care of equipment for large scale food preparation and service.

127. Catering. Credit 3(0–6).

A course to improve skills and techniques in food preparation for special occasions.

128. Cost Accounting. Credit 5(0–10).

A study of cost control records in food and clothing businesses.

129. School Lunch. Credit 3(3–0).

A study of organization and administration of school lunch programs.

140. Special Problems in Institution Management. Credit 3(3–0).

Individual work on special problems in institution management.

141. Planning and Equipping Food Service Departments. Credit 3(2–2).

A course for students interested in administrative positions; emphasis on planning and remodeling food service departments.

142. Readings in Institution Management. Credit 3(3–0).

A study of institution management through reports and discussions of articles in periodicals.

143. Field Experience in Institution Management Credit 15 hours.

Unit I Discussion and observation of food service centers. Minimum time—4 weeks.

Unit II Individualized experiences in off-campus food service organizations. Minimum time—4 weeks.

Unit III Evaluation of field experience. Minimum time—2 weeks.

NURSERY SCHOOL EDUCATION

131. Play and Play Material for the Preschool Child. Credit 3(1–4).

Discussion of the importance of play in all aspects of child development. Experiences in developing creative art.

132. Literature for the Young Child. Credit 3(1–4).

A survey of prose and poetry for young children; criteria for the selection and age placement of stories.

133. Preschool Music. Credit 3(2–2).

Acquisition of an initial repertoire of children's tunes; listening to songs and records for the preschool child.

135. Preschool Science. Credit 3(2–2).

A resumé of fundamental science concepts needed for the teacher's own background; study of science situations most frequently of concern to young children; specific practice in handling and initiating such situations.

136. Preschool Testing. Credit 4(1–6).

Administering and interpreting test scores of the preschool child.

137. Creative Activities. Credit 3 to 5 hours.

Opportunity for developing creative expression in nursery school education.

138. Special Problems in Nursery School Education. Credit 3–5 hours.

Individual work on special problems in nursery school education.

141. Kindergarten and Preschool Methods. Credit 5(5–0).

Methods and materials in daily and long-range curriculum development to meet the needs of 2 to 5 year olds.

142. **Directed Teaching in the Nursery School.** Credit 15 hours.

Unit I Review of nursery school education principles and visits to nursery schools. Minimum time—2 weeks.

Unit II Directed teaching in a nursery school. Minimum time—6 weeks.

Unit III Evaluation of nursery school experience. Minimum time—2 weeks.

DEPARTMENT OF INDUSTRIAL EDUCATION

CHARLES W. PINCKNEY, *Chairman*

The public schools of North Carolina, like the public schools of many states, are in constant need of securing qualified teachers of industrial education. To meet the needs, A. and T. College offers training for industrial arts teachers and trade teachers of vocational industrial subjects.

DEPARTMENT OBJECTIVES

The courses offered by the Department of Industrial Education are designed to serve the following purposes:

1. To prepare teachers of industrial arts and vocational industrial courses for public school service and to offer additional training to industrial teachers now in service.
2. To develop the students' skill and manipulative ability in industrial processes.
3. To develop correct habits, attitudes and ideals for health and safety.
4. To supply students with the necessary informational background for shop teaching.
5. To give experience in typical teaching activities and practice in teaching industrial courses.
6. To familiarize students with aims, problems and literature relating to industrial education.
7. To develop an appreciation of the significance of industrial education in our society.
8. To stimulate a scholarly and scientific attitude toward problems of teaching.

TEACHER TRAINING FOR INDUSTRIAL ARTS EDUCATION

The prospective teacher of industrial arts education receives training in the fundamental skills of several trades. The fields of concentration are automobile mechanics, carpentry, ceramics, electricity, machine shop, masonry, mechanical drawing, radio servicing, welding and woodwork.

CURRICULUM FOR INDUSTRIAL ARTS EDUCATION

Freshman Year

(See First Year's Curricula of Engineering, Page 70.)

Sophomore Year

Course and No.	*Fall*	*Winter*	*Spring*
Woodwork, I.A. 321, 322, 323	5(0–10)	5(0–10)	5(0–10)
Industrial Arts Drawing, I.A. 331, 332, 333	3(0–6)	3(0–6)	3(0–6)
Electricity, I.A. 326, 327, 328	3(0–6)	3(0–6)	3(0–6)
Military or Air Science 221, 222, 223	2(2–2)	2(2–2)	2(2–2)
Physical Education Electives	1(0–2)	1(0–2)	1(0–2)
Voice & Speech Improvement, Eng. 224	.....	.....	3(2–2)
Music Elective	2(2–0)	.....	.....
Adolescent Psychology, Psy. 202	.....	3(3–0)	.....
Educational Psychology, Psy. 203	.....	.....	3(3–0)
Materials of Construction Ed. 324	3(3–0)	.....	.....
Vocational Education, Ed. 331	.....	3(3–0)	.....
	19	20	20

Junior Year

Course and No.	*Fall*	*Winter*	*Spring*
Woodturning, Upholstery I.A. 338, 339	3(0–6)	3(0–6)	.....
General Metal, I.A. 334, 335, 336	3(0–6)	3(0–6)	3(0–6)
**Technical Electives	3(0–6)	3(0–6)	3(0–6)
Physics 321, 322	5(3–4)	5(3–4)	.....
Principles of Sociology, Soc. 231	.....	.....	5(5–0)
Tests and Measurements, Psy. 204	.....	.....	3(3–0)
General Shop I.A. 349	.....	.....	3(0–6)
Vocational Guidance, Ed. 332	3(3–0)	.....	.....
Shop Management, Ed. 347	.....	3(3–0)	.....
*Electives	3( )	3( )	3( )
	20	20	20

Senior Year

Course and No.	*Fall*	*Winter*	*Spring*
Physical Education Electives	.....	1(0–2)	.....
Art 311, 312	3(0–6)	3(0–6)	.....
Economics 231, 234	5(5–0)	.....	5(5–0)
Personal and Community Hygiene, Phys. Ed. 234	5(5–0)	.....	.....
Principles of Secondary Ed., Ed. 327	.....	3(3–0)	.....
Trade Analysis, Ed. 341	3(3–0)	.....	.....
Methods of Teaching Ind. Ed., Ed. 343	.....	5(5–0)	.....
Observation & Practice Teaching, Ed. 344	.....	.....	5(5–0)
Current Problems in Ind. Ed., Ed. 502	.....	3(3–0)	.....
*Electives	3( )	3( )	3( )
	19	19	13

**Technical Electives—9 hours required in one area:

Carpentry 312, 313, 314
Auto Mechanics 311, 312, 313
Masonry 311, 312, 313
Radio 311, 312, 313
Art 337, 338, 339
Welding 311, 312, 313
Mech. Engr. 328, 329, 330
Sheet Metal 311, 312, 313

*Junior and senior electives may be taken in Advanced Military or Air Science. Planning of the electives will be made in consultation with the student's adviser.

COURSES IN INDUSTRIAL ARTS

321. General Woodwork. Credit 5(0–10).

Care and use of hand tools, principles of planning, squaring and laying out work. Special projects assigned to students in accordance with the student's skill.

322. General Woodwork. Credit 5(0–10).

Emphasis on the practical operation of power tools. Prerequisite: I.A. 321.

323. Advanced Woodwork. Credit 5(0–10).

Construction of projects from drawings or blueprints. Care of power machines, saw filing, band saw brazing, sharpening and setting planer knives. Prerequisite: I.A. 322.

326. Electric Wiring. Credit 3(0–6).

A study of the fundamental principles of two- and three-wire circuits for light and power. The study and use of electrical wiring materials and electrical codes.

327. General Electricity. Credit 3(0–6).

Instruction and laboratory practice covering fundamental principles of direct and of alternating current equipment. Study of meters, motors, generators, armature winding and alternating current circuits. Study of home appliances an intergral part of the course.

328. Electricity (Radio). Credit 3(0–6).

Theory and fundamentals of radio communication circuits, and power supplies. Testing of standard circuits, radio repair and code practice. Prerequisites: I. A. 326, 327.

329. Craft and Hobby Work. Credit 3(0–6).

A basic course in the faundamentals of craft work. Designed especially for teachers of arts and crafts, elementary teachers, leaders of scoutcraft, playgrounds, recreational centers, community centers, and for those who want merely the enjoyment which comes from working with materials. Construction of one or more small projects of wood, metal, leather, reed, or other available materials.

330. Repair and Maintenance of Home Furniture. Credit 3(0–6).

A course designed to help homemaking teachers meet specific problems in the improvement and care of home furniture. Instruction in simple upholstery teachniques and other processes using tools and accessories for home repair. Finishing and refinishing wood. Students encouraged to make an effort to provide their own work projects.

331. Industrial Arts Drawing. Credit 3(0–6).

A course for acquisition of information and development of skills needed by a teacher in industrial arts drafting. Utilization and explanation of modern techniques for teaching drawing at various levels in high school or vocational school. Instruction in A.S.A. conventions, projections, revolutions, developments, lettering and pictorial representation with reference to machine and woodworking drawing. Prerequisite: M. E. 312.

332. Industrial Arts Drawing. Credit 3(0–6).

Problems in sheetmetal drawing, shading, technical sketching, production illustration and industrial arts design. Prerequisite: I.A. 331.

333. Industrial Arts Drawing. Credit 3(0–6).

Basic elements in the planning and construction of residential buildings. Problems in floor plans, elevations, details and perspective. Study of kitchen, living rooms, dining room, bath room and bed room layout. Prerequisite: I.A. 332.

334. General Metals. Credit 3(0–6).

A general introduction to machine shop methods. Operation of the lathe, milling machine, drill press, shaper and grinding of cutting tools.

Heat treating of metals. Projects involving basic operations on each machine. Special emphasis is put on machine maintenance and machine shop calculations as well as related information.

335. General Metals. Credit 3(0–6).

Fundamental machine and hand tool operations; care, use, and adjustment of sheet metal equipment; the development of simple patterns. Projects involving art metal, metal spinning, soft and hard solder, raising, chasing, seaming, piercing, etching, coloring and other processes useful to teachers of metal shops. Study of related technical information; sources, cost and specifications of equipment and supplies.

336. General Metals. Credit 3(0–6).

General activities in metal work including ornamental iron, tool forging, elementary foundry, bench metal, oxacetylene welding and cutting. Study of related technical information; shop organization, courses of study, layout, equipment, operation, uses of instructional materials and supplies.

338. Woodturning. Credit 3(0–6).

Thorough drill in the cutting action of turning tools and methods of holding them. Projects in spindle and in face plate turning are selected for practice. Finishing and polishing on the lathe.

338a. Woodturning. Credit 3(0–6).

Instruction in elaborate and more intricate types of turning than are given in I.A. 338. Projects involving spherical and spiral turning included.

339. Upholstery. Credit 3(0–6).

Instruction in caning and seat weaving method of upholstering a plain board surface, methods of fastening webbing, burlap and its uses, upholstery with springs, hard-edge upholstery, and spring edge upholstery.

339a. Upholstery. Credit 3(0–6).

A continuation of 339, including construction or rebuilding of an upholstered project.

340. Wood Finishing. Credit 3(0–6).

Mechanical preparation of wood before staining, preparation and use of stains and the application of different classes of commercial stains, kinds of fillers—their preparation and application, refinishing.

340a. Wood Finishing. Credit 3(0–6).

Refinishing, French polishing, and special work in finishing and polishing on the lathe.

348. Comprehensive Shop Projects. Credit 3(0–6).

General construction, repairs, maintenance work or advanced projects involving wood turning, carving, inlaying, upholstering, and wood finishing.

349. General Shop. Credit 3(0–6).

Purpose and organization of general shops, instructional materials and procedures. Shop operating problems including personnel organization and equipment selection, project construction on a general shop basis.

COURSES IN INDUSTRIAL EDUCATION

324. Materials of Construction. Credit 3(3–0).

A study of the manufacture and physical properties of iron, steel, timber, cement, concrete, and other materials encountered in technical fields, and the A. S. T. M., specifications and methods of testing. Prerequisite: Chem. 113

325. Foundations of Industrial Education (Formerly I.A. 341). Credit 3(3–0).

An orientation course for industrial education freshmen. Course requirements, program operation, regulations, credits. Familiarizes the student with the underlying philosophy, basic principles, and prevailing practices and terminology in Industrial Arts and Vocational Education.

331. Vocational Education. Credit 3(3–0).

Study of principles, pratices, philosophy types and problems of federally aided vocational education programs. Special consideration given to agencies, their organization and responsibilities at the state and national levels.

332. Vocational Guidance. Credit 3(3–0).

The problem of vocational guidance, its beginning, organization and administration in high schools. Special attention to guidance in the Junior and Senior high school as it relates to the work of Industrial Arts. Fall.

333. Shop Safety Education. Credit 3(3–0).

This course provides the necessary lesson units and methods of teaching school shop safety as well as plans for developing complete shop safety education programs.

341. Trade Analysis. Credit 3(3–0).

Methods of analyzing occupations for the purpose of securing teaching content and determining instructional order. Trade elements analyzed for instructional content. Methods of developing elements into courses and preparation of instruction sheets.

343. Methods of Teaching Industrial Education. Credit 5(5–0).

Methods of presenting related information, procedures in giving demonstrations with tools and machines, testing and grading shop work, organization of subject matter and lesson planning.

344. Observation and Practice Teaching in Industrial Education. Credit 5(5–0).

Practical experience in conducting unit trade and industrial arts programs will be offered.

347. Materials, Equipment and Shop Management. Credit 3(3–0).

The discussion of problems of equipping and arranging trades and industrial art shops and the care of tools and materials, safety and management are discussed.

VOCATIONAL INDUSTRIAL EDUCATION*

This curriculum is designed for the preparation of shop and related subject teachers in secondary school programs in trades and industries.

The Vocational Industrial Education curriculum leads to the degree of Bachelor of Science in Vocational Industrial Education. Graduates holding this degree will have also met teacher certification requirements in Industrial Arts.

*To be certified by the State Department as a vocational shop and trade practice teacher, a person must present evidence of two years trade experience beyond the apprenticeship period in the trade he expects to teach.

Candidates desiring this degree must have at least two years successful trade experience in the trade they wish to teach. Students desiring degrees may enter with or without having the required practical experience. However, the student who has not had this experience when he enters must fulfill the requirement before graduation either by working parts of the school year, summers, or by completing the work experience after finishing required residence courses.

CURRICULUM FOR VOCATIONAL INDUSTRIAL EDUCATION

Freshman Year

(See First Year's Curricula of Engineering, Page 70.)

Sophomore Year

Course and No.	*Fall*	*Winter*	*Spring*
‡Technical Electives	5( )	5( )	6( )
Industrial Arts Drawing, I.A. 331, 332, 333	3(0–6)	3(0–6)	3(0–6)
Military or Air Science 221, 222, 223	2(2–2)	2(2–2)	2(2–2)

Physical Education Electives	1(0–2)	1(0–2)	1(0–2)
Materials of Construction, I.Ed. 324	3(0–0)	.....	.....
Physics 321, 322	5(3–4)	5(3–4)	.....
Vocational Education, Ed. 331	.....	3(3–0)	.....
Principles of Sociology, Soc. 231	.....	.....	5(5–0)
Contracts and Specifications, M.E. 327	.....	.....	3(3–0)
	19	19	20

Junior Year

Course and No.	*Fall*	*Winter*	*Spring*
‡Technical Electives	6( )	5( )	3( )
Art 311, 312, 313	3(0–6)	3(0–6)	3(0–6)
Adolescent Psychology, Psy. 202	3(3–0)	.....	.....
Educational Psychology, Ed. 231, Psy. 203	.....	3(3–0)	.....
Tests and Measurements, Psy. 204	.....	.....	3(3–0)
Vocational Guidance, Ed. 332	3(3–0)	.....	.....
Shop Safety Education, Ed. 333	.....	.....	3(3–0)
Voice and Speech Improvement, Eng. 224	.....	3(3–0)	.....
Shop Management, Ed. 347	.....	3(3–0)	.....
Physical Education Elective	1(0–2)	.....	.....
Physical Education 234	.....	.....	5(5–0)
†Electives	3( )	3( )	3( )
	19	20	20

Senior Year

Course and No.	*Fall*	*Winter*	*Spring*
‡Technical Electives	3( )	3( )	.....
Audio-Visual Laboratory, Ed. 225	3(2–2)	.....	.....
Principles of Secondary Education, Ed. 237	.....	3(3–0)	.....
Trade Analysis, Ed. 341	3(3–0)	.....	.....
Methods of Teaching Ind. Ed., Ed. 343	.....	5(5–0)	.....
Observation and Practice Teaching, Ed. 344	.....	.....	5(5–0)
Diversified Occupations Programs, Ed. 520	3(3–0)	.....	.....
Teaching Problems in Ind. Education, Ed. 502	.....	3(3–0)	.....
Organization of Related Study Material, Ed. 521	.....	3(3–0)	.....
Economics 231, 234	5(5–0)	.....	5(5–0)
†Electives	3( )	3( )	3( )
	20	20	13

GRADUATE PROGRAM IN INDUSTRIAL EDUCATION

Graduate work in industrial education aims to aid the promotion of industry by providing advanced technical training for those who plan to follow industrial careers and for teachers of industrial arts education or vocational industrial education. The department offers instruction for the following types of students: (1) those in the field who desire advanced training as teachers or supervisors of unit and general industrial arts shops in junior and senior high schools; and in schools of the smaller communities; (2) experienced tradesmen with the necessary teaching requirements who desire additional training in the development and conduct of programs of industrial education, especially those established under the Smith-Hughes Act; (3) teachers of related or cognate subjects; (4) others who desire further training in these fields.

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‡Technical Electives will be in consultation with adviser to meet state certification requirements for Industrial Arts. Minimum of nine credit hours are required in each of the following areas: wood, metal, electricity, drawing and nine credits in other elective areas. Technical Electives may include I.A. 326, 327, 328, 321, 322, 349, 334, 335, 336; M.E. 328, 329, 330; Weld. 311, 312; Radio 311, 312, 313; Carpentry 311, 312, 313; Cabinet Making 311, 312, 313; Sheet Metal 311, 312, 313.

†The junior and senior electives may be taken in Advanced Military or Air Science. Planning of the electives will be made in consultation with the student's adviser.

NOTE: For general requirements for the Master of Sciences degree in Industrial Education see pages 80-86.

ACADEMIC COURSES IN INDUSTRIAL EDUCATION

Ind. Ed. 506. Plastic Craft.
Ind. Ed. 508. Handicrafts
Ind. Ed. 608. Advanced Furniture Design and Construction
Ind. Ed. 609. Electricity for Industrial Arts Teachers.
Ind. Ed. 614. Advanced Drafting Techniques
Ind. Ed. 613. Comprehensive General Shop
Ind. Ed. 611. Problems in Industrial Arts
Ind. Ed. 612. Problems in Industrial Arts

COURSES IN INDUSTRIAL EDUCATION

Graduates and Advanced Undergraduates

502. Teaching Problems in Industrial Education. Credit 3(3–0).

A general methods course for industrial education students. Problems involve analysis of objectives, curriculum content, text and reference books, teaching aids and devices, remedial instructions, cumulative records, storage systems, organizing class, teaching plans, safety programs, storage systems information about students, demonstration. Prerequisites: Ed. 341, I.A. 347.

504. History and Philosophy of Industrial Education. Credit 3(3–0).

Chronological and philosophical development of industrial education with special emphasis on its growth and function in American schools.

506. Plastic Craft. Credit 3(0–6).

For teachers of industrial arts, arts and crafts and those interested in plastics as a hobby. Operations in plastics analyzed and demonstrated; design, color, kinds and uses of plastics, how plastics are made and sold; vocational information. Projects suitable for class use constructed.

508. Handcrafts. Credit 3(0–6).

For teachers of Industrial Arts, arts and crafts and those interested in craft work as a hobby. Covers the materials, tools and processes used in, and craft activities carried on in elementary and junior high schools that do not have specialized shops. Also of value to grade teachers who feel the necessity for more information regarding the materials, tools, and processes frequently employed in an activity-type program.

520. Diversified Occupations Programs (Formerly Industrial Education 620). Credit 3(3–0).

A course designed to give the prospective teachers of vocational education a knowledge of the basic concepts and processes of co-operative work in general, with special attention to diversified occupations.

521. Organization of Related Study Material. Credit 3(3–0).

The principles of selecting and organizing both technical and general related instructional material for trade extension and diversified occupations classes.

604. Supervision and Administration of Industrial Education. Credit 3(3–0).

Relation of industrial education to the general curriculum and the administrative responsibilities entailed. Courses of study; relative costs; coordination problems; class and shop organization, and the development of an effective program of supervision. Selection of teachers and their improvement in-service. Of interest to school administrators, teachers of industrial arts, and vocational-industrial subjects.

605. Curriculum Laboratory in Industrial Education. Credit 3(3–0).

Review of basic principles of the preparation of instructional materials for classroom use. Students select and develop some significant area of instruction for use in a shop or related subject class. Courses of study that function in teaching situations are prepared. Opportunity afforded to analyze existing courses of study.

606. Research and Literature in Industrial Education. Credit 3(3–0).

Survey of printed reports; critical analysis; acquaintance with types of literature. Study of techniques of research and reporting of the results of research.

608. Advanced Furniture Design and Construction. Credit 3(0–6).

Laws, theories and principles of aesthetic and structural design, planning, designing, pictorial sketching and furniture drawing. Laboratory work involving setting up, operating and maintaining furniture production equipment, plus forms, requisitions, orders, invoices, stock bills, buying and professional problems. Prerequisite: Permission of instructor.

609. Electricity for Industrial Arts Teachers. Credit 3(2–2).

For teachers and prospective teachers of Industrial Arts. Emphasis placed on the selection and construction of projects useful in school shops, development of related information, Theory and fundamentals of Electricity and radio communication, selecting equipment and supplies, course organization and instructional materials.

611. Problems in Industrial Arts. Credit 3(0–6).

A comprehensive course in general bookbinding. Instruction in planning and construction of projects such as binding new books, repairing and binding old books, binding magazines and binding photographs.

612. Problems in Industrial Arts. Credit 3(0–6).

A comprehensive course in silk screen printing. Instruction given in planning and construction of projects in silk screen printing activities.

613. Comprehensive General Shop (Formerly Problems in Industrial Arts). Credit 3(2–2).

An advanced course in general shop techniques. Practical work to meet individual needs in industrial laboratories. Problems involving experimentation in woodwork, electricity, bookbinding, metal work, leather and plastics. General Shop organization; current practices, equipment, instructional materials and procedures.

614. Advanced Drafting Techniques. Credit 3(3–0).

For teachers with undergraduate preparation or trade experience. School techniques, standards, conventions, devices, experimentation in advance of opportunities offered in regular courses. Use of literature and research expected.

623. Construction and Use of Instructional Aids. Credit 3(2–2).

The analysis of various instructional aids useful in shop teaching, planning, designing, and construction of various teaching aids. Facilities for laboratory work provided.

624. Laboratory Planning for Industrial Shops. Credit 3(3–0).

Study of the principles involved in the design, selection, location, installation, and care of equipment suitable for high school industrial arts laboratories or vocational industrial departments.

631. General Industrial Education Programs. Credit 3(3–0).

Development on local, state, and national levels of day industrial schools, evening industrial schools, part-time day and evening schools. Their organization types, courses of study, scope of movement, study of special student groups, fees and charges, buildings and equipment.

632. Test in Industrial Subjects. Credit 3(3–0).

Study and application of principles of achievement test construction to shop and drawing subjects; evaluation of results.

DEPARTMENT OF MATHEMATICS

J. M. MARTEENA, *Chairman*

Objectives of the Department of Mathematics are as follows:

1. To review and strengthen students in the basic fundamentals of mathematics in order that they may be adequately equipped for expressing or interpreting quantitative ideas in this and related areas.
2. To provide an opportunity for all students to increase their sense of utility of the subject matter by emphasizing the application of mathematical processes to problems involving personal and social living.
3. To equip those students whose interests and abilities lead to further study, research and/or technology with an adequate mathematical background.
4. To contribute to the teaching efficiency of prospective secondary school mathematics teachers by insuring mastery of essential subject-matter materials, and the development of a reasonable degree of skill, accuracy and speed in dealing with these materials.

Graduation Requirements:

Candidates for the B.S. degree in mathematics and those for the B.S. in engineering mathematics must complete 220 hours of work approved by the Dean.

All freshmen are required to take a placement test in mathematics. Those failing this test must register for Math. 309.

Mathematics majors and minors should have an average of "B" or better in their mathematics courses.

Minimum requirements for both majors in mathematics shall be: Math. 311, 312, 313, 321, 322, 323, 314, 316, 331. Engineering Math. majors must take in addition to the above Math. 318, 324, 501, 506.

Required Courses for Freshmen and Sophomores:

Math. 311, 312, 313, 321, 322, 323	30 hrs.
English 211, 212, 213	15 hrs.
Physics 321, 322, 323*	15 hrs.
Chem. 111, 112, 113	15 hrs.
Language	15 hrs.
M. E. 311, 312, 314 (Engineering Math. Only)	9 hrs.
Physical Education	6 hrs.
Music and Art Appreciation (Math. Majors Only)	9 hrs.
Electives	12 hrs.

OUTLINE OF COURSES FOR MAJORS IN MATHEMATICS

Junior Year

Course and No.	*Fall*	*Winter*	*Spring*
Math. 314, 316, 331	5(5–0)	5(5–0)	5(5–0)
Economics 231, 234	.....	5(5–0)	5(5–0)
Education	6 hrs.	6 hrs.	6 hrs.
Electives	7 hrs.	3 hrs.	3 hrs.
	18 hrs.	19 hrs.	19 hrs.

*Math majors may substitute Hist. 213 for Physics 323.

Men students who must satisfy the requirements of Mil. Sc. or Air Sc. should do so during the first two years.

Engineering Math. majors must take M.E. 311, 312, 314 during the freshman year.

Students must take a minimum of 18 hours per quarter during freshman and sophomore years.

Senior Year

Course and No.	*Fall*	*Winter*	*Spring*
Phy. Ed. 234	.....	.....	5(5–0)
History 210, 221 or 222	.....	5(5–0)	5(5–0)
Education 346	5(5–0)	.....	.....
Education 351	5(5–0)	.....	.....
Electives	3 hrs.	8 hrs.	8 hrs.
	13 hrs.	16 hrs.	18 hrs.

OUTLINE OF COURSES FOR MAJORS IN ENGINEERING MATHEMATICS

Junior Year

Course and No.	*Fall*	*Winter*	*Spring*
Math. 506, 331, 316	5(5–0)	5(5–0)	5(5–0)
M. E. 331, 332, 333	5(5–0)	5(5–0)	5(5–0)
Physics 332, 333, 338	3(3–0)	3(3–0)	5(5–0)
Electives	5 hrs.	5 hrs.	3 hrs.
	18 hrs.	18 hrs.	18 hrs.

Senior Year

Course and No.	*Fall*	*Winter*	*Spring*
Math. 318, 324, 501	5(5–0)	3(3–0)	5(5–0)
Economics 231, 234	5(5–0)	5(5–0)	.....
Electives	8 hrs.	8 hrs.	8 hrs.
	18 hrs.	16 hrs.	13 hrs.

COURSES IN MATHEMATICS

309. Remedial Mathematics. Credit 3(3–0).

Review of the fundamentals of basic mathematics and development of basic concepts. Required of entering students who do not pass the mathematics placement test.

311. **College Algebra.** Credit 5(5–0).

Review of elementary algebra. Also, study of quadratics, simultaneous quadratic equations, binomial theorem, progressions, determinants and permutation.

312. **Plane Trigonometry.** Credit 5(5–0).

Functions of angles and their practical applications to solution of the right and oblique triangles. Prerequisites: College Algebra and Plane Geometry.

313. **Analytic Geometry.** Credit 5(5–0).

A thorough study of cartesian co-ordinates, curves, loci, straight line circle, polar co-ordinates and conic sections completes the plane analytic geometry. Co-ordinates in space, loci, the plane and the straight line completes the course. Prerequisites: Math. 312.

314. History of Mathematics. Credit 5(5–0).

A survey of the development of mathematics by chronological periods, with biographical references, illustrations of national and racial achieve-

ments, and discussions of the evolution of certain important topics of elementary mathematics.

315. Mathematics of Business. Credit 5(5–0).

A basic course offered primarily for students of Business Administration. A study of elementary principles of mathematics as applied to investments, sinking funds, annuities, insurance, etc. A thorough study of interests—simple and compound. Prerequisite: Math. 312.

316. Theory of Equations. Credit 5(5–0).

Methods of solving cubics quartics and other higher algebraic equations. Methods of approximating roots, systems of equations, elements of determinants. Prerequisite: Math. 313.

317. Solid Analytic Geometry. Credit 3(3–0).

A study of lines and planes in space, quadric surfaces, and transformations. Prerequisite: Math. 313.

318. Elementary Mathematical Statistics. Credit 5(5–0).

A general course covering the descriptive and analytical measures of statistics. Prerequisites: Math. 311, 315.

319. Higher Algebra. Credit 3(3–0).

Study of abstract mathematical systems including groups, rings, and fields, and in introduction to matrix theory.

320. College Geometry. Credit 3(3–0).

Modern Euclidean geometry, including such topics as the nine-point circle, harmonic section, and inversion. Introduction to Non-Euclidean geometries. Prerequisite: High School Geometry.

321, 322, 323. Differential and Integral Calculus. Credit 5(5–0) Ea.

A unified course covering the fundamentals of differential and integral calculus with applications. Prerequisite: Math. 313.

324. Surveying. Credit 3(1–4).

The methods of using the compass, transit, tape and level in making plane surveys. Lectures and field work. Elementary stadia work. Prerequisite: Math. 312.

326. Mechanics (Same as M.E. 331). Credit 5(5–0).

Prerequisite: Math. 321.

331. Differential Equations. Credit 5(5–0).

Solution of standard types of differential equations, with applications in electricity and mechanics. Prerequisite: Math. 323.

Advanced Undergraduates and Graduates

501. Vector Analysis. Credit 5(5–0).

A study of the processes of vector analysis, with a treatment of the

vector functions and operations as applied in theoretical work. Prerequisite: Math. 323.

502. Mathematics of Life Insurance. Credit 3(3–0).

Probability, mortality tables, life insurance, annuities, endowments, computation of net premiums, evaluation of policies, construction and use of tables.

503, 504. Integrated Mathematics. Credit 3(3–0) ea.

A study of the logical development of the numbers system, including the complex numbers, the theory of algebra, trigonometry, analytic geometry, differentiation, integration and the regular solids, hyperbolic functions and the theory of construction with straight edge and compasses; a mathematical background for mathematics teachers in the senior high school, junior college and technical school; also shows how trigometry, algebra, analytic geometry and elementary calculus can be integrated into a unified course. Prerequisite: Calculus 321.

505. Numerical Computation (Formerly 504). Credit 3(3–0).

Interpolation, numerical solution of equations, approximations, numerical integration, construction of tables.

506. Advanced Calculus. Credit 5(5–0).

Review of differentiation and integration, approximation of integrals, partial derivatives, line integrals, integral theorems, applications to geometry, physics and mechanics.

507. Mathematical Statistics. Credit 3(3–0).

Averages, moments, correlation, probability, the normal and Poisson's distribution, the Gram-Charlier series, the distribution of statistics, sampling of populations, the Lewis theory, Sheppard's corrections, maximum likelihood, and other selected topics.

603. Advanced Differential Equations. Credit 5(5–0).

Formulation of practical problems as solutions of differential equations, method of solving type forms, systems of equations, singular solutions, methods of approximation, and introduction to partial differential equation.

MATHEMATICS EDUCATION

346. Methods of Teaching Mathematics. Credit 5(5–0).

A course which deals with evaluation of subject matter, materials, methods and techniques, and objectives in the teaching of mathematics in the junior and senior high school. Required of those planning to teach the subject. Prerequisite: 30 hours of Mathematics and 18 hours of Education and Psychology.

351. Observation and Practice Teaching. Credit 5(5–0).

Supervised student teaching in accredited high schools of the State. Designed to provide the student an opportunity to put to use methods, techniques, and materials of instruction in a real classroom situation. Prerequisite: Math. 326. Maximum load, including Math. 327, will be 13 hours.

DEPARTMENT OF MECHANICAL ENGINEERING

J. M. MARTEENA, *Chairman*

This curriculum offers a broad training in the scientific principles in the field of mechanical engineering and correlates this training with applications to the specific areas of machine design, heat power, heating and ventilation, refrigeration, thermodynamics, industrial management, and manufacturing problems.

Lectures and class instruction are supplemented by laboratory investigations designed to emphasize the engineering and economic principles involved. Students admitted without credit in solid geometry will be required to take it during the freshman year without credit.

CURRICULUM

Freshman Year

(See First Year's Curricula of Engineering, Page 70.)

Sophomore Year

Course and No.	*Fall*	*Winter*	*Spring*
Physics 321, 322, 323	5(3–4)	5(3–4)	5(3–4)
Mathematics 321, 322, 323	5(5–0)	5(5–0)	5(5–0)
Military Science 221, 222, 223 or Air Science 221, 222, 223	2(2–2)	2(2–2)	2(2–2)
Machine Shop Practice, M.E. 328, 329	.....	2(0–4)	2(0–4)
Mechanical Drawing 323	3(0–6)	.....	.....
Engineering Problems M.E. 318, 319	1(0–2)	1(0–2)	.....
Mechanism, M.E. 321	.....	.....	3(2–2)
Economics 231	.....	5(5–0)	.....
Surveying, Math. 324	.....	.....	3(1–4)
Government in American Society, Pol. Sc. 211	5(5–0)	.....	.....
	21	20	20

Junior Year

Course and No.	*Fall*	*Winter*	*Spring*
Electrical Engineering 321, 322, 323	5(3–4)	5(3–4)	5(3–4)
Mechanics, M.E. 331, 332, 333	5(5–0)	5(5–0)	5(5–0)
Heat Power Engineering, M.E. 336	.....	.....	3(3–0)
Heating and Ventilating, M.E. 334, 335	3(3–0)	3(3–0)	.....
Thermodynamics, M.E. 325, 326	3(3–0)	3(3–0)	.....
Mech. Engineering Laboratory I, M.E. 351, 352, 353	1(0–3)	1(0–3)	1(0–3)
Electives	3( )	3( )	3( )
	20	20	17

Senior Year

Course and No.	*Fall*	*Winter*	*Spring*
Machine Design, M.E. 341, 342, 343	5(5–0)	5(3–4)	5(3–4)
Heat Power Engineering, M.E. 344, 345	3(3–0)	3(3–0)	.....
Hydaulics, M.E. 337	.....	.....	3(3–0)
Materials of Construction, I. Ed. 324	3(0–0)	.....	.....
Contracts and Specifications, M.E. 327	.....	.....	3(3–0)
Internal Combustion Engines, M.E. 338	.....	5(5–0)	.....
Mechanical Engineering Laboratory II, M.E. 354, 355, 356	1(0–3)	1(0–3)	1(0–3)
Testing Materials Laboratory, M.E. 346	2(0–4)	.....	.....
Metallurgy, M.E. 339	3(3–0)	.....	.....
Economics 234	.....	.....	5(5–0)
Electives	3( )	4( )	3( )
	20 hrs.	18 hrs.	20 hrs.

*NOTE: Junior and senior electives may be taken in Advanced Military or Air Science. Planning of the electives will be in consultation with student's adviser.

DESCRIPTION OF COURSES

311, 312. Engineering Drawing. Credit Each 3(0–6).

Instrument practice; lettering; geometrical construction; projections; sections; auxiliary projections; revolution; pictorial drawing; intersection and development.

314. Descriptive Geometry. Credit 3(0–6).

Representation of common geometrical magnitudes with points, lines, planes, and solids; concurrent noncoplanar forces; the solution of problems.

317. Pattern Making. Credit 3(0–6).

Care and use of tools; laying out work; laboratory practices and modern methods of pattern making; wood used, glued joints, methods of building up draft shrinkage, coating and storage. Small individual projects.

318, 319. Engineering Problems. Credit Each 1(0–2).

Introduction to the fields of engineering; analysis and solution of selected elementary engineering problems; systematic procedure and accuracy in making and checking computations; use of slide-rule and tables. Prerequisite: Math. 312.

321. Mechanism. Credit 3(2–2).

A condensed course covering relative motions, velocities and accelerations of machine parts including linkages, cams and gears. Prerequisite: M.E. 323, Math. 313, Physics 321.

323. Engineering Drawing. Credit 3(0–6).

Drawing of fasteners, springs and gears; detail and assembly drawings; tracing and reproduction methods. Prerequisite: M.E. 314.

325, 326. Thermodynamics I, II (Same as Physics 332, 333).

327. Contracts and Specifications. Credit 3(3–0).

Elementary principles of contracts involving bids and bidders; methods of payment for contracts and extra work; preparation and writing of specifications. Prerequisite: Eng. 213.

328, 329, 330. Machine Tool Laboratory. Credit Each 2(0–4).

A study of the construction, care and operation of various machine tools; use of special tools and measuring instruments; construction of projects. Prerequisite: M.E. 311.

331. Mechanics. Credit 5(5–0).

Static, analytical and graphic treatment of systems of forces, couples, stresses in frames and trusses; distribution forces, centroids, moments of inertia. Prerequisite: Physics 321, Math. 323.

332. Mechanics. Credit 5(5–0).

Dynamics and Kinetics, rectilinear and curvilinear motion, relative velocity and acceleration, work and energy, impact, moment of momentum. Prerequisite: M.E. 331.

333. Strength of Materials. Credit 5(5–0).

Shear and bending moment diagrams, stresses in beams, shafts, and columns; combined stresses, deflection in beams, fiber stresses and their distribution; tension, compression shear and torsion. Prerequisite: M.E. 332.

334, 335. Heating and Air Conditioning. Credit Each 3(3–0).

Principles of heating and air conditioning and their applications to the design of heating and air conditioning systems; study of principal equipment; design, layout and controls employed in various types of systems. Prerequisite: Physics 322.

336. Heat Power Engineering. Credit 3(3–0).

A descriptive and analytic study of the application and utilization of heat in the steam boiler, steam engine, steam turbine and power plant auxiliaries; fuels and combustion. Prerequisite: M.E. 326.

337. Hydraulics. Credit 3(3–0).

Principals of static and dynamic behavior of fluids with some applications to hydraulic machinery and structures. Prerequisite: M.E. 326.

338. Internal Combustion Engines. Credit 5(5–0).

A study of the Otto and Diesel type of engines and their auxiliaries; fuel performance; design, applications and economics. Discussions, problems. Prerequisite: M.E. 325.

339. Metallurgy. Credit 3(3–0).

The production, constitution, and properties of ferrous and nonferrous engineering metals and alloys; effects of mechanical working and heat treatment; corrosion and its prevention. Prerequisite: Chem. 113.

341. Machine Design. Credit 5(5–0).

Review of the properties of materials commonly used in machine construction; elementary stress analysis; combined stresses; working stresses. Prerequisites: M.E. 321 and M.E. 333.

342, 343. Machine Design. Credit Each 5(3–4).

Application of fundamental stress analysis to the design of machine elements to withstand varying forces and to operate without excessive wear at friction areas. Prerequisite: M.E. 341.

344, 345. Heat Power Engineering. Credit Each 3(3–0).

A study of power-plant processes including heat transfer; the sources of energy; the economic use of various fuels; heat balance; prime movers; steam boilers and auxiliaries as applied to power generation. Prerequisite: M.E. 336.

346. Testing Materials Laboratory. Credit 2(0–4).

Laboratory work devoted to experiments and standards tests on various engineering materials including steel, iron, wood, brick, sand, gravel, cement and concrete. Prerequisite: M.E. 333.

347. Hydraulic Machinery. Credit 3(3–0).

A study of the theory, construction and operating characteristics of the principal types of hydraulic machinery. Lectures, recitations, problems.

351, 352, 353. Mechanical Engineering Laboratory I. Credit Each 1(0–3).

Calibrating pressure, speed, temperature and power measuring instruments; the testing of fuels, lubricants, pumps, compressors, heating, ventilating, and refrigerating equipment. Prerequisites: M.E. 319, Physics 323. Co-requisites: M.E. 325, 326, 336.

354, 355, 356. Mechanical Engineering Laboratory II. Credit Each 1(0–3).

Advanced study and tests in the areas of power plants, heating and air conditioning, metallurgy, fluid flow, compressed air, fuels and combustion, lubricants, steam engines, turbines and internal combustion engines. Prerequisite: M.E. 353. Co-requisites: M.E. 344, 345.

DEPARTMENT OF MUSIC

HOWARD T. PEARSALL, *Chairman*

Since music is recognized as an important part of life, the principal and ultimate aim of our courses is directed toward the development of interest in and a sincere desire to understand and to appreciate more fully all types of music. The curriculum is designed to give the student a thorough training so that he will be prepared to teach music, to continue the study of music after the completion of these courses, and to be an influencing factor in the cultural development of his community.

Suggested Outline of Courses for Majors and Minors in Band Music

Freshman Year

Course and No.	*Fall*	*Winter*	*Spring*
Math. 311, 312, College Algebra, Trig.	5(5–0)	5(5–0)	.....
Mus. 227-1a, 227-1b, 227-1c, Piano Class ..	1(0–2)	1(0–2)	1(0–2)
Mus. 240-1a, 240-1b, 240-1c, Senior Band ..	1(0–5)	1(0–5)	1(0–5)
Eng. 211, 212, 213, Grammar and Comp. ..	5(5–0)	5(5–0)	5(5–0)
Fr. 211, 212, 213, Beginner's French	5(5–0)	5(5–0)	5(5–0)
Bot. 111 or Zool. 111	.....	.....	5(3–4)
	17	17	17

Sophomore Year

Course and No.	*Fall*	*Winter*	*Spring*
Mus. 221, 222, 223, History of Music	3(3–0)	3(3–0)	3(3–0)
Mus. 224, 225, 226, Harmony	3(3–0)	3(3–0)	3(3–0)
Music 227-2a, 227-2b, 227-2c, Advanced Piano Class	1(0–2)	1(0–2)	1(0–2)
Mus. 228-1a, 228-1b, 228-1c, Major Instrument	2(0–5)	2(0–5)	2(0–5)
Mus. 240-2a, 240-2b, 240-2c, Senior Band ..	1(0–5)	1(0–5)	1(0–5)
History 210, 213, 221	5(5–0)	5(5–0)	5(5–0)
Phy. 311, 312	5(4–2)	5(4–2)	.....
Vocation	.....	.....	3(0–6)
	20	20	18

Junior Year

Course and No.	*Fall*	*Winter*	*Spring*
Mus. 217 Percussion Instruments	2(1–2)	.....	.....
Mus. 218 Woodwind Instruments	.....	2(1–2)	.....
Mus. 219 Brass Instruments	.....	.....	2(1–2)
Mus. 228-2a, 228-2b, 228-2c Major Inst. ...	2(0–5)	2(0–5)	2(0–5)
Mus. 229a, 229b, 229c Minor Instrument...	1½(0–3)	1½(0–3)	1½(0-3)
Mus. 236 Public School Methods	3(3–0)	.....	.....
Mus. 240-3a, 240-3b, 240-3c Senior Band ...	1(0–5)	1(0–5)	1(0–5)
Minor or elective (Education)	8(8–0)	8(8–0)	8(8–0)
	17½	14½	14½

Senior Year

Course and No.	*Fall*	*Winter*	*Spring*
Mus. 228-3a, 228-3b, 228-3c Major Inst. ..	2(0–2)	2(0–2)	2(0–2)
Mus. 244, Band Technics	5(5–0)	.....	.....
Mus. 247, Band Arranging	.....	5(5–0)	.....
Minor or elective (Education)	10(10–2)	7(7–0)	9(9–0)
	17	14	11

This outline of courses should be worked in with the required courses for all students in the School of Education and Science. All students should remember that most courses in music are in sequence, and each sequence should be started in the Fall quarter.

It should be noted that all majors and minors in band music will be required to play in one of the bands throughout the four years, in-

cluding participation in the Senior Band for one year. Participation on student recitals is also a requirement.

A course in instrumental music designed to prepare students to organize and to train high school bands is available to qualified persons. Those interested should apply to the band director and be prepared to take a preliminary examination upon entering.

All persons interested in either a major or a minor in band music are required to study piano for two years and complete instruction upon both a major and a minor instrument.

COURSES OF INSTRUCTION

MUSIC APPRECIATION AND HISTORY

Nine hours of Music Appreciation and Art Appreciation are required in the School of Education and Science.

211. Music Appreciation. Credit 2(1–2).

A study of rhythm, harmony, melody, simple form, vocal music, and the orchestra.

212. Music Appreciation. Credit 2(1–2).

A study of classicism and romanticism, program and descriptive music, sonata form and the symphony.

213. Music Appreciation. Credit 2(1–2).

The overture, the concerto, impressionism and modernism.

221. History and Appreciation of Music. Credit 3(3–0).

Music of the ancient Greeks and the medieval period.

222. History and Appreciation of Music. Credit 3(3–0).

Music of the seventeenth, eighteenth and nineteenth centuries.

223. History and Appreciation of Music. Credit 3(3–0).

Music of the Neo-Romantic and Modern Periods.

THEORY

224. Harmony. Credit 3(3–0).

The study of the primary triads in keyboard harmony, and in ear-training and dictation.

225. Harmony. Credit 3(3–0).

Includes the Dominant Seventh, the minor mode, and nonharmonic tones.

226. Harmony. Credit 3(3–0).

Introduces the secondary triads and seventh chords and the Dominant Ninth, and a study of modulation by the Dominant Seventh and the common chord.

227. Band Arranging. Credit 5(5–0).

The art of writing for small combinations of instruments; the art of sectional writing for instruments; and the art of scoring for full band.

MUSIC EDUCATION

209. Solfeggio. Credit 1(0–2).

Learning to sing simple melodies at sight.

217. Percussion Instruments. Credit 2(1–2).

The percussion instruments studied. Some proficiency on at least one instrument of this section is required of each student.

218. Woodwind Instruments. Credit 2(1–2).

The woodwind instruments studied. Some proficiency on at least one instrument of this section is required of each student.

219. Brass Instruments. Credit 2(2–1).

The brass instruments studied. Some proficiency on at least one instrument of this section is required of each student.

235. Public School Methods. Credit 5(5–0).

The materials and methods for teaching in the elementary schools.

236. Public School Methods. Credit 3(3–0).

A comprehensive course covering materials and methods in the public schools.

237. Conducting. Credit 3(1–4).

The study of the technique of the baton and the study of the different forms of conducting.

244. Band Methods. Credit 5(5–0).

School band organization and administration.

246-1abc, 2abc, 3abc, 4abc. Voice Class. Credit 2(0–4).

Open to qualified persons who wish to know the techniques of vocal culture.

APPLIED MUSIC

Each music major will select a major instrument and two minor instruments. One of the minor instruments should be piano if the student has not had such study. Thirty-two quarter hours of applied music are required for State of North Carolina certification and these instruments should be started not later than the sophomore year. Music 217, 218, 219 may be included in the total number of hours for credit. Major instruments must be studied for three years, and minor instruments for five quarters.

Definition of Major Courses—A major course is designed to give intensive and extensive training in an instrument and includes an individual lesson of one hour weekly, or the equivalent in smaller groups. Participation in the regular Senior ensemble organizations, with or without credit, and a minimum of one and one-half hours daily practice are required. The following instruments are suitable for major concentration:

MAJOR INSTRUMENTS

Piano	Saxophone	Trombone—Baritone
Flute	Cornet—Trumpet	Tuba—Bass
Clarinet	French Horn	Percussion

NOTE: All examinations in major instruments are by jury composed of faculty.

Definition of Minor Courses—A minor instrument course is designed to give those students whose major instrument is in another family, a practical approach to an additional instrument, preferably in a different instrumental family. These courses give less credit than major courses and do not attempt to follow the same sequence or intensity of study as required by the major courses. Instruction in minor courses include an individual lesson of one-half hour each week or the equivalent in small groups. One hour of daily practice is required. The following courses and instruments are suitable for minor concentration.

MINOR INSTRUMENTS

Piano	Bass Viol	Saxophone
Organ	Harp	Cornet—Trumpet
Violin	Flute	French Horn
Viola	Oboe	Trombone—Baritone
Cello	Bassoon	Tuba—Bass
	Clarinet	Percussion

227-1abc, 2abc. Piano Classes. Credit 1(0–2).

These courses designed for band majors and minors. Simple compositions, scales and arpeggios studied.

228-1abc, 2abc, 3abc. Major Instruments. Credit 2(0–5).

Each music major will select a major instrument. Proficiency on major instruments will be determined by lessons and by regular appearance of student recitals.

229abc. Minor Instruments. Credit 1½(0–3).

Each music major will select a minor instrument.

ENSEMBLES

210abc. Beginners' Band. Credit 1(0–5).

Primarily for any student who desires to learn to play an instrument or for minors in Band Music who desire to change instruments after entering college.

220abc. Intermediate Band. Credit 1(0–5).

Primarily for those students who have passed Music 210abc, or have had less than three years of instrumental experience.

240-1abc. Senior Band. Credit 1(0–5) each quarter.

For students planning to major or minor in band music and is open to qualified freshmen who have had at least two years of previous training in a band instrument. This is the College Concert and Marching Band.

240-2abc. Senior Band. Credit 1(0–5) each quarter.

For qualified sophomores.

240-3abc. Senior Band. Credit 1(0–5) each quarter.

For qualified juniors.

240-4abc. Senior Band. Credit 1(0–5) each quarter.

For qualified seniors.

Music 241-1abc, 2abc, 3abc, 4abc. Women's Band. Credit 1(0–5).

Primarily for women students who have had previous experience and training on a band instrument.

248-1abc, 2abc, 3abc, 4abc. Choir. Credit 1(0–4) each quarter.

Representative sacred and secular choral masterpieces from the sixteenth century to the present day.

249 1abc, 2abc, 3abc, 4abc. Men's Glee Club. Credit ½(0–4) each quarter.

The best in choral literature for male voices studied and presented.

PHILOSOPHY AND RELIGION

CLEO M. MCCOY, *Chairman*

(Philosophy)

Philosophy 211. Introduction to Philosophy. Credit 3(3–0).

An introductory course covering such topics as theories of reality, the nature of mind and knowledge, and the higher values of life.

Philosophy 212. Ethics. Credit 3(3–0).

A course dealing with the study of moral origins and the interpretation of standards of value in private, business and public life.

Philosophy 213. Philosophy of Religion. Credit 3(3–0).

An introduction to the study of man's quest for wisdom about religious matters.

Philosophy 222. Logic. Credit 3(3–0).

An introductory study of rules of correct thinking and of their application to practical affairs.

Philosophy 223. Survey of Western Thought. Credit 3(3–0).

An introductory examination of systems of philosophic thought of selected outstanding representatives of the classical, medieval, and modern periods of philosophy. Prerequisite: One course in Philosophy or consent of the instructor.

(Religion)

Religion 211. Introduction to Bible Study. Credit 3(3–0).

An introductory course in the history, literature and principal ideas of the Bible.

Religion 212. Orientation in the Study of Religion. Credit 3(3–0).

An examination of the nature, function, value, and basic concepts of religion.

Religion 213. The Church in Contemporary Society. Credit 3(3–0).

A brief survey of the development of the Christian church with emphasis upon the role of organized religion in contemporary affairs.

DEPARTMENT OF PHYSICAL EDUCATION

WILLIAM BELL, *Chairman*

The physical education program aims to promote the health, physical and mental efficiency of each student enrolled in the college and to provide carry-over interests and activities for all.

The general courses in physical education are required of all freshmen and sophomore men and women. Any student who, in the opinion of the College medical staff, is unfit to participate in the required activity program may elect a restricted course or any part of a course which will not aggravate the present disability.

SERVICE COURSES IN HEALTH AND PHYSICAL EDUCATION

A wide variety of athletic sports and games is provided to meet the needs and interests of the student and to acquaint him with many activities in the field of physical education. Two class periods each week are required of all freshman and sophomore students. Juniors and Seniors are permitted to elect activity classes.

Students must be prepared, upon matriculation, to place their orders for the activity uniforms, the approximate cost for which is $12.00 for men and $10.00 for women.

COURSES FOR WOMEN

Freshman

210a. Soccer and Speedball. Fall. Credit 1(0–2).

210b. Basketball. Winter. Credit 1(0–2).

210c. Softball and Volleyball. Spring. Credit 1(0–2).

219. Aquatics. (Required of Freshmen). Credit 1(0–2).

Elementary skills outlined in the American Red Cross standards for beginning swimmers. Fall, winter, spring.

215a,b,c. Individual Physical Education Activities. Credit 1(0–2) each quarter.

(Fall, Winter, Spring.) Special activities designed for those women whose examinations show that they are unable to participate in regular physical education classes.

Sophomore

220a. Hockey. Fall. Credit 1(0–2).

220b. Stunts and Tumbling. Winter. Credit 1(0–2).

220c. Badminton and Archery. Spring. Credit 1(0–2).

221a,b,c. A continuation of the course 215a, b, and c. (Fall, Winter, Spring). Credit 1(0–2) each quarter.

COURSES FOR MEN

Freshman

210a. Speedball and Soccer. Fall. Credit 1(0–2).

210b. Beginning Basketball and Stunts and Tumbling. Winter. Credit 1(0–2).

210c. Volleyball, Track and Field. Spring. Credit 1(0–2).

215a,b,c. Individual Physical Education Activities. (Fall, Winter, Spring). Credit 1(0–2).

Special activities designed for those men whose examinations show that they are unable to participate in the regular physical education classes.

219. **Aquatics.** (Required of Freshmen). (Fall, Winter, Spring.) Credit 1(0–2).

The elementary skills outlined in the American Red Cross standards for beginning swimmers. (Fall, Winter, Spring.)

Sophomore

220a. **Touch Football.** Fall. Credit 1(0–2).

220b. **Advanced Basketball and Advanced Tumbling.** Winter. Credit 1(0–2).

220c. **Softball and Badminton.** Spring. Credit 1(0–2).

221a,b,c. A continuation of the course 215a,b,c. (Fall, Winter, Spring). Credit 1(0–2).

Electives

210N. **Body Mechanics** (for Nurses). Credit 1(0–4).

211. **Tap Dancing.** Credit 1(0–2).

212. **Folk Dancing.** Credit 1(0–2).

213. **Tennis and Archery.** Credit 1(0–2).

214. **Golf.** Credit 1(0–2).

216. **Boxing.** Credit 1(0–2).

217. **The Modern Dance.** (For Beginners.) Credit 1(0–2).

230. **Principles, Practices, and Procedures in Physical Education.** (Formerly 227.) Credit 3(2–2).

The underlying principles, methods and procedures of physical education for elementary school teachers, including practice in the utilization of materials and techniques for teaching graded games, stunts, rhythms, and similar activities on the elementary level.

HEALTH EDUCATION COURSES

211. **Personal Hygiene.** (Formerly P. E. 213). Required of Freshman. Credit 1(1–0).

Consideration is given to personal and mental hygiene to establish a basis for positive health and efficiency through the development of desirable health habits, knowledge and attitudes. Credit 1(1–0).

212. First Aid. (Formerly P. E. 208). Men and Women. Credit 1(0–2).

For students other than those majoring in physical education. First Aid to the injured in the home, school and community. A consideration of First Aid practices with laboratory experience as well as lecture and discussion opportunities. Successful completion of this course leads to the Red Cross Standard certificate in First Aid.

230. Principles, Practices and Procedures in Health Education. (Formerly Physical Education 228). Credit 3(2–2).

The basic principles, methods and procedures for developing a health education program in the elementary school. Theory and practice in the organization and presentation of school health education with special emphasis upon instructional materials and techniques for the elementary school teacher.

234. Personal and Community Health. (Formerly P. E. 234). Credit 5(5–0).

This course aims to establish within the individual a basis for positive health and effective living through a consideration of those factors which effect his personal and health efficiency. Consideration is also given to the field of public health as it affects the community, with special emphasis being placed on ways in which the individual and community agencies may improve and maintain group health.

REQUIREMENTS FOR MINOR IN PHYSICAL EDUCATION

The Physical Education minor requires a minimum of 35 quarter hours. This would include 8 hours of activity courses, 8 hours of applied technique courses, 8 hours of health education, 3 hours of P.E. 230 or 243, and 8 hours from the area of organization and administration, history, problems, or community recreation. Required freshman courses may not be included in the 35 hours.

Suggested Sequence for Minor in Physical Education

Phy. Ed. 222 (Women)	1 hour
Phy. Ed. 223	2 hours
Phy. Ed. 224	1 hour
Phy. Ed. 225	1 hour
Phy. Ed. 226	1 hour
Phy. Ed. 227	1 hour
Phy. Ed. 228	1 hour
Phy. Ed. 229 (Men)	1 hour

(Eight hours must be selected from above group.)

Phy. Ed. 231	2 hours
Phy. Ed. 232	2 hours
Phy. Ed. 233	2 hours
Phy. Ed. 234	2 hours
Phy. Ed. 235	2 hours
Phy. Ed. 236	2 hours
Phy. Ed. 237	2 hours
Phy. Ed. 238	2 hours

(Eight hours must be selected from above group.)

Health Ed. 234	5 hours
Health Ed. 244 or 230	3 hours
Phy. Ed. 230 or 243	3 hours

(Above group Required)

Phy. Ed. 239	5 hours
Phy. Ed. 242	3 hours
Phy. Ed. 248	3 hours
Phy. Ed. 249	5 hours

(Eight hours must be selected from above group.)

Total hours required ..... 35 hours

MAJOR CURRICULUM IN PHYSICAL EDUCATION

The professional curriculum in physical education is designed to prepare students to become teachers of health and physical education, and athletic coaches. The physical education teacher is generally expected to teach other courses. It is, therefore, recommended that the student, upon counsel of his adviser, pursue courses leading to a second major or double minor.

MAJOR IN PHYSICAL EDUCATION

Freshman Year

Course and No.	*Fall*	*Winter*	*Spring*
Eng. 211, 212, 213	5(5–0)	5(5–0)	5(5–0)
Math. 311, 312	5(5–0)	5(5–0)	.....
Hist. 210	.....	.....	5(5–0)
Phy. Ed. 210a, 210b, 210c	1(0–2)	1(0–2)	1(0–2)
Health Ed. 213	1(1–0)	.....	.....
Educ. 211	.....	1(1–0)	.....
Art Appreciation 314, 315	2(2–0)	2(2–0)	.....
Music 211, 212	2(2–0)	2(2–0)	.....

Art 316 or Music 213	.....	.....	2(2–0)
Vocations	3(0–6)	.....	3(0–6)
Phy. Ed. 219	.....	.....	1(0–2)
R.O.T.C. 211, 212, 213 (Men)	2(2–2)	2(2–2)	2(2–2)
	21	18	19

Sophomore Year

Course and No.	*Fall*	*Winter*	*Spring*
Chemistry 111, 112	5(3–4)	5(3–4)	.....
English 220, 221 or 223	.....	.....	5(5–0)
Zoology 111	5(3–4)	.....	.....
Botany 111 or Zool. 112	.....	5(3–4)	.....
History 221 or 222, and 213	5(5–0)	.....	5(5–0)
Phy. Ed. 223, 225, 227	2(1–4)	1(0–5)	1(0–5)
Phy. Ed. 224, 226	1(0–5)	1(0–5)	.....
Phy. Ed. 222 (Women)	1(0–5)	.....	.....
Phy. Ed. 229 (Men)	.....	.....	1(0–5)
Psychology 200	.....	.....	5(5–0)
R.O.T.C. 221, 222, 223 (Men)	2(2–2)	2(2–2)	2(2–2)
Health Educ. 234	.....	5(5–0)	.....
	19	17	17

Junior Year

Course and No.	*Fall*	*Winter*	*Spring*
Edu. 222, 224, 236	3(3–0)	3(3–0)	3(3–0)
Edu. 237, Psychology 202, 203	3(3–0)	3(3–0)	3(3–0)
Zool. 131 (Anatomy), 141 (Physiology)	.....	5(3–4)	5(5–0)
Phy. Ed. 228	1(0–5)	.....	.....
Phy. Ed. 231, 232, 234	2(1–2)	2(1–2)	2(1–2)
Phy. Ed. 233, 235	.....	2(1–2)	2(1–2)
Health Ed. 236	.....	3(3–0)	.....
Home Ec. 132	3(2–2)	.....	.....
Phy. Ed. 239, 243	5(5–0)	.....	3(2–2)
	19	18	18

Senior Year

Course and No.	*Fall*	*Winter*	*Spring*
Phy. Ed. 236	2(1–2)	.....	.....
Phy. Ed. 237 (Women)	2(1–2)	.....	.....
Phy. Ed. 238	2(1–2)	.....	.....
Phy. Ed. 241, 244, 248	3(3–0)	3(3–0)	3(3–0)
Phy. Ed. 242, 249	3(3–0)	5(5–0)	.....

Health Ed. 238	.....	3(3–0)	.....
Health Ed. 244	.....	3(3–0)	.....
Research 246	.....	3(3–0)	.....
Sociology 231	.....	.....	5(5–0)
Education 251	.....	.....	5(1–8)
	12	17	13

COURSES FOR MAJOR AND MINOR STUDENTS

The activity courses listed below are designed for major and minor students in physical education. Instruction is given in methods of teaching activities in elementary and secondary schools and the correlation of health and physical education activities with other school subjects.

222. The Modern Dance. (Formerly 217.) Credit 1(0–5).

A concentrated course in the Modern Dance which is required of all women physical education major and minor students.

223. Group Games and Football or Hockey. (Men and Women.) Formerly 226. Credit 2(1–4).

Practice and applied techniques of a large variety of games of lower organization of the circle, group and line type which might be suitable for playground, gymnasium, camp, and for adult gatherings. A concentrated study is also made of the techniques of football for men and hockey for women. Two different sections.

224. Field Laboratory Experiences. (Formerly 254.) Credit 1(0–5).

(Open to students wishing to major in Physical Education.)

Opportunities for students to render service to children of various ages through the many community and school resources. Experience is gained through a study of the growth, development, and learning processes of the child through supervised activities. Prerequisite: Sophomore standing.

225. Rhythmics. (Men and Women.) Formerly 214. Credit 1(0–5).

Clog, tap, and folk dances characteristic of many countries, including Sweden, Hungary, Austria, Spain, France, Holland, and the United States.

226. Basketball, Stunts and Tumbling. (Men and Women.) Formerly 218. Credit 1(0–5).

Rules and Techniques of Basketball; concerted practice in skills and stunts and tumbling. Men's and Women's sections.

227. Swimming, Track and Field. (Men and Women.) Formerly 219a. Credit 1(0–5).

Basic Aquatic skills including the crawl, sidestroke, treading, floating,

and diving. The skills and techniques of track and field. Men's and Women's sections. Prerequisite: 219.

228. Individual Sports. (Men and Women.) Formerly 213is. Credit 1(0–5).

Shuffleboard, handball, table tennis, badminton, croquet, archery, golf, and tennis.

229. Combatives and Baseball. (Men.) Credit 1(0–5).

A wide range of dual, group, and team combatives, running exercises, class formations, and concentrated practices in mastering the skills and techniques of the sport of baseball.

231. The Teaching of Football or Soccer and Hockey. (Men and Women.) Formerly 225, 225sh. Credit 2(1–2).

The history, rules, skills, techniques, methods of organizing practices, strategy, team offenses and defenses, and of various formations and systems of play. Two sections: Football for men, hockey and soccer for women.

232. The Teaching of Basketball. (Men and Women.) Formerly 225b. Credit 2(1–2).

The history and development of basketball, the skills, individual and team tactics, strategy, and the techniques of teaching basketball. The women's section provides in addition, instruction and practice in officiating basketball. Two different sections.

233. The Teaching of Swimming, and Lifesaving. (Formerly 225W.) Credit 2(1–2).

Skills required for the American Red Cross standard Lifesaving certificate; instruction in desirable methods and techniques for the teaching of swimming and aquatic events. Prerequisites: 219, 227, or equivalent.

234. The Teaching of Track and Baseball or Volleyball and Softball. (Men and Women.) Credit 2(1–2).

The history and development of each sport, the skills, individual and team offenses and defenses, strategy, and the techniques of teaching. Two sections: Track and baseball for men, volleyball and softball for women.

235. The Teaching of Stunts and Tumbling. (Men and Women.) Credit 2(1–2).

Methods and techniques for teaching a variety of stunts, tumbling, and apparatus activities. Two different sections.

236. The Teaching of Individual Sports. (Men and Women.) Formerly 225c. Credit 2(1–2).

Methods and techniques for teaching individual sports including shuffleboard, handball, golf, table tennis, badminton, archery, and tennis.

237. The Teaching of Social, Tap, and Square Dancing. (Required of Women.) Formerly 225e. Credit 2(1–2).

Methods of teaching social, tap, and square dancing.

238. The Teaching of Net Games. (Formerly 225n.) Credit 2(1–2).

Methods of teaching a variety of net games, including volleyball, Newcomb, badminton, tennis, handball, and deck tennis.

239. History and Principles of Physical Education. (Formerly 245.) Credit 5(5–0).

The evolution of physical education from the earliest time to the present day. Consideration of the relationship of physical education to education and to national life and ideals through the different historical periods. A critical analysis of the scientific basis for physical education with applications of the aims and objectives to the modern concepts of education.

241. Kinesiology. (Formerly 222.) Credit 3(3–0).

A study of the bodily movements, types of muscular exercises and their relation to the problems of body development. Prerequisites: Zool. 131, 141.

242. Community Recreation. (Formerly 232.) Credit 3(3–0).

A study of city, state, and national organizations. Practice in the general principles and techniques in the organization and promotion of leisure activities for home, school, and community.

243. The Teaching of Physical Education. (Men and Women.) Credit 3(2–2).

Materials, methods, and practice in planning, organizing, and conducting physical education class activities. Prerequisites: 239 and an adequate number of other physical education courses.

244. Individual Physical Education. (Formerly 223.) Credit 3(3–0).

Methods of examining and determining needs of the handicapped; activities suitable for individuals with abnormal body conditions, and the conduct of a program of restricted activities to meet their needs. Prerequisites: Zool. 131, P.E. 241.

246. The Nature and Function of Play. (Men and Women.) Formerly 232a. Credit 2(2–0).

The history and theories of play and of play as a function of enriched living.

248. Problems in Physical Education. (Men and Women.) Formerly 253. Credit 3(3–0).

Special administrative problems in the organization of physical education programs and the coordination of its different phases pertinent

to men and women of professional preparation. Current problems of physical education, including curriculum construction in the light of historical backgrounds, intramural activities, girls' athletics, athletic insurance, and athletic associations.

249. The Organization and Administration of Health and Physical Education. Credit 5(5–0).

Philosophy and policies in the administration of a health and physical education program, including the classification of students, the staff, teaching load, time schedule, finance, the gymnasium, locker-rooms, equipment, and inter-scholastic athletics. Prerequisites: 239 and an adequate number of other physical education courses.

HEALTH EDUCATION COURSES

Health Education 236. Principles of Health Education. Credit 3(3–0).

Principles for the teaching of health education in elementary and high schools. A close correlation with physical education and other subjects is outlined and encouraged. Prerequisite: H.E. 213, 234.

Health Education 238. First Aid and Safety. (Formerly P. E. 238). Credit 3(2–2).

Techniques of first aid to the injured in the home, school, and community and the teaching of safety measures to be practiced in daily living; the prevention and care of injuries occurring in physical education classes and competitive sports. The Standard Red Cross First Aid Certificate is awarded upon successful completion of the course.

Health Education 244. The Teaching of Health Education. (Formerly P. E. 244.) Credit 3(3–0).

Methods, materials, and procedures for the teaching of health in the elementary and secondary schools. Prerequisites: H.E. 234, 239.

Health Education 245. Problems in Health Education. (Formerly P. E. 255.) Credit 3(3–0).

A course to give the student opportunity to analyze current problems in health education as they relate to the individual student, the total school program, resources in the community, public relations, and health of the teacher. Prerequisites: H.E. 213, 234, 236.

DEPARTMENT OF PHYSICS

DONALD A. EDWARDS, *Chairman*

The purposes of the courses offered by the Department of Physics are:

1. To train students desiring to meet the urgent need for physicists

in industrial or civil service research laboratories, and to provide them with courses required for graduate study.

2. To train teachers of physics for the secondary schools.
3. To provide the fundamental and advanced courses required by majors in other areas.
4. To provide non-science students with experiences which will give a greater appreciation of the present and future importance of physics in an age of machines and atomic energy.

The major in Engineering Physics will supplement the minimum of courses outlined below by selecting electives from other courses in the School of Engineering, as directed by the Department of Physics. Students desiring to teach physics will seek a major in Physics, and they should consult with this department before registration for the Freshman year; they should begin the study of physics with Physics 321 in the Sophomore Year.

For both majors one year of French is required.

The non-science major should elect Physics 311, 312.

OUTLINE OF COURSES FOR MAJORS IN PHYSICS AND MAJORS IN ENGINEERING PHYSICS

(Freshmen will follow outline of School of Engineering on page 70.)

Sophomore Year

Course and No.	*Fall*	*Winter*	*Spring*
Mathematics 321, 322, 323	5(5–0)	5(5–0)	5(5–0)
Physics 321, 322, 323	5(3–4)	5(3–4)	5(3–4)
French	5(5–0)	5(5–0)	5(5–0)
Military or Air Science	2	2	2
Electives	2	2	2
	19	19	19

Junior Year

Course and No.	*Fall*	*Winter*	*Spring*
Mathematics 331	.....	.....	5(5–0)
Physics 325, 326	2(2–0)	2(2–0)	.....
Physics 331, 328, 338	5(5–0)	5(3–4)	5(5–0)
Physics 334, 339	3(1–4)	.....	2(0–4)
Mathematics 501	.....	.....	5(5–0)
Electives	8	11	.....
	18	18	17

Senior Year

Course and No.	*Fall*	*Winter*	*Spring*
Physics 332, 340, 504	3(3–0)	5(5–0)	5(5–0)
Social Science or Education	5	5	5
Electives	10	8	8
	18	18	18

COURSES IN PHYSICS

311, 312. Principles of Physics I, II. Credit 5(4–2) ea.

A two-quarter terminal course, including mechanics, properties of matter, heat, electricity and magnetism, wave motion, sound, light, and selected topics in Modern Physics. Prerequisite: Math. 311, or concurrent election.

321, 322, 323. General Physics I, II, III. Credit 5(3–4) ea.

A study of the fundamental principles of mechanics, properties of matter, heat and thermometry, magnetism, direct and alternating current electricity, wave motion, sound, light, and atomic physics. For science and technical majors. Prerequisite: Math. 313.

325, 326. Physical Mechanics I, II. Credit 2(2–0) ea.

Includes such topics as rectilinear and curvilinear motion of a particle and of systems of particles, energy relations in a force field, mechanics of a rigid body, oscillations, wave motion, and mechanics of a fluid. Methods of vector analysis are used where applicable. Prerequisites: Physics 322, Math. 323.

328. Heat and Temperature Measurement. Credit 5(3–4).

A study of methods of heat transfer, thermocouples, resistance thermometry, calorimetry, and specific heats, with appropriate experiments. Prerequisites: Physics 323, Math. 323.

331. Electricity and Magnetism. Credit 5(5–0).

An intermediate course including electric fields and potential, D.C. circuits, chemical and thermal emf's dielectrics, meters, magnetic properties of matter, alternating current, electromagnetic waves, and electronics. Prerequisites: Physics 322, Math. 323.

332, 333. Thermodynamics I, II. Credit 3(3–0) ea.

A study of the first and second laws of thermodynamics, the Carnot cycle and heat engines, the third law of thermodynamics, and the thermodynamic properties of gases, liquids and solids. Prerequisites: Physics 323 and Math. 323.

334. Electrical Measurements. Credit 3(1–4).

Same as E. E. 334. Prerequisite: Physics 331, or concurrent election.

335. Electrical Measurements. Credit 3(1–4).

Same as E. E. 335. Prerequisite: Physics 334.

337. Vibration and Sound. Credit 5(5–0).

Production, propagation, transmission and reception of sound. Applications to acoustics, mechanics, and electrical problems. Prerequisites: Physics 323, Math. 331.

338. Light. Credit 5(5–0).

Propagation, reflection, refraction of light, lenses and optical instruments, interference, diffraction, polarization, line spectra, thermal radiation, photometry, and color. Prerequisites: Physics 323, Math. 323.

339. Experimental Light. Credit 2(0–4).

Prerequisite: Physics 338, or concurrent election.

340. Introduction to Modern Physics. Credit 5(5–0).

An advanced course involving electromagnetic theory of radiation, kinetic theory of gases, specific heats, the electron, electronics, X-rays, spectra, radioactivity, nuclear physics, and cosmic rays. Prerequisite: Physics 331, Math. 331 (or concurrent election).

342. Experimental Electron and Nuclear Physics. Credit 2(0–4).

Measurement of charge on electron, e/m, ionization potential, spontaneous nuclear disintegrations and decay curves, Geiger counters. Prerequisite: Physics 340, or concurrent election.

343. Experimental Electronics. Credit 2(0–4).

An experimental study of photoelectric cells, vacuum and gaseous tubes, amplifiers, photometers, and other scientific electronic devices. Prerequisite: Consent of the instructor.

GRADUATES AND ADVANCED UNDERGRADUATES

501. Theoretical Physics I. Credit 5(5–0).

Includes topics in vector analysis, dynamics of particles, dynamics of rigid bodies, advanced dynamics, and hydrodynamics. Prerequisites: Physics 326, Math. 331.

502. Theoretical Physics II. Credit 5(5–0).

Topics in kinetic theory, electromagnetism, optics, and spectroscopy. Prerequisites: Physics 501.

503. Electromagnetism. Credit 5(5–0).

Includes field theory of electromagnetism, electrostatics, solution of LaPlace's equation, dielectrics, magnetic fields of currents, magnetic materials. Maxwell's equations, electromagnetic waves and energy flow. Prerequisite: Physics 331, Math. 331.

504. Particles of Modern Physics. Credit 5(5–0).

An advanced study of cathode rays, positive rays, photons, X-rays, positrons, neutrons, and cosmic rays. Prerequisite: Physics 340.

DEPARTMENT OF PLANT INDUSTRY

CORNELIUS C. LEWIS, *Chairman*

The Department of Plant Industry offers courses in agricultural engineering, field crops, forestry, fruits and vegetable production, geology, and soils.

Curricula leading to the degree of Bachelor of Science are offered in (1) Agricultural Engineering, (2) Agronomy, (3) Horticulture, and (4) Ornamental Horticulture.

These curricula are designed to provide scientific and technical experiences needed in such areas as general farming, extension work, teaching in agricultural high schools and colleges, specialized areas of crop production, business enterprises, and graduate work.

Students who wish to elect majors under Plant Industry should follow the Basic Curriculum in Agriculture for the freshman and sophomore years. Two-year terminal curricula are offered in General Agriculture, Floriculture, Landscape Gardening, and Farm Mechanics.

TWO-YEAR FARM MECHANICS CURRICULUM

The two-year curriculum in farm mechanics is designed to prepare students for the following positions:

1. Farm shop operators
2. Farm repair services
   a. Welding
   b. Electric wiring
   c. Plumbing
   d. Machinery and equipment
3. Assistants in sales and service programs
4. Farm equipment operators

First Year

Course and No.	*Fall*	*Winter*	*Spring*
Agricultural Engineering 132, 141, 124	3(1–6)	3(1–6)	3(1–6)
Auto Mechanics 311, 312, 313	3(0–6)	3(0–6)	3(0–6)
Physics 311	.....	.....	5(4–2)
Agricultural Economics 123	.....	4(2–4)	.....

R.O.T.C. 211, 212, 213	2( )	2( )	2( )
Physical Education 208, 213, 219	1(0–2)	1(0–2)	1(0–2)
English 200, 201	3(3–0)	3(3–0)	.....
Math. 309	3(3–0)	.....	.....
General Science 131	4(3–2)	.....	.....
Agronomy 121, 124	.....	3(2–3)	3(2–3)
General Agriculture	1(1–0)	.....	.....
	20	19	17

Second Year

Course and No.	*Fall*	*Winter*	*Spring*
Agricultural Engineering 132, 141, 124	3(0–6)	3(0–6)	3(0–6)
Plumbing 311, 312, 313	3(0–6)	3(0–6)	3(0–6)
Electric Wiring 311, 312, 313	3(0–6)	3(0–6)	3(0–6)
Welding 311	.....	.....	3(0–6)
R.O.T.C. 220a, 220b, 220c	2( )	2( )	2( )
Physical Education 220a, 220b, 220c	1(0–2)	1(0–2)	1(0–2)
Electives	3( )	3( )	3( )
	18	18	21

CURRICULUM IN AGRICULTURAL ENGINEERING*

The four-year curriculum in agricultural engineering is designed to prepare students professionally for the following:

1. Government service—state, federal and foreign
2. Farm machinery salesman
3. Equipment serviceman
4. Rural electrification
5. Soil and water conservationist
6. Irrigation engineers
7. Farm building construction engineers

*Students should follow Basic Curriculum in Freshman and Sophomore years.

Junior Year

Course and No.	*Fall*	*Winter*	*Spring*
Agricultural Engineering 131, 123	3(1–4)	.....	3(1–4)
Physics 312, 313	5(4–2)	5(4–2)	.....
Mathematics 313, 321, 322	5(5–0)	5(5–0)	5(5–0)
Mechanical Engineering 328, 331	2(0–4)	.....	5(5–0)
English 224	.....	3(2–2)	.....
Agricultural Engineering 124	.....	.....	3(0–6)
Electives	3( )	5( )	3( )
	18	18	19

Senior Year

Course and No.	*Fall*	*Winter*	*Spring*
Agricultural Engineering 132, 141, 503	3(1–4)	3(1–4)	5(1–8)
Agricultural Economics 122, 123	3(3–0)	3(3–0)	.....
Soils 140	.....	3(3–0)	.....
Mechanical Engineering 322	5(5–0)	.....	.....
Agricultural Engineering 142, 502, 500 ...	3(0–6)	3(2–2)	5(3–4)
Rural Sociology 131	.....	.....	3(3–0)
Rural Sociology 502	.....	.....	3(3–0)
Electives	3( )	5( )	3( )
	17	17	19

AGRICULTURAL ENGINEERING

111. Agricultural Drawing. Credit 3(0–6).

Lettering, use of instruments, multi-view projection drawing, auxiliary projection, selectional views and dimensioning.

122. Farm Shop. Credit 3(1–4).

Proper use of tools, woodwork, bench and vise work, pipe fitting and concrete work.

123. Field Machinery. Credit 3(1–4).

Principles, operation, adjustment, and maintenance of farm field machinery.

124. Farm Buildings. Credit 3(0–6).

Fundamentals of building construction applied to location, selection of materials, foundations and planning. Prerequisite: Ag. Eng. 111.

131. Surveying and Drainage. Credit 3(1–4).

Principles of surveying and drainage, planning of soil erosion and drainage systems, based on topographical and soil requirements. Prerequisite: Soils 123, Math. 311, 312.

132. Farm Power. Credit 3(1–4).

Principles of mechanical power, use, care and adjustment of internal combustion engines and electric motors. Prerequisite: Phy. 311.

140. Dairy Engineering. Credit 3(2–3).

The general engineering principles of power selection, installation and maintenance, refrigeration and heat transfer as they apply to equipment used in the dairy industry. Also plant arrangement and management.

141. Rural Electrification. Credit 3(1–4).

A study of electricity, electrical wiring, and electrical devices, in-

cluding motors, with particular emphasis upon the relation of these to the home and the farm. Prerequisite: Physics 311, 312.

142. Water Supply and Sanitation for the Farm and Home. Credit 3(2–2).

The planning and installation of farm water and sanitation systems. Prerequisite: Ag. Eng. 122, Bact. 123.

Advanced Undergraduates and Graduates

500. Terracing and Drainage. Credit 5(3–4).

Improvement of soil by use of engineering structures, practice in construction of terraces and drainage systems. Prerequisite: Ag. Eng. 131.

501. Farm Shop Organization and Management. Credit 3(3–0).

A course designed for prospective and in-service teachers of vocational agriculture; includes presentation of purpose, plans, and equipment of shops, organization of course of study, and methods of teaching. Prerequisite: Ag. Eng. 122, Ag. Ed. 143.

502. Advanced Farm Shop. Credit 3(0–6).

Care, operation, and maintenance of farm shop power equipment. Prerequisite: Ag. Eng. 122.

503. Special Problems in Agricultural Engineering. Credit 1–5 hours.

Special work in agricultural engineering on problems of special interest to the student.

TWO-YEAR GENERAL AGRICULTURE CURRICULUM

The two-year curriculum in general agriculture is designed to prepare students for the following positions:

1. General farm operators
2. General farm foreman
3. Skilled helpers

First Year

Course and No.	*Fall*	*Winter*	*Spring*
General Agriculture 111	1(1–0)	.....	.....
Soils 123, 132	4(2–4)	3(3–0)	.....
Crops 111, 121, 124	3(2–3)	3(2–3)	3(2–3)
Agricultural Economics 123	.....	4(4–0)	.....
Animal Husbandry 111	3(2–3)	.....	.....
Poultry Husbandry 111	.....	.....	3(2–3)
Dairy Husbandry 111	.....	3(2–3)	.....
Agricultural Engineering 123	.....	.....	3(1–4)

English 200, 201	3(3–0)	3(3–0)	.....
Math. 309	.....	.....	3(3–0)
R.O.T.C. 211, 212, 213	2( )	2( )	2( )
Physical Education 208, 213, 219	1(0–2)	1(0–2)	1(0–2)
General Science 131, 132	4(2–4)	.....	4(2–4)
	21	19	19

Second Year

Course and No.	*Fall*	*Winter*	*Spring*
General Agriculture 121	9(0–45)	.....	.....
General Agriculture 122	3(1–4)	.....	.....
Soils 134, 140	.....	4(2–6)	3(3–0)
Crops 131, 141	.....	3(2–3)	3(2–3)
Agricultural Economics 147, 141	.....	3(3–0)	3(2–3)
Agricultural Engineering 122, 124	.....	3(1–6)	3(0–9)
Horticulture 133	.....	.....	4(2–6)
Political Science 211	.....	3(3–0)	.....
R.O.T.C. 220b, 220c	.....	2( )	2( )
Physical Education 210b, 210c	.....	1(0–2)	1(0–2)
	12	19	19

CURRICULUM IN AGRONOMY*

The four-year curriculum in agronomy is designed to prepare students professionally for the following:

1. Government service
2. Laboratory assistant
3. Farm managers
4. Graduate study
5. Fertilizer and seed salesman
6. Fertilizer plant assistant

*Students should follow Basic Curriculum in Freshman and Sophomore years.

Junior Year

Course and No.	*Fall*	*Winter*	*Spring*
Agronomy 124, 131	3(2–2)	3(2–2)	.....
Agricultural Engineering 123, 132, 124	3(1–4)	3(1–4)	3(0–6)
Agricultural Economics 122, 123	3(3–0)	.....	3(3–0)
Agronomy 141	3(1–4)	.....	.....
Bacteriology 123	.....	5(3–4)	.....
Soils 132	.....	3(3–0)	.....
Botany 121, 112	3(2–2)	.....	5(3–4)

Zoology 142	.....	.....	3(3–0)
Electives	3( )	3( )	3( )
	18	17	17

Senior Year

Course and No.	*Fall*	*Winter*	*Spring*
Botany 131, 133	.....	4(2–4)	3(2–2)
Bacteriology 145	4(2–4)	.....	.....
Agricultural Engineering 131	.....	.....	3(1–4)
Animal Husbandry 132	.....	5(3–4)	.....
Rural Sociology 131	.....	3(3–0)	.....
Agronomy 501, 502	3(3–0)	.....	3(2–2)
Math. 318	.....	.....	5(5–0)
Political Science 231	5(5–0)	.....	.....
Agronomy 503	.....	3( )	.....
Soils 140	3(3–0)	.....	.....
Zoology 133	.....	.....	3(2–2)
Electives	3( )	3( )	3( )
	18	18	20

Suggested Electives

Soils 134 (Soils and Fertilizers)	4
Agricultural Economics 141 (Farm Records)	3

CURRICULUM IN SOILS

Junior Year

Course and No.	*Fall*	*Winter*	*Spring*
Mathematics 313, 321, 318	5(5–0)	5(5–0)	5(5–0)
Physics 321, 322, 323	5(3–4)	5(3–4)	5(3–4)
Chemistry 121, 122	4(2–6)	4(2–6)	.....
Bacteriology 123	.....	.....	5(3–4)
Electives	3( )	3( )	3( )
	17	17	18

Senior Year

Course and No.	*Fall*	*Winter*	*Spring*
Agronomy 131, 501	3(2–2)	3(3–0)	.....
Chemistry 141, 131	5(3–6)	.....	5(3–4)
Soils 140, 132, 142	3(3–0)	3(3–0)	3(2–2)
Botany 121	3(2–2)	.....	.....

Biochemistry 135	.....	5(2–6)	.....
Soils 134, 504	.....	4(2–4)	2( )
Political Science 231	.....	.....	5(5–0)
Electives	3( )	3( )	3( )
	17	18	18

FORESTRY

131. Introduction to Forestry. Credit 3(2–2).

The importance of forest and forestry to national and local economies; special attention given to conditions in southeastern United States; survey of the various fields of forestry. Field trips devoted to identification of important forest trees of the Southeast.

132. Forest Utilization. Credit 3(2–2).

Theory and use of instruments in determining the volume of logs, trees, and stands; problems in marketing and utilizing the products of the forest; emphasis on marketing products of farm woodlands of the Southeast.

133. Farm Forestry. Credit 3(2–2).

Principles of farm woodland management, including measurement of logs, trees, and stands; planting and harvesting methods; basic silvicultural principles; improvement cuttings. Forestry 131 and 132 recommended.

AGRONOMY

111. General Farm Crops. Credit 3(2–3).

History, classification, distribution, culture and utilization of the important field crops. Identification of crops, crop seeds, and farm weed seeds.

121. Principles of Crop Production. Credit 3(2–3).

Factors affecting crop yields with emphasis on choice of crops and varieties, soil fertility and fertilizers, tillage and harvesting methods, and crop rotation.

123. Soils. Credit 4(2–4).

The general nature and properties of soils with introductory treatment of soils genesis, morphology and classification.

124. Forage Crops. Credit 3(2–3).

Grasses, legumes and other plants and their uses as hay, pasture, silage and special purpose forage; identification of plants and seed and study of quality in hay, silage and pasture population.

131. Hay and Pasture Crops. Credit 3(2–2).

Major problems connected with meadow and pasture establishment and management.

132. Soil Fertility. Credit 3(3–0).

General principles of soil fertility; the physical, chemical and biological factors affecting soil fertility and crop production.

134. Soils and Fertilizers. Credit 4(2–4).

Analytical and theoretical analysis of soils and fertilizers. Application of physics, chemistry and microbiology to the study of soil-plant interrelationships.

140. Soil and Water Conservation. Credit 3(3–0).

Social and economic aspects of soil deterioration and water conservation. Principles of land improvement as applied especially to humid regions.

141. Determining Crop Quality. Credit 3(1–4).

The recognition of high quality crop products as influenced by growth and maturity factors, weeds and diseases; determination of commercial quality through study of use and grades; identification of crops, weeds and diseases found in the U. S.; planning crop exhibits.

142. Soil Genesis and Classification. Credit 3(2–2).

Soil genesis, morphology and classification of the major soil groups of the United States in relation to soil management. Study of soil maps and soil survey reports.

Graduates and Advanced Undergraduates

501. Crop Ecology. Credit 3(3–0).

The physical environment and its influence on crops; geographical distribution of crops.

502. Breeding of Crop Plants. Credit 3(2–2).

Significance of crop improvement in the maintenance of crop yields; application of genetic principles to techniques used in improvement of crops; the place of seed certification in the maintenance of varietal purity and production of quality seed.

503. Special Problems in Agronomy. Credit 2 to 6 hours.

Designed for students who desire to work out special problems in crop production.

504. Special Problems in Soils. Credit 2 to 8 hours.

Research problems for advanced students majoring in agronomy.

GEOLOGY

111. **Physical Geology.** Credit 4(3–2).

Relation of geologic principles in the development of a balanced concept of the earth and earth history; identification of rocks and minerals; weathering, water and mineral resources; sediments, metamorphosis and volcanism; land forms.

TWO-YEAR LANDSCAPE GARDENING CURRICULUM

The two-year curriculum in landscape gardening is designed to prepare students for the following positions:

1. Propagator and grower
2. Landscape gardener
3. Foreman—laborer—estate maintenance

First Year

Course and No.	*Fall*	*Winter*	*Spring*
Horticulture 111, 112, 130	3(2–3)	3(2–3)	3(2–3)
Botany 111, 112	.....	5(3–4)	5(3–4)
Horticulture 136	4(2–6)	.....	.....
Agronomy 123, 131	4(2–6)	.....	3(2–3)
Agricultural Economics 123, 131	.....	4(2–4)	3(2–2)
English	3(3–0)	3(3–0)	.....
Math. 309	3(3–0)	.....	.....
Agricultural Engineering 111	.....	.....	3(1–4)
R.O.T.C.	2( )	2( )	2( )
Physical Education 208, 213, 219	1(0–2)	1(0–2)	1(0–2)
General Agriculture 111	1(1–0)	.....	.....
	21	18	20

Second Year

Course and No.	*Fall*	*Winter*	*Spring*
General Agriculture 121	9(0–45)	.....	.....
General Agriculture 122	3(1–4)	.....	.....
Horticulture 140, 141	.....	4(2–6)	3(2–3)
Horticulture 130, 145	.....	3(2–3)	4(2–6)
Horticulture 135	.....	4(2–6)	.....
Horticulture 144	.....	.....	4(2–6)
Soils 134	.....	4(2–6)	.....
Agricultural Engineering 122	.....	4(2–6)	.....
Agricultural Engineering 123	.....	.....	3(2–3)
Political Science 211	.....	3(3–0)	.....
R.O.T.C. 220b, 220c	.....	2( )	2( )
Physical Education 210b, 210c	.....	1(0–2)	1(0–2)
	12	21	20

TWO-YEAR FLORICULTURE CURRICULUM

The two-year curriculum in floriculture is designed to prepare students for the following positions:

1. Greenhouse operators
   a. Owners
   b. Foreman
   c. Helpers
2. Floral designer
3. Helpers in wholesale and retail flower shops
4. Salesman

First Year

Course and No.	*Fall*	*Winter*	*Spring*
Horticulture 111, 131, 112	3(2–3)	4(2–6)	3(2–3)
Horticulture 130	.....	3(2–3)	.....
General Agriculture 111	1(1–0)	.....	.....
Botany 111, 121	5(3–4)	.....	3(2–2)
Agronomy 123	.....	.....	4(2–4)
Agricultural Engineering 111, 122	.....	3(1–6)	3(1–6)
Agricultural Economics 123, 131	.....	4(2–4)	3(2–2)
English	3(3–0)	3(3–0)	.....
Math. 309	3(3–0)	.....	.....
R.O.T.C. 211, 212, 213	2( )	2( )	2( )
Physical Education 208, 215, 219	1(0–2)	1(0–2)	1(0–2)
	18	20	19

Second Year

Course and No.	*Fall*	*Winter*	*Spring*
General Agriculture 121	9(0–45)	.....	.....
General Agriculture 122	3(1–4)	.....	.....
Horticulture 123, 132	.....	4(2–6)	4(2–4)
Horticulture 142, 133	.....	4(2–6)	3(2–3)
Botany 133	.....	3(2–2)	.....
Agronomy 132	.....	3(3–0)	.....
Political Science 211	.....	3(3–0)	.....
R.O.T.C. 220b, 220c	.....	2( )	2( )
Physical Education 210b, 210c	.....	1(0–2)	1(0–2)
Horticulture 141	.....	.....	3(1–6)
Horticulture 145	.....	.....	4(2–6)
	12	20	17

HORTICULTURE CURRICULUM*

The four-year curriculum in horticulture is designed to prepare students professionally for the following:

1. Commercial grower
2. Retail florist
3. Landscape designer
4. Landscaper
5. Government service
6. Estate manager

Junior Year

Course and No.	*Fall*	*Winter*	*Spring*
Soils 132	.....	3(3–0)	.....
Horticulture 133, 135, 134	4(2–4)	4(2–4)	3(2–3)
Horticulture 131, 142	3(1–4)	.....	3(1–4)
Chemistry 131, 121	5(3–4)	4(2–6)	.....
Botany 121, 112	3(2–2)	.....	5(3–4)
English 224	.....	3(2–2)	.....
Zoology 142, 133	.....	3(3–0)	4(2–4)
Electives	4( )	3( )	4( )
	19	20	19

*Students should follow Basic Curriculum in Freshman and Sophomore years.

Senior Year

Course and No.	*Fall*	*Winter*	*Spring*
Horticulture 136, 141, 132	4(2–4)	3(1–4)	4(2–4)
Horticulture 501, 144	2 to 5	4(2–4)	.....
Botany 133	3(2–2)	.....	.....
Agricultural Economics 122, 131	4(2–2)	3(3–0)	.....
Chemistry 122	.....	4(2–6)	.....
B. A. 335	.....	.....	5(5–0)
Soils 134	.....	.....	4(2–4)
Electives	4( )	4( )	6( )
	20	18	19

HORTICULTURE

111. General Horticulture. Credit 3(2–3).

Designed to acquaint students with the various divisions in horticulture such as floriculture, ornamental horticulture, landscaping, olericulture and pomology.

112. Amateur Floriculture. Credit 3(2–3).

General principles of growing flowers on a small scale in the greenhouse and outside; the potting of plants and planning the small border flower bed.

122. Fruit Production. Credit 3(2–3).

Planting, propagating and caring for orchards as they are applied to North Carolina conditions.

123. Greenhouse Construction and Management. Credit 4(2–4).

Types of greenhouses and their structural detail with regard to watering, heating, ventilation and lighting; environmental control for various types of plants.

130. Plant Propagation. Credit 3(2–3).

The propagation of plants by seed, cuttings, budding and grafting. Prerequisite: Botany 111.

131. Commercial Flower Production. Credit 4(2–4).

Culture and marketing of cut flowers.

132. Commercial Flower Production. Credit 4(2–4).

Culture and marketing of pot and conservatory plants.

133. Vegetable Production. Credit 4(2–4).

Commercial vegetable production with special emphasis on large scale production, harvesting and marketing of vegetables.

134. Small Fruits. Credit 3(2–3).

The culture of strawberries, grapes, raspberries, blackberries, and other small fruit. Field trips, mostly within the state.

135. Principles of Landscape Planning. Credit 4(2–4).

An introduction to the fundamentals of landscape design with particular emphasis upon planning of small home properties. Prerequisite: Agricultural Engineering 111.

136. Plant Materials. Credit 4(2–4).

The merits, adaptability, and identification of ornamental trees and shrubs used in landscape planting.

140. Arboriculture. Credit 4(2–4).

Principles of landscape maintenance with reference to tree surgery and pruning; preventive measures for control of insects and diseases of trees; moving and planting of large shrubs and trees.

141. Plant Propagation and Nursery Practice. Credit 3(1–4).

Methods used in the commercial propagation of fruits and ornamental shrubs with emphasis on grafting, budding and cutting; nursery culture methods and practices.

142. Flower Shop Management. Credit 3(1–4).

Floral designing and flower shop operation.

144. Landscape Planning and Planting of Small Properties. Credit 4(2–4).

Emphasis placed on designing, landscaping home and school grounds.

145. Landscape Designing. Credit 3(0–6).

Practice in model landscape construction.

Advanced Undergraduates and Graduates

501. Special Problems in Horticulture. Credit 2 to 5 hours.

Work along special lines given largely by the project method for advanced undergraduate students who have the necessary preparation.

RESEARCH

246. Senior Research. Credit 3(3–).

An introduction to the meaning of educational research involving the use of scientific method in collecting, organizing, interpreting, and reporting data. Open only to seniors in the School of Education and Science. Each student will complete a paper utilizing the scientific approach, or will contribute to the completion of a project requiring the work of not more than two persons.

DIVISION OF AIR SCIENCE AND MILITARY SCIENCE AND TACTICS

OBJECTIVES

The Division of Military and Air Science, headed by the Coordinator of Military Training and the ROTC, is charged with the administration of college regulations pertaining to military training. This Division is also the coordinating agency for the Army and Air Force Reserve Officers' Training Corps established at the College.

The Reserve Officers' Training Corps (ROTC) at A. and T. College designates those students enrolled for training in the Department of Military Science and Tactics or in the Department of Air Science. These Departments are integral academic and administrative subdivisions of the institution. The senior Army officer and the senior Air Force officer assigned to the College are designated as Professor of Military Science and Tactics (PMST) and Professor of Air Science (PAS), respectively. These senior officers are responsible to the Secre-

tary of the Army, the Secretary of the Air Force, and the Coordinator of Military Training for conducting the training and academic program in accordance with instructions issued by the respective secretaries. Army officers who are assigned to the College as instructors in ROTC are designated as Assistant Professors of Military Science and Tactics; Air Force officers, as Assistant Professors of Air Science. Non-commissioned officers of the Army are assigned as assistant instructors and administrative personnel. Non-commissioned officers of the Air Force are assigned as administrative and supply personnel.

The Army ROTC, in four years of military training, produces junior officers who have the qualities and attributes essential to their progressive and continued development as officers of the United States Army.

The mission of the Air Force ROTC, as defined by the Department of the Air Force, is to select and prepare students, through a permanent program of instruction at civilian educational institutions, to serve as officers in the regular and reserve components of the United States Air Force and to assist in discharging, where necessary, any institutional obligations to offer instruction in military training.

COURSES OF INSTRUCTION

Programs of instruction for both Army and Air Force ROTC consist of a two-year basic course and a two-year advanced course. The basic course in either the Army or Air Force ROTC is required for all physically fit male freshmen and sophomores unless they are excused by the college administration. Enrollment in avanced courses is elective on the part of the student. The selection of advanced course students is made from applicants who are physically qualified and who have above average academic and military records. Veterans who are less than 27 years of age, and who have one year or more of service in the Armed Forces are eligible for enrollment in advanced courses of Army or Air Force upon reaching their junior year, provided they are in good academic standing.

All veterans in service as long as six months are excused from the first year basic ROTC. All veterans in service as long as twelve months are excused from the first and second year basic ROTC. Freshmen and sophomores other than veterans must enroll in the basic course of Army or Air Force to qualify for later enrollment in advanced courses. Veterans may be enrolled in the advanced courses of Air and Military Science at the discretion of the PMST and PAS respectively.

AIR SCIENCE AND MILITARY SCIENCE AND TACTICS

The Army ROTC course includes instruction in Leadership, Personnel Management, Exercise of Command, Tactical Employment of

the Combined Arms, and Military Policies and Problems of the United States. These subjects not only prepare students to be officers in the United States Army, but also awaken in them an appreciation of the obligations of citizenship and secure for them personal benefits resulting from practical application or organization and responsible leadership. The Air Force ROTC course of study includes instruction in Global Geography International Tensions and Security Organizations, Instruments of National Military Security, Problem Solving, Techniques, Principles of Leadership and Management, and Applied Air Science in addition to other applicable subjects. The Air Force ROTC curriculum is designed to prepare the student for his obligations of citizenship with respect to both the United States and Air Force and to his country in civilian life.

A detailed description of courses is given under each of the departments in the section of the Catalog which lists Course Descriptions.

UNIFORMS AND EQUIPMENT

All regularly enrolled members of the Air Force and Army ROTC units are furnished by the Government free of cost, uniforms, equipment, and text books. A deposit of ten dollars ($10.00) is required of all students at time of registration to cover uniforms issued to them. This fee will be refunded when uniforms are returned. The student is responsible for the care, safe-guarding, and cleaning of property issued to him. He is financially responsible for the loss, excessive wear, breakage due to carelessness, or unauthorized use of clothing and equipment.

Each student in the AF ROTC is required to have a certificate countersigned by his parents or guardian to insure that the Government is reimbursed in case the above regulations are violated.

All ROTC property must be returned to the Military Property Custodian at end of school year or when a student withdraws from school.

CREDIT

Credit is allowed for work at other institutions having an ROTC Unit established in accordance with the provisions of the National Defense Act and regulations governing the ROTC. Record of a student's prior training in the ROTC is obtained from the institution concerned.

FINANCIAL AID

Students enrolled in the advanced course are paid a monetary allowance in lieu of subsistence at the daily rate equal to the value of the commuted ration (0.90) for a total period not to exceed 595 days during the two years of the course. Students in the basic course receive no monetary allowance.

ORGANIZATION OF THE ROTC

The ROTC unit at A. and T. College consists of an Army battalion, an Air Force Group, two (2) Drill Teams and a Band. The Army battalion, commanded by a Cadet Lieutenant Colonel and staff, consists of three companies. The Cadet Lieutenant Colonel and all other cadet officers are selected from students in the second year advanced course. Cadet First Sergeants and Sergeants First Class are appointed from students enrolled in the first year advanced course. Certain specially selected students in the second year basic course are also appointed as Cadet Non-commissioned Officers.

The Air Force Group, commanded by a cadet Lt. Colonel, consists of three squadrons. These Squadrons are divided into three flights per squadron, each flight consisting of three squads. The group, squadron and flight commanders and their staffs are cadet commissioned officers and are selected from cadets enrolled in the Advanced course. All other positions are held by cadet non-commissioned officers, who are selected from the basic cadets. Cadet officers and non-commissioned officers obtain invaluable experience in leadership by being responsible for conducting all drill field instruction. They are observed and supervised in this by the officers and non-commissioned officers of the Air Force assigned to this college.

DISTINGUISHED MILITARY STUDENTS

The College is authorized to designate outstanding students of the ROTC as Distinguished Military Students each year. These students may, upon graduation, be designated Distinguished Military Graduates and may be selected for commissions in the regular Army, provided they so desire. Distinguished Military Graduates are not selected for commission in the regular Air Force, but may apply for a regular commission after serving on active duty for eighteen months.

SELECTIVE SERVICE IN RELATION TO THE ROTC

Enrollment in the ROTC does not in itself defer a student from induction and service under the Universal Military Training and Service Act. The law provides that "within such numbers as may be prescribed by the Secretary of Defense, any person who (A) has been or may hereafter be selected for enrollment or continuance in the senior division, Reserve Officers' Training Corps, or the Air Force Reserve Officers' Training Corps, or the Naval Reserve Officers' Training Corps; B) agrees, in writing, to accept a commission, if tendered, and to serve, subject to order of the Secretary of the Military Department having jurisdiction over him, not less than two years on active duty after receipt of a commission; and (C) agrees to remain a mem-

ber of a regular or reserve component until the eighth anniversary of the receipt of a commission in accordance with his obligation under subsection (d) of section 4 of this title, shall be deferred from induction under this title until after completion or termination of the course of instruction and so long as he continues in a regular or reserve status upon being commissioned, but shall not be exempt from registration."

MILITARY SCIENCE AND TACTICS

The Basic Course*

Mil Sci 211, 212, 213. Military Science I. 2(2–2).

Classroom instruction in Military History, Organization of the Army, Individual Weapons and Marksmanship, and Military Courtesy. On the drill field, emphasis on development of teamwork, esprit de corps, and essential characteristics of leadership.

Mil Sci 221, 222, 223. Military Science II. 2(2–2).

Classroom instruction in Map Reading, Crew-served Weapons and Gunnery. On the drill field, emphasis on development of teamwork, esprit de corps, essential characteristics of leadership, and acceptance of responsibility. Prerequisites: Mil Sci I or equivalent credit.

The Advanced Course

Mil Sci 231, 232, 233. Military Science III. 3(3–3).

Classroom instruction in Tactics, Organization, Function and Mission of the Arms and Services, Methods of Instruction, Communications, and Leadership. On the drill field, emphasis on acceptance of responsibility, exercise of command, and development of self-confidence, initiative and dignity in appearance and demeanor. Prerequisites: Mil Sci I and II, or equivalent credit.

Mil Sci 241, 242, 243. Military Science IV. 3(3–3).

Classroom instruction in Tactics, Logistics, Operations, Personnel Management, Military Administration, and Service Orientation. On the drill field, emphasis on exercise of command, planning and executing all phases of training (Instruction in basic fundamentals, inspections, ceremonies, and competitions) and maximum development of teamwork, esprit de corps, and leadership characteristics. Prerequisites: Mil Sci II and satisfactory completion of six weeks' summer camp training.

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*All veterans in service as long as six months are excused from this course but may enroll in the basic course in Army or Air Force ROTC to qualify for later enrollment in advanced courses. See also the Division of Air Force and Military Science and Tactics.

AIR SCIENCE

The Basic Course*

Air Sci 211, 212, 213. Air Science I. 2(2–2).

Instruction in Introduction to Aviation, Fundamentals of Global Geography, International Tensions and Security Organizations, and Instruments of National Military Security, and Leadership Laboratory.

Air Sci 221, 222, 223. Air Science II. 2(2–2).

Instruction in Elements of Aerial Warfare, Careers in ASAF, and Leadership Laboratory-Cadet Non-Commissioned Officers' Training. Prerequisite: Air Sci I or equivalent credit.

The Advanced Course

Air Sci 231, 232, 233. Air Science III. 3(3–3).

Instruction in Air Force Commander and Staff, Problem Solving Techniques, Communications Process and Air Force Correspondence, Military Justice System, Applied Air Science, Aircraft Engineering, Navigation and Weather, Air Force Base Functions, and Leadership Laboratory. Prerequisites: Air Sci I and II or equivalent credit.

NOTE: Cadets attend Summer Camp after Air Science III and before taking Air Science IV.

Air Sci 241, 242, 243. Air Science IV. 3(3–3).

Summer Camp is critiqued. Instruction in Principles of Leadership and Management (Seminar), Career Guidance, Military Aspects of World Political Geography, Military Aviation and the Art of War, Briefing for Commissioned Service, and Leadership Laboratory. Prerequisite: Air Sci III.

DEPARTMENT OF SOCIAL SCIENCES

LEONARD H. ROBINSON, *Chairman*

In keeping with the general objectives of the College, the offerings of this department are designed to provide students with a cultural and humanistic preparation in the social sciences, to insure students a proper groundwork on which to build advanced technical and professional courses, and to stimulate those qualities and characteristics from which come intellectual vigor, broad human sympathy and constructive imagination.

THE SOCIAL SCIENCES

The social sciences at the Agricultural and Technical College of North Carolina include economics, geography, history, political science, and sociology.

A MAJOR IN THE SOCIAL SCIENCES

Students who wish to major in the social sciences or in a particular social science, may do so by selecting any one of two curricula: (1) Social Studies, or (2) Applied Sociology.

The *Social Studies* curriculum is specifically designed to prepare students for the teaching of history and/or any combination of the social sciences listed above, in junior and senior high schools.

The *Applied Sociology* curriculum is geared to meet the needs of students who are interested in social welfare, labor relations, government service, personnel administration, industrial relations, public relations and kindred vocations.

COMPREHENSIVE EXAMINATION

A social science major must pass a comprehensive examination in the social sciences before he will be recommended for graduation by the department.

Examinations are designed to demonstrate a student's ability to correlate the subject matter of the social sciences and to apply it in practical situations.

The examination is given once each school quarter by the Department of Social Science.

Sample programs for social science majors are shown below.

MAJOR IN HISTORY*

This major is designed especially for those desiring to pursue further study in the field of history.

Junior Year

Course and No.	*Fall*	*Winter*	*Spring*
History 211, 212, 221	3(3–0)	3(3–0)	5(5–0)
History 223, 231 or 232, 233	3(3–0)	5(5–0)	3(3–0)
Sociology 231	5(5–0)	.....	.....
Minor or electives	3( )	10( )	12( )
	18	18	18

*History 210, 213, and 222 which are required of all students during Freshman and Sophomore years must be included in the History Major. A minimum of 45 quarter hours in history is required for the History Major. In addition a total of 19 quarter hours in political science, sociology, economics or geography is required. It is suggested that students majoring in history take the majority of their electives in the social science and English field.

Senior Year

Course and No.	*Fall*	*Winter*	*Spring*
History 226	3(3–0)	.....	.....
History 235, 237, 238	3(3–0)	3(3–0)	3(3–0)
Economics 236	3(3–0)	.....	.....
Sociology 242	.....	.....	3(3–0)
Political Science 232 or 231	.....	5(5–0)	.....
Geography 244	3(3–0)	.....	.....
Minor or electives	6( )	6( )	12( )
	18	17	18

MAJOR IN APPLIED SOCIOLOGY*

Junior Year

Course and No.	*Fall*	*Winter*	*Spring*
Economics 231, 232, 234	5(5–0)	5(5–0)	5(5–0)
Sociology 231, 232, 233 or 131	5(5–0)	5(5–0)	3(3–0)
Soc. 234, 235	3( )	3( )	.....
Psychology, 200, 205, 206	5(5–0)	5(5–0)	5(5–0)
Political Science 231	.....	.....	5(5–0)
Minor or Electives	.....	.....	.....
	18	18	18

Senior Year

Course and No.	*Fall*	*Winter*	*Spring*
Economics 236, 246 or 501, 502	3(3–0)	3(3–0)	3(3–0)
Sociology 253; Mathematics 318 or Ag. Econ. 132	3(3–0)	5(5–0)	.....
Sociology 241, 242, 245	3(3–0)	3(3–0)	5(5–0)
Political Science 232	.....	5(5–0)	.....
Minor or Electives	9( )	3( )	10( )
	18	19	18

*Students expecting to major in Applied Sociology should take the required courses listed by the School of Education and Science. There are no additional subjects required for the major other than those listed in the above curriculum.

Note: It is advised that students majoring in Applied Sociology choose minor in a closely related field. The social science minor requires a minimum of 38 quarter hours. This would include 18 to 20 hours of history and 20 hours from economics, sociology, geography and political science. The 15 hours of history required of Freshmen and Sophomores may be included in the history minor. Suggested courses for the social science minor are: History 210, 213, 222 and 221 or 232, Economics 231, Sociology 231, Geography 240, and Political Science 231 or 232.

Suggested Electives

Sociology 502, 506
Economics 233
Geography 241, 242, 244
History 237, 246
Education 223, 225, 231, 233
Religion 211, 212, 213
Philosophy 222, 223

MAJOR IN SOCIAL STUDIES

This major is designed especially for persons planning to teach in the secondary schools.

Junior Year

Course and No.	*Fall*	*Winter*	*Spring*
Hist. 231, 232 Ancient and Medieval History	.....	5(5–0)	5(5–0)
Ec. 231, 232 Economics	5(5–0)	5(5–0)	.....
or			
Hist. 211, 212	3(3–0)	3(3–0)	.....
Sociology 231, 232, 242	5(5–0)	5(5–0)	3(3–0)
Minor or Electives	5(5–0)	.....	8(8–0)
	18	18	16

Senior Year

Course and No.	*Fall*	*Winter*	*Spring*
Geo. 240 Principles of Geography	.....	5(5–0)	.....
Geo. 241 Regional Geography	.....	.....	5(5–0)
Hist. 233 Latin American History	.....	.....	3(3–0)
Pol. Sc. 231 Federal Government	5(5–0)	.....	.....
Pol. Sc. 232 State Government	.....	5(5–0)	.....
Minor or Electives	10(10–0)	5(5–0)	5(5–0)
	15	15	13

COURSES IN HISTORY

210. History of Civilization. Credit 5(5–0).

A general course surveying the main trends in history of western civilization.

211. Modern Europe. Credit 3(3–0).

A survey course dealing with major factors and movements in the history of modern Europe, growth of democracy and the expansion of Europe from 1500 to 1815. Lectures, collateral reading, special reports and map work.

212. Modern Europe. Credit 3(3–0).

A survey of the history and development of Europe from 1815 to the present.

213. History of the Negro. Credit 5(5–0).

This course includes a brief survey of the African background of the Negro, traces him from Africa to America; includes a study of his enslavement, with special emphasis on slavery in America, the Free Negro before 1860, abolition, and the Civil War with special emphasis on the part played by Negro troops, achievements since 1865, and forces in Negro progress.

221. American History. Credit 5(5–0).

The economic, political and social development of the colonies and of the United States up to the Civil War.

222. United States History. Credit 5(5–0).

An intensive study of the political, social and economic history of the United States from the reconstruction period to World War I.

223. History of Reconstruction. Winter. Credit 3(3–0).

An intensive study of the social, political and economic conditions of the United States during the years 1865 to 1895. Prerequisite: 15 hours of history.

226. History of England. Credit 5(5–0).

A survey of the social and political development of England in the 16th, 17th, and 18th centuries.

231. Ancient History. Fall. Credit 5(5–0).

Study of the civilization and contributions of the people of the Orient, along the Nile, and of Greece and Rome. Prerequisite: 15 hours of history.

232. Medieval History. Winter. Credit 5(5–0).

A history of Europe in the middle ages. Prerequisite: 15 hours of history.

233. History of Latin America. Spring. Credit 3(3–0).

A study of the rise and development of the Latin-American nations.

Study of the civilization and contributions of the people of the Prerequisite: 15 hours of history or consent of instructor.

234. Contemporary American History. Credit 3(3–0).

Analysis of important problems in American history since World War I.

235. History of Eastern Europe. Credit 3(3–0).

A general course in the history of Eastern Europe, the Balkans and Russia from the period of the Romanoffs to the present.

237. American Constitutional History. Credit 3(3–0).

A study of the constitutional development of the United States from 1789 to the present time.

238. History of North Carolina. Credit 3(3–0).

A general survey of North Carolina from colonial times to the present.

246. History of the Far East. Credit 3(3–0).

A survey of the economic and political development of the far eastern countries with emphasis on the twentieth century. Prerequisite: 15 hours of history.

POLITICAL SCIENCE

211. Government in American Society. Credit 3(3–0).

A treatment of the historical development and organization of national government.

231. Federal Government. Fall. Credit 5(5–0).

A general introductory course in the government of the United States designed to acquaint the student with the more important facts of the organization and working of Federal institutions and to give a foundation for more advanced work in government. Prerequisite: 15 hours of Social Science or consent of instructor.

232. State and Local Government. Winter. Credit 5(5–0).

A study of state constitutions and of the structure and functions of state and local government in the United States. Prerequisite: 15 hours of Social Science or consent of instructor.

233. Municipal Government. Credit 3(3–0).

A study of the organization and problems of city government in the United States.

234. Comparative European Government. Credit 3(3–0).

An analysis of selected European countries in the development of their political systems.

235. Party Politics and Pressures. Credit 3(3–0).

This course deals with modern political parties as instruments of popular government. An analysis is made of the role of parties in the formation of public opinion, and its transposition into public action.

236. Current International Relations. Credit 3(3–0).

A treatment of world problems of current interest among the countries of the world.

GEOGRAPHY

240. Principles of Geography. Credit 5(5–0).

A survey of the principles of geography.

241. Regional Geography of Anglo-American. Credit 5(5–0).

A study of the geographic regions of the United States and Canada.

242. Resources and Industries of United States. Credit 3(3–0).

A study of the physical resources of the United States and its possessions.

243. Economic Geography of Latin America. Credit 3(3–0).

The agricultural and industrial resources of Latin America, including the utilization of Negro labor, and the assimilation of African culture into Latin-American life.

244. Political Geography. Credit 3(3–0).

Theories of political geography; territorial changes and their political significance; problems in political unification; centralization and federation.

SOCIOLOGY

231. Principles of Sociology. Credit 5(5–0).

Principles and laws of sociology; the literature in which they are discussed, and the key concepts about which they center.

232. Social Problems. Credit 5(5–0).

An analysis of changing aspects of our social life and the problems created for the individual and society.

233. Community Organization. Credit 3(3–0).

A study of the demographic factors, family life, standards of living, social attitudes and values. Prerequisite: Sociology 231 or consent of instructor.

234. Juvenile Delinquency. Credit 3(3–0).

A study of crimogenic homes, communities and general conditions conducive to delinquency. Critical analysis of theories and research in the etiology of delinquent behavior. The relationship of cause and treatment is considered.

235. Criminology. Credit 3(3–0).

A course dealing with causative explanations and the nature of crime and criminal behavior; critical analysis of theories and research in the etiology of criminal behavior, and trends in the treatment and disposition and criminals.

236. Culture and Personality. Credit 3(3–0).

The nature of culture; the factor of differences in human behavior and personality as related to cultural variability. Prerequisites: Sociology 231 and a course in elementary psychology.

240. Social Psychology. Credit 5(5–0).

A course treating the social application of psychology; social stimulation and response.

241. Marriage and the Family. Credit 3(3–0).

A study of marriage problems and family living with special attention being given to items such as personality, courtship, family budgeting, divorce, parenthood.

242. Minority Groups. Credit 3(3–0).

An examination of the composition, status, and relations of racial and other minority groups in the United States and the world.

245. Field Work in Social Administration. Credit 5(2–6).

This course designed to provide practical experience and counseling in the application of principles and techniques in various areas of social administration under the direction of the instructor in cooperation with administrators of selected social agencies in the community. Two lectures per week, with three hours assigned for practical experience.

253. Introduction to Sociological Research. Credit 3(3–0).

Delineation of a research problem in Sociology; survey and uses of available sources of data; consideration of sampling procedures of sociology research; field methods for collecting original data; graphic presentation of statistical data. General prerequisites must include Sociology 231.

502. Current Economic and Social Problems. Credit 3(3–0).

A practical course in applied economics and sociology dealing with analysis of present trends in government, economics, industry, agriculture, and the social implications of these trends. Prerequisite: 15 hours of social science.

503. Research Problems. Credit 3(1–4).

Individual problems for research in each student's field of interest—labor, industry, agriculture, unemployment, old age, etc. Prerequisite: 15 hours of social science.

506. Population Problems. Credit 3(3–0).

Introduction to population study; the development of official population data; principal sources of information; methods of analysis; survey of contemporary population movements.

ECONOMICS

231. Principles of Economics. Credit 5(5–0).

This course surveys the general field of Economics.

232. Economic Problems. Credit 5(5–0).

This course gives detailed consideration to major areas in modern economic life. The implications of public ownership, monopoly, organized labor and business combinations are stressed. Prerequisite: Economics 231 or consent of instructor.

233. Money and Banking. Credit 5(5–0).

A general survey of the role of banking in the economy; the nature of money and international exchange.

234. Labor Problems. Credit 5(5–0).

An introductory course dealing with the efforts of working people to improve their relative position in the economy; the influence of unionism and of governmental participation are emphasized.

236. Consumer Economics. Credit 3(3–0).

A course showing the importance of the consumer in the American economy, especially as a force for economic betterment; consumer problems of Negroes.

254. Statistical Methods in Social Science. Credit 4(2–4).

An introduction to research methods; social statistics; analysis of methods used by social scientists.

245. Seminar in Economics. Credit (2–0).

An intensive study of significant labor and industrial problems and literature. Open only to majors and minors in the social sciences.

246. Government and Economic Life. Credit 3(3–0).

A survey of the rationale and effects of the impact of government in major areas of economic life. Prerequisite: Economics 231 or consent of instructor.

TECHNICAL INSTITUTE

S. C. SMITH, *Dean*

The aim of the Technical Institute is to train skilled tradesmen and technicians who will take their places in industry as producers and contributing citizens.

It is designed for those students who desire to prepare themselves to enter industry upon graduation.

In addition to training in the manipulative skills, technical, related and general education courses are stressed for all students in the department.

In all departments, shop equipment and special tools will be furnished by the college but students are expected to furnish individual tools, protective clothing, and textbooks, as required by the department.

The amount of time required in shop for students majoring in any of the two-year courses is twenty hours per week, thirty-six weeks per year.

A certificate will be awarded to those students satisfactorily completing one of the two-year courses.

Advanced work is offered in many of the trade areas. An additional certificate will be awarded to students satisfactorily completing the advanced courses.

OFFICERS OF INSTRUCTION

TECHNICAL INSTITUTE

S. COOPER SMITH.....*Dean Technical Institute*
B.S., A. and T. College; M.S., University of Michigan.

MELVIN T. ALEXANDER.....*Radio and Television*
B.S., A. and T. College.

ISAAC BARNETT.....*Driver Education*
B.S., A. and T. College; Certificate, General Motors Tech.

DAVID M. BRADLEY.....*Sheet Metal*
Certificate, Hampton Institute.

NATHAN E. BROWN.....*Carpentry*
B.S., A. and T. College; M.S., *Ibid.*

G. L. BURGE.....*Masonry*
Certificate, A. and T. College.

MARQUIS L. COUSINS.....*Auto Mechanics*
B.S., A. and T. College.

JAMES F. DAWKINS.....*Cabinet Making*
B.S., A. and T. College; M.S., University of Pennsylvania.

CLYDE DEHUGULEY.....*Shoe Repairing*
Graduate, Tuskegee Institute.

SAMPSON FOSTER.....*Air Conditioning and Refrigeration*
Certificate, U. S. Army Training School.

LEON H. HARDY.....*Photography*
B.S., A. and T. College.

EDDIE HARGROVE.....*Tailoring*
B.S., Hampton Institute; M.S., A. and T. College.

DAVID M. HINTON.....*Mathematics*
B.S., Winston-Salem Teachers College; M.S., DePaul University.

MAJOR B. HOLLOWAY.....*Auto Mechanics*
Certificate, A. and T. College.

JESSIE HOPKINS.....*Electric Wiring*
Certificate, A. and T. College.

JAMES JENKINS, JR.....*Mathematics and Drawing*
B.S., Hampton Institute.

CARL L. MANUEL.....*Radio and Television*
B.S., A. and T. College.

JOSEPH H. MEYERS.....*Plumbing*
Master Plumber.

WALLACE L. MITCHELL.....*Carpentry*
B.S., Shaw University; B.S., A. and T. College.

CALVIN F. MORROW.....*Shoe Repairing*
B.S., A. and T. College; Certificate, A. and T. College.

JAMES T. NORRIS, JR.....*Auto Mechanics*
Certificate, A. and T. College.

FORRIST J. PARKS.....*Painting and Decorating*
B.S., Hampton Institute.

LEWIS RICHARDS.....*Brick Masonry*
B.S., Hampton Institute.

CLEMMENT G. SMITH.....*Dry Cleaning*
Certificate, National Institute of Dry Cleaning.

AMOS WATKINS.....*Tailoring*
B.S., Hampton Institute; M.A., New York University.

ANDREW W. WILLIAMS.....*Machine Shop Practice*
B.S., A. and T. College.

RAYMOND P. WILLIAMS.....*Welding*
Certified by American Bureau of Shipping Surveyor.

VOCATIONAL TRADE COURSES

AUTO MECHANICS

M. B. HOLLOWAY, *Chairman*

Training Objectives

This course is designed to prepare young men and women to become skilled mechanics. The practical side of the course has been so emphasized that upon the completion of the trade, students will be qualified to become owners or managers of an auto service business as well as skilled mechanics in this field.

CURRICULUM

Freshman Year

Course and No.	*Fall*	*Winter*	*Spring*
Auto Mech. 411, 412, 413	10(6–14)	10(6–14)	10(6–14)
English 211, 212	5(5–0)	5(5–0)	5(5–0)
Math. 435, 436	3(3–0)	3(3–0)	.....
Mil. Sc. 211, 212, 213	2(2–2)	2(2–2)	2(2–2)
Phy. Ed.	1(0–2)	1(0–2)	1(0–2)
Machine Shop, M.E. 311	.....	.....	3(0–6)
Sheet Metal 311	.....	.....	3(0–6)
	21	21	19

Sophomore Year

Course and No.	*Fall*	*Winter*	*Spring*
Auto Mech. 421, 422, 423	10(6–14)	10(6–14)	10(6–14)
Machine Shop, M.E. 312	3(0–6)	.....	.....
B. Adm. 330	3(3–0)	.....	.....
Acct. 304	.....	3(3–0)	.....
Mil Sc. 221, 222, 223	2(2–2)	2(2–2)	2(2–2)
Phy. Ed.	1(0–2)	1(0–2)	1(0–2)
Welding 311, 312	.....	3(0–6)	3(0–6)
Sociology 231	.....	.....	5(5–0)
	19	19	21

ADVANCED COURSE

Junior Year

Course and No.	*Fall*	*Winter*	*Spring*
Auto Mech. 431, 432, 433	10(6–14)	10(6–14)	10(6–14)
Welding 313	3(0–3)	.....	.....
Economics 231	5(5–0)	.....	.....
Machine Shop 313	.....	3(0–6)	.....
Electric Wiring, I.A. 326, 327	.....	3(0–3)	3(0–3)
Refrigeration 311	.....	.....	3(0–6)
Electives	2( )	3( )	3( )
	20	19	19

COURSES

411. Orientation. Credit 10(4–16).

Shop procedures, care and use of shop tools and equipment. Fundamentals of the internal combustion engine.

412. Maintenance and Service. Credit 10(4–16).

The principle of operation and maintenance of chassis parts, disassembly and reassembly of transmission, rear ends, universal joints, shock absorbers, and braking systems.

413. Power Plant. Credit 10(4–16).

The principle of the four-cycle engine, fuel and cooling systems.

421. Power Plant. Credit 10(4–16).

Overhaul of engine including adjusting of bearings, grinding valves, and installing rings.

422. Power Plant. Credit 10(4–16).

Use of the boring bar, connecting rod aligners, use of cylinder hone, reamers, and fitting of pistons.

423. Electrical System. Credit 10(4–16).

Principles of the electrical system, magnetism, generators, starters, voltage and current regulators, automatic chokes, ignition wiring and batteries.

ADVANCED COURSES

431. Body Work. Credit 10(4–16).

Lecture and demonstration on the use and care of body tools. Laboratory projects designed to give skills in body work.

432. Painting. Credit 10(4–16).

Designed to give the student experience and knowledge of spraying of various enamels and lacquers.

433. Optional Specialization. Credit 10(4–16).

During this quarter the student will do special projects in that phase of Automobile Mechanics in which he is especially interested.

CABINETMAKING AND UPHOLSTERING

J. F. DAWKINS, *Chairman*

Training Objectives

To develop skilled workers in the manufacturing and repairing of furniture and cabinets. English, mathematics and drafting are required according to the needs of the students.

CURRICULUM

Freshman Year

Course and No.	*Fall*	*Winter*	*Spring*
Cabinet-Making 411, 412, 413	10(2–18)	10(2–18)	10(2–18)
English 211, 212, 213	5(5–0)	5(5–0)	5(5–0)
Mathematics 435, 436	3(3–0)	3(3–0)	.....
Phy. Ed.	1(0–2)	1(0–2)	1(0–2)
Mil. Sc. 211, 212, 213	2(2–2)	2(2–2)	2(2–2)
Electives	.....	.....	3(3–0)
	21	21	21

Sophomore Year

Course and No.	*Fall*	*Winter*	*Spring*
Cabinet-Making 421, 322, 423	10(2–18)	10(2–18)	10(2–18)
B. Adm. 330	3(3–0)	.....	.....
Acct. 304	.....	3(3–0)	.....
Mech. Drawing, M.E. 311, 312	3(0–6)	3(0–6)	.....
Sociology 231	.....	.....	5(5–0)
Materials of Cont., I.A. 324	.....	.....	3(3–0)
Mil. Sc. 221, 222, 223	2(3–2)	2(3–2)	2(3–2)
Carp. 311, 312	3(0–6)	3(0–6)	.....
	21	21	20

Suggested Electives:
Applied Drawing 437 and 438.

ADVANCED COURSE

Junior Year

Course and No.	*Fall*	*Winter*	*Spring*
Cabinet-Making 431, 432, 433	10(2–18)	10(2–18)	10(2–18)
Voc. Drawing, I.A., 321, 322, 323	3(0–6)	3(0–6)	3(0–6)
M.E. 327	.....	.....	3(3–0)
Painting 311, 312	3(0–6)	3(0–6)	.....
Electives	3( )	3( )	3( )
	19	19	19

COURSES

First Year

411. Care and Use of Tools. Credit 10(4–16).

Common woodworking tools, sharpening cutting tools—grinding and

whetting plane bits and chisels, filing auger bits, and sharpening saws. Projects in joinery are provided.

412. Elementary Joinery. Credit 10(4–16).

The student works on projects involving joinery with a view of gaining a high degree of dexterity. Square and circular table tops are built up with the use of glue. The work is performed mostly by hand.

413. Advanced Joinery. Credit 10(4–16).

The construction of projects involving mortise and tenon joints and dovetail joints. Projects such as tables, stands, cabinets, and chests.

Second Year

421. Wood Turning. Credit 10(4–16).

Care and use of woodturning machinery. Simple projects involving spindle turning.

422. Wood Turning. Credit 10(4–16).

Additional practice in spindle turning. Practice in face plate turning and in taper turning.

423. Wood Finishing. Credit 10(4–16).

Filling, staining, waxing, varnishing, and enameling, refinishing of furniture.

ADVANCED COURSES

431. Upholstering. Credit 10(4–16).

Projects involving the various types of caning, seat weaving and upholstery without springs.

432. Upholstering. Credit 10(4–16).

Upholstering frame structures, springing up, methods of fastening, webbing, stuffings, covering; the use of gimp, nails, springs, hard-edge upholstery, and spring-edge upholstery.

433. Cabinetmaking and Upholstering. Credit 10(4–16).

The development of a comprehensive project involving cabinet work, finishing, and upholstering.

CARPENTRY

N. BROWN AND W. MITCHELL

Training Objectives

This course aims to develop in the student the knowledge and skills necessary for practical work in carpentry.

CURRICULUM

Freshman Year

Course and No.	*Fall*	*Winter*	*Spring*
Carpentry 411, 412, 413	10(2–18)	10(2–18)	10(2–18)
English 211, 212, 213	5(5–0)	5(5–0)	5(5–0)
Mil. Sc. 211, 212, 213	2(3–2)	2(3–2)	2(3–2)
Masonry 311	.....	.....	3(0–6)
Phy. Ed. 210a, 210b, 210c	1(0–2)	1(0–2)	1(0–2)
Math. 435, 436	3(3–0)	3(3–0)	.....
	21	21	21

Sophomore Year

Course and No.	*Fall*	*Winter*	*Spring*
Carpentry 421, 422, 423	10(2–18)	10(2–18)	10(2–18)
B. Adm. 330	3(3–0)	.....	.....
Acct. 304	.....	3(3–0)	.....
Mech. Drawing 311, 312	3(0–6)	3(0–6)	.....
Mil. Sc. 221, 222, 223	2(3–2)	2(3–2)	2(3–2)
M.E. 327	.....	.....	3(3–0)
Phy. Ed.	1(0–2)	1(0–2)	1(0–2)
Cabinet Making 311	.....	.....	3(0–6)
	19	19	19

Suggested Electives:
Applied Drawing 437 and 438.

ADVANCED COURSE

Junior Year

Course and No.	*Fall*	*Winter*	*Spring*
Carpentry 431, 432, 433	10(2–18)	10(2–18)	10(2–18)
I.A. 331, 332	3(0–6)	3(0–6)	.....
Economics 231, 234	.....	5(5–0)	5(5–0)
Electives	6( )	3( )	3( )
	19	21	18

Suggested Electives:
Electric Wiring, I.A. 326, English 224.

COURSES

411. Benchwork. Credit 10(2–18).

Care and use of woodworking tools, sharpening cutting tools, grinding and whetting plane bits and wood chisels. Special projects assigned

to students in accordance with the student's background with the use of hand tools.

412. Blueprint Reading and Estimating. Credit 10(2–18).

A study of the fundamental principles of orthorgraphic projection. Drawing of plans and details of buildings. Estimating quantities of materials and cost.

413. House Framing. Credit 10(2–18).

A working knowledge of the framing square and its special uses to the carpenter. Methods of placing sills, girders, laying out and erecting joists, framing around wells and inserting bridging.

421. House Framing. Credit 10(2–18).

This is a continuation of 413 with emphasis placed on framing walls, allowing for openings, sheathing outside walls, erecting inside walls, making and placing of doors, window frames and installing hardware.

422. Roof Construction. Credit 10(2–18).

Laying out common rafters, hip, jack, valley and cripple rafters by the use of the steel square. Various types of roof will be constructed in miniature and half scale sizes.

423. Stair Building. Credit 10(2–18).

Laying out, cutting and placing of straight run stringers, platform flights, treads, rises, newels, skirting boards, rails, balusters and forms for concrete work.

ADVANCED COURSES

431. Advanced House Framing. Credit 10(2–18).

A continuation of 421 with greater emphasis on assembling and erecting outside and inside walls. Operations in plumbing, squaring, bracing, sheathing walls, casing windows and doors and preparing and laying a floor.

432. Advanced Roof Construction. Credit 10(2–18).

Continuation of 422 with emphasis on laying out and cutting common, hip, valley, jack and crippled rafters. A study of various types of sheathing, shingles and flashing used in roof sheathing.

433. Building Repair. Credit 10(2–18).

The methods and techniques used in building repair, principles of building construction.

DRY CLEANING

C. G. SMITH, *Chairman*

Training Objectives

The purpose of this course is to prepare young men and women to become skilled technicians in the field of dry cleaning.

CURRICULUM

Freshman Year

Course and No.	*Fall*	*Winter*	*Spring*
Dry Cleaning 411, 412, 413	10(4–16)	10(4–16)	10(4–16)
English 211, 212, 213	5(5–0)	5(5–0)	5(5–0)
Math. 435, 436	3(3–0)	3(3–0)	.....
Phy. Ed.	1(0–2)	1(0–2)	1(0–2)
Mil. Sc. 211, 212, 213	2(2–2)	2(2–2)	2(2–2)
Electives	.....	.....	3( )
	21	21	21

Sophomore Year

Course and No.	*Fall*	*Winter*	*Spring*
Dry Cleaning 421, 422, 423	10(4–16)	10(4–16)	10(4–16)
Chem. 111, 112	5(3–4)	5(3–4)	.....
B. Adm. 330	3(3–0)	.....	.....
Acct. 304	.....	3(3–0)	.....
Tailoring 311, 312	.....	3(0–6)	3(0–6)
Soc. 231	.....	.....	5(5–0)
Electives	3( )	.....	3( )
	21	21	21

COURSE OUTLINE

411. Dry Cleaning Room. Credit 10(4–16).

A brief history of Dry Cleaning and study of equipment, solvents, marking and receiving systems, separating and classifying work, procedures in extracting, tumbling, filtration, and distillation. Care and maintenance of equipment.

412. Spotting. Credit 10(4–16).

Emphasis placed on simple spotting, methods of removing spots, study of fibers and fabrics, experimental studies of stains, dyes, bleaches, and chemicals.

413. Wet Cleaning. Credit 10(4–16).

Methods of wet cleaning, duties of the wet cleaners, practice trousers, coats, dresses, shirts, etc. Study of the use of bleaches, dyes and chemicals will be continued. Special attention will be given to treatment of novelty garments. Methods of drying and semi-finishing.

421. Finishing. Credit 10(4–16).

The fundamentals of finishing garments, study of equipment used, the treatment of designs of garments, and reshaping wet cleaned garments, equipment and operations in finishing garments of silk.

422. Applied Science. Credit 10(4–16).

Solvents and reagents, fabrics, cotton, wool, silks, etc. Chemistry as it is related to Dry Cleaning, uses and reaction. The principles of engineering and the effect of relative humidity on cleaning operations.

423. Plant Layout, Management, and Maintenance. Credit 10(4–16).

The principles and practices of plant layout, installation of equipment and maintenance. Plant Management and operations including labor, supplies, bookkeeping, advertising and claims adjustment.

ELECTRICITY—ELECTRIC WIRING AND MOTOR REPAIR

J. H. HOPKINS, *Chairman*

Training Objective

To prepare persons to work as electricians in wiring and installation.

CURRICULUM

Freshman Year

Course and No.	*Fall*	*Winter*	*Spring*
Electric Wiring 411, 412, 413	10(2–18)	10(2–18)	10(2–18)
English 211, 212, 213	5(5–0)	5(5–0)	5(5–0)
Math. 435, 436	3(3–0)	3(3–0)	.....
P. Ed.	1(0–2)	1(0–2)	1(0–2)
Mil. Sc. 211, 212, 213	2(2–2)	2(2–2)	2(2–2)
Carpentry 311	.....	.....	3(0–6)
	21	21	21

Sophomore Year

Course and No.	*Fall*	*Winter*	*Spring*
Electric Wiring 421, 422, 423	10(2–18)	10(2–18)	10(2–18)
Bus. Adm. 330	3(3–0)	.....	.....
Acct. 304	.....	3(3–0)	.....
Mil. Sc.	2(2–2)	2(2–2)	2(2–2)
Phy. Ed.	1(0–2)	1(0–2)	1(0–2)
Sociology 231	.....	.....	5(5–0)
M.E. 311, 312	3(0–6)	3(0–6)	.....
Material of Const., I.A. 324	.....	.....	3(3–0)
	19	19	21

ADVANCED COURSES

Junior Year

Course and No.	*Fall*	*Winter*	*Spring*
Electric Wiring 431, 432, 433	10(2–18)	10(2–18)	10(2–18)
Cont. and Spec., M.E. 327	3(3–0)	.....	.....
M.E. 328	.....	.....	2(0–4)
Economics 231, 234	.....	5(5–0)	5(5–0)
Math. 311	.....	5(5–0)	.....
Electives	5(5–0)	.....	3( )
	18	20	20

Suggested Electives

Phys. 311, Welding 311, 312, M.E. 328, 329, I.A. 347.

COURSE OUTLINE

411. D.C. and A.C. Circuits. Credit 10(4–16).

Ohm's Law; power and energy, commercial wire, magnets and magnetism, and magnetic circuits, including circuit theory.

412. Light and Power Wiring. Credit 10(4–16).

Wiring, non-metallic, sheathed conductors; lighting circuits, flexible metallic conductors, rigid conduit, surface raceways, duct wiring, and power circuits.

413. Illumination—N. E. Code. Credit 10(4–16).

Lighting design for residence, commercial and public interiors, introduction to the National Electric Code.

421. Wiring Design and N. E. Code. Credit 10(4–16).

The National Electric Code, design of electrical layouts based on standards, lighting and adequacy.

422. Electric Motors. Credit 10(4–16).

Principles of electric motors and appliances.

423. Armature Winding. Credit 10(4–16).

Study of split-phase, single-phase, and poly-phase motors, use of coil winding machines, testing and baking.

ADVANCED COURSES

431. Household Appliances. Credit 10(4–16).

Study and laboratory work in the construction and repair of electrical household appliances.

432. Special Electric Equipment. Credit 10(4–16).

Study and laboratory practice with special emphasis on the interests of the student.

433. Electric Wiring. Credit 10(4–16).

Continuation of E.W. 432.

LAUNDRY MANAGEMENT

C. G. SMITH, *Chairman*

Training Objective

The purpose of this course is to train individuals as skilled workers, managers and operators of a laundry plant.

CURRICULUM

Freshman Year

Course and No.	*Fall*	*Winter*	*Spring*
Laun. Mgt. 411, 412, 413	10(4–16)	10(4–16)	10(4–16)
Math. 435, 436	3(3–0)	3(3–0)	.....
English 211, 212, 213	5(5–0)	5(5–0)	5(5–0)
Phy. Ed.	1(0–2)	1(0–2)	1(0–2)
Mil. Sc. 211, 212, 213	2(2–2)	2(2–2)	2(2–2)
Plumbing 311	2(2–2)	2(2–2)	2(2–2)
	21	21	21

Sophomore Year

Course and No.	*Fall*	*Winter*	*Spring*
Laun. Mgt. 421, 422, 423	10(4–16)	10(4–16)	10(4–16)
Chem. 111, 112	5(3–4)	5(3–4)	.....
Bus. Adm. 330	3(3–0)	.....	.....
Acct. 304	.....	3(3–0)	.....
Plumbing 312	.....	.....	3(0–6)
Sociology 231	.....	.....	5(5–0)
Phy. Ed.	1(0–2)	1(0–2)	1(0–2)
Mil. Sc.	2(2–2)	2(2–2)	2(2–2)
	21	21	21

COURSE OUTLINE

411. Identification. Credit 10(4–16).

Receiving, marking and inspection of garments. Assorting and classification, marking machine. Shop practice.

412. Washroom Procedures. Credit 10(4–16).

Proper loading of washer, extractors and tumblers, working formula, soap, bleaches, sours, stain removing, starching, washer speeds and temperatures. Shop practice.

413. Finishing. Credit 10(4–16).

Flat work ironers, garment presses and shirt units, hand finishing, folding, standard lays in pressing and pleating. Shop practice.

421. Applied Science. Credit 10(4–16).

Study of washroom chemistry, detergents, water, soap, bleaches, sours, and bluing.

422. Maintenance of Equipment. Credit 10(4–16).

Cleaning, lubricating and adjustments. Padding of machines, care and use of marking machines. Inspection methods and minor repairs. Shop practice.

423. Plant Management. Credit 10(4–16).

Labor and supplies. Payrolls, bookkeeping methods. Storage of suppplies and finished bundles. Adjustment of claims. Shop practice.

MACHINE SHOP PRACTICE

A. WILLIAMS, *Chairman*

Training Objectives

To develop skilled workers in the use of various machine tools, and as specialized machine operators and journeymen machinists.

CURRICULUM FOR MACHINE SHOP PRACTICE

Freshman Year

Course and No.	*Fall*	*Winter*	*Spring*
Machine Shop 411, 412, 413	10(2–18)	10(2–18)	10(2–18)
Drawing 311, 312	.....	3(0–6)	3(0–6)
English 211	5(5–0)	.....	.....
Mil. Sc.	2(2–2)	2(2–2)	2(2–2)
Welding	3(0–6)	.....	.....
Math.	.....	5(5–0)	5(5–0)
Phy. Ed.	1(0–2)	1(0–2)	1(0–2)
	21	21	21

Sophomore Year

Course and No.	*Fall*	*Winter*	*Spring*
Machine Shop 421, 422, 423	10(2–18)	10(2–18)	10(2–18)
English 212, 213	5(5–0)	5(5–0)	.....
Mil. Sc.	2(2–2)	2(2–2)	2(2–2)
Phy. Ed.	1(0–2)	1(0–2)	1(0–2)
B. Adm. 330	3(3–0)	.....	.....
Sheet Metal 311	.....	3(0–6)	.....
Acct. 304	.....	.....	3(3–0)
I.A. 326	.....	.....	3(0–6)
	21	21	19

ADVANCED COURSES

Junior Year

Course and No.	*Fall*	*Winter*	*Spring*
Machine Shop 431, 432, 433	10(2–18)	10(2–18)	10(2–18)
M.E. 323	3(0–6)	.....	.....
B. Adm.	.....	.....	5(5–0)
Sociology 231	.....	5(5–0)	.....
Economics 234	5(5–0)	.....	.....
Electives	3( )	3( )	.....
M.E. 327	.....	.....	3(3–0)
	21	18	18

COURSE OUTLINE

411. Machine Shop Practice. Credit 10(2–18).

Introduction to machine shop methods. A study of small precision tools and basic machine tools. Construction of small projects.

412. Machine Shop Practice. Credit 10(2–18).

The engine lathe, its operations and functions. Construction of projects requiring the use of basic machine tools.

413. Machine Shop Practice. Credit 10(2–18).

The shaper and drill press and related information. Construction of projects requiring the use of basic machine tools.

421. Machine Shop Practice. Credit 10(2–18).

The milling machine, and phases of milling machine work and related information. Construction of projects requiring the use of basic machine tools.

422. Machine Shop Practice. Credit 10(2–18).

The grinding machine and grinding in general. Construction of projects requiring the use of basic and advanced machine tools.

423. Machine Shop Practice. Credit 10(2–18).

General Machine Shop work requiring the use of all machines. Steels and other material used in machine shops.

ADVANCED COURSES

431. Machine Shop Practice. Credit 10(2–18).

Continuation of machine shop 423 and a detailed study of the heat treatment of steels.

432. Machine Shop Practice. Credit 10(2–18).

Construction of projects requiring the utmost skill, accuracy, and speed.

433. Machine Shop Practice. Credit 10(2–18).

Continuation of Machine Shop 432 and introduction to production methods as is practiced in modern industry.

MASONRY

G. L. BURGE, *Chairman*

Training Objectives

The main objective of the Masonry Department is to induce desirable young men to enter the masonry trades; bricklaying, tile setting, cement finishing and plastering, and point out to them what these trades have meant to civilization throughout the ages.

CURRICULUM

Freshman Year

Course and No.	*Fall*	*Winter*	*Spring*
Masonry 411, 412, 413	10(2–18)	10(2–18)	10(2–18)
English 211, 212, 213	5(5–0)	5(5–0)	5(5–0)
Math. 435, 436	3(3–0)	3(3–0)	.....
Phy. Ed.	1(0–2)	1(0–2)	1(0–2)
Mil. Sc. 211, 212, 213	2(2–2)	2(2–2)	2(2–2)
Electives	.....	.....	3(3–0)
	21	21	21

Sophomore Year

Course and No.	*Fall*	*Winter*	*Spring*
Masonry 421, 422, 423	10(2–18)	10(2–18)	10(2–18)
B. Adm. 330	3(3–0)	.....	.....
Acct. 304	.....	3(3–0)	.....
Mech. Drawing, M.E. 311, 312	3(0–6)	3(0–6)	.....
Sociology 231	.....	.....	5(5–0)
Materials of Cont., I.A. 324	.....	.....	3(3–0)
Mil. Sc. 221, 222, 223	2(2–2)	2(2–2)	2(2–2)
Carpentry 311, 312	3(0–6)	3(0–6)	.....
	21	21	20

ADVANCED COURSES

Junior Year

Course and No.	*Fall*	*Winter*	*Spring*
Masonry 431, 432, 433	10(2–18)	10(2–18)	10(2–18)
Voc. Drawing, I.A. 321, 322, 323	3(0–6)	3(0–6)	3(0–6)
M.E. 327	.....	.....	3(3–0)
Painting 311, 312	3(0–6)	3(0–6)	.....
Electives	3( )	3( )	3( )
	19	19	19

Suggested Electives:

Applied Drawing 437 and 438.

COURSES

First Year

411. Bricklaying. Credit 10(4–16).

Construction of walls, piers, and common bond walls.

412. Bricklaying. Credit 10(4–16).

Construction of corners and walls. Using Common and running bonds. Sills for doors and windows, setting of frames and flue construction.

413. Bricklaying. Credit 10(4–16).

Construction of buildings, blueprint reading and scaffold construction. Introduction of Flemish and English bonds.

Second Year

421. Tile and Stone Construction. Credit 10(4–16).

Hollow tile walls, hollow brick and stone piers, pilasters with battered sides and structural bond.

422. Tile and Stone Construction. Credit 10(4–16).

Construction of segmental arches, semi-circular, and flat arches.

423. Tile and Stone Construction. Credit 10(4–16).

Laying off buildings. Pattern construction, mantels and chimney construction of brick or stone, irregular corners, fireplaces and Jack arches.

ADVANCED COURSES

Third Year

431. Plastering and Cement Work. Credit 10(4–16).

Study and use of tools, putting up laths, first coat of plaster work.

432. Plastering and Cement Work. Credit 10(4–16).

Concrete mixing, outside construction of walks and piers. Finish plaster coats, paving.

433. Plastering and Concrete Work. Credit 10(4–16).

Plastering on all types of lath, cement walk construction, laying out foundation and piers from blue prints.

PAINTING AND DECORATING

F. J. PARKS, *Chairman*

Training Objectives

This course is designed to equip the individual with the art, skill and technical knowledge necessary to enter into and advance in the general house painting and decorating trades.

CURRICULUM

Freshman Year

Course and No.	*Fall*	*Winter*	*Spring*
Painting 411, 412, 413	10(2–18)	10(2–18)	10(2–18)
English 211, 212, 213	5(5–0)	5(5–0)	5(5–0)
Phy. Ed.	1(0–2)	1(0–2)	1(0–2)
Mil. Sc.	2(2–2)	2(2–2)	2(2–2)
Math. 435, 436	3(3–0)	3(3–0)	.....
Electives, related trade	.....	.....	3(0–6)
	21	21	21

Sophomore Year

Course and No.	*Fall*	*Winter*	*Spring*
Painting 421, 422, 423	10(2–18)	10(2–18)	10(2–18)
Mech. Drawing 311, 312	3(0–6)	3(0–6)	.....
Mil. Sc.	2(2–2)	2(2–2)	2(2–2)
Phy. Ed.	1(0–2)	1(0–2)	1(0–2)
Materials of Const.	.....	.....	3(3–0)
B. Adm. 330	3(3–0)	.....	.....
Acct. 304	.....	3(3–0)	.....
Carpentry 311	.....	.....	3(0–6)
Electives	2( )	2( )	2( )
	21	21	21

Suggested Electives:

Applied Drawing 437 and 438.

ADVANCED COURSES

Junior Year

Course and No.	*Fall*	*Winter*	*Spring*
Painting 431, 432, 433	10(2–18)	10(2–18)	10(2–18)
Sociology 231	.....	.....	5(5–0)
Masonry 311	3(0–6)	.....	.....
Art 311, 312	3(0–6)	3(0–6)	.....
Com. Ed. 317, 318	2(0–5)	2(0–5)	.....
Contracts and Spec., M.E. 327	.....	.....	3(3–0)
Cabinet Making 311, 312	3(0–6)	3(0–6)	.....
Electives	.....	3(3–0)	3(3–0)
	21	21	21

COURSES

411. Exterior Painting. Credit 10(2–18).

Methods of exterior house painting. Use and care of tools, equipment and materials used in the trade; types of surfaces, preparation of surfaces; preparing, mixing, and application of the various types of exterior paintings. Defects or failures of paints and their remedies, glazing, health, and safety factors.

412. Interior Painting. Credit 10(2–18).

Theory and practice of interior house painting. Study of colors, color harmony, mixing and matching of colors. Types of interior paints, their composition, characteristics, and properties, surfaces suitable for their use. Tools, materials and equipment.

413. Paperhanging. Credit 10(2–18).

Fundamentals of hanging paper and other wall coverings. Surface preparation, tools and equipment, mixing sizes and paste, table work, and hanging the paper and other wall coverings.

421. Spray Painting and Advanced Interior Painting. Credit 10(2–18).

Operating and caring for spray equipment. Types of spray guns, materials suitable for spray applications. Further theory and practice in interior house painting.

422. Decorative Finishes. Credit 10(2–18).

Fine points and decorative finishes. Study of color; color combinations, the Munsell color system, color mixing and matching, the psychology of color, effects of color and styling with colors. Glazing, antiquing, stippling, stenciling, gilding, marbelizing, graining and wood finishing.

423. Estimating and Job Management. Credit 10(2–18).

Methods of estimating the materials, working hours, and cost for doing a job. Supervising or managing the job.

ADVANCED COURSES

431. Painting. Credit 10(2–18).

Advanced experience in the techniques of interior and exterior painting and decorating. Full information of use and application of all the new materials, tools and equipment.

432. Painting. Credit 10(2–18).

Advanced work with fabrics of wall coverings, scenics and other expensive wall coverings. Decorating with these materials will also be covered thoroughly.

433. Painting. Credit 10(2–18).

Advanced work in decorative finishes. Detail work with colors and elements of interior decorating.

PHOTOGRAPHY

L. H. HARDY, *Chairman*

Training Objectives

This course offers practical training in the field of Commercial and Portrait Photography. Training is in all phases of photography, progressing from the basic principles covering the camera and its operation, photographic optics, lenses, shutters, emulsions, daylight and artificial lighting, composition, photographic chemistry, filters and their uses, contact and projection control, toning and negative retouching. Classes are limited in size to permit more individual attention.

CURRICULUM

Freshman Year

Course and No.	*Fall*	*Winter*	*Spring*
Photography 411, 412, 413	10(2–18)	10(2–18)	10(2–18)
English 211, 212, 213	5(5–0)	5(5–0)	5(5–0)
Math. 435, 436 or 311, 312	3(3–0)	3(3–0)	.....
Phy. Ed.	1(0–2)	1(0–2)	1(0–2)
Mil. Sc. 211, 212, 213	2(2–2)	2(2–2)	2(2–2)
Art 311	.....	.....	3(0–6)
	21	21	21

Sophomore Year

Course and No.	*Fall*	*Winter*	*Spring*
Photography 421, 422, 423	10(2–18)	10(2–18)	10(2–18)
English 224	.....	3(3–0)	.....
B. Adm. 330	3(3–0)	.....	.....
Acct. 304	.....	3(3–0)	.....
Art 312, 313	3(0–6)	.....	3(0–6)
Mil. Sc. 221, 222, 223	2(2–2)	2(2–2)	2(2–2)
Sociology 231	.....	.....	5(5–0)
Phy. Ed.	1(0–2)	1(0–2)	1(0–2)
Electives	2( )	2( )	.....
	21	21	21

COURSES

411. Basic Fundamentals. Credit 10(4–16).

Speed Graphic Camera, Commercial View Cameras and Commercial Film. Choice of lenses and shutters, depth of field and hyperfocal distance. Negative processing methods and contact printing.

412. Synchroflash Photography, Filters and Photographic. Credit 10(4–16).

Study and work with multiple flash, surface reflection problems. Enlarging technique. Filters and their use. General laboratory technique and progress assignment.

413. Light Control and View Camera Techniques. Credit 10(4–16).

Basic portraiture lighting, artificial and natural. Illumination and its control along with composition and the view camera, and negative retouching.

421. Portrait Photography and Negative Retouching. Credit 10(4–16).

Modern portraiture in the portrait studio, view cameras, practical optics, basic posing and directing, portrait lighting, enlarging techniques, group portraiture negative retouching.

422. Illustrative and Publicity Photography. Credit 10(4–16).

Assignments in press, advertising and publicity photograph, etching, spotting, mounting and print finishing, materials and equipment.

423. Advanced Technique. Credit 10(4–16).

Special background and photomontage work, coloring with oil, electronic flash, bridal photographs, equipping the studio and studio management.

PLUMBING AND STEAMFITTING

J. H. MYERS, *Chairman*

Objectives

The course is designed to prepare skilled mechanics in the field of plumbing and steamfitting. In addition to courses listed, the department reserves the right to require trainees to spend at least one summer on grounds for practical work, unless they can furnish satisfactory evidence that they have had adequate practical experience in their trade.

CURRICULUM

Freshman Year

Course and No.	*Fall*	*Winter*	*Spring*
Plumbing 411, 412, 413	10(2–18)	10(2–18)	10(2–18)
English 211, 212	5(5–0)	5(5–0)	.....
Math. 435, 436 or 311, 312	.....	3(3–0)	3(3–0)
Phy. Ed.	1(0–2)	1(0–2)	1(0–2)
Mil. Sc. 211, 212, 213	2(2–2)	2(2–2)	2(2–2)
Air Cond.-Refrig.	3(0–6)	.....	.....
Phy. Ed.	.....	.....	1(0–2)
	21	21	22

Sophomore Year

Course and No.	*Fall*	*Winter*	*Spring*
B. Adm. 421, 422, 423	10(2–18)	10(2–18)	10(2–18)
B. Adm. 330	3(3–0)	.....	.....
Acct. 304	.....	3(3–0)	.....
Mech. Drawing 311, 312	3(0–6)	3(0–6)	.....
Mil. Sc. 221, 222, 223	2(2–2)	2(2–2)	2(2–2)
Physics 311	.....	.....	5(3–4)
Phy. Ed.	1(0–2)	.....	1(0–2)
Sheet Metal	.....	3(0–6)	3(0–6)
	19	21	21

ADVANCED COURSES

Junior Year

Course and No.	*Fall*	*Winter*	*Spring*
Plumbing 431, 432, 433	10(2–18)	10(2–18)	10(2–18)
Welding 311, 312, 313	3(0–6)	3(0–6)	3(0–6)
M.E. 327	.....	.....	3(3–0)
Carpentry 311, 312	3(0–6)	3(0–6)	.....
Electives	3( )	3( )	3( )
	19	19	19

COURSES

First Year

411. Care and Use of Tools. Credit 10(4–16).

History of Plumbing: Duties and responsibilities of a plumber. Cutting, threading, reaming, and simple fittings. Study of plumbing material. Practical applications.

412. Drainage and Vent Pipe Installations. Credit 10(4–16).

Drainage pipe arrangements. Supports and connections between pipes. Applications, sewage disposal. Prerequisite: Plumbing 411.

413. Traps in Drainage Systems. Credit 10(4–16).

Installation of traps and branch connections. Minor repairs. Prerequisite: Plumbing 412.

Second Year

421. Plumbing Laws and Regulations. Credit 10(4–16).

Wiping joint, soldering and lead work. Blueprint reading. Prerequisite: Plumbing 413.

422. Water Supply. Credit 10(4–16).

Cold and hot water. Water treatment method and purification. Prerequisite: Plumbing 421.

423. Estimating and Installation. Credit 10(4–16).

Determining the cost of labor and materials for various installations.

ADVANCED COURSES

Third Year

431. Steam and Hot Water. Credit 10(4–16).

The various heating systems. Tools and equipment used in steamfitting. Mechanical equipment of buildings. Prerequisite: Plumbing 423.

432. Steam and Hot Water. Credit 10(4–16).

Continuation of 431. Prerequisite: Plumbing 431.

433. Copper Tubing and Fittings. Credit 10(4–16).

Study and use of copper fittings. Soldering and lead work. Applications.

RADIO REPAIR AND BASIC TELEVISION

C. MANUEL, *Chairman*

Training Objective

The aim of this course is to train servicemen and technicians in radio and television servicing. Emphasis is placed on acquiring a thorough knowledge of basic electrical theory. This course is designed to equip the student with skills and technical knowledge for positions in industry or for operating private business. Beginners are required to complete the radio courses before entering the advanced courses in television.

CURRICULUM

Freshman Year

Course and No.	*Fall*	*Winter*	*Spring*
Radio 411, 412, 413	10(5–15)	10(5–15)	10(5–15)
English 211, 212	5(5–0)	5(5–0)	.....
Math. 311, 312	.....	5(5–0)	5(5–0)
Phy. Ed.	1(0–2)	.....	1(0–2)
Mil. Sc. 211, 212, 213	2(2–2)	2(2–2)	2(2–2)
M.E. 311, 312	3(0–6)	.....	3(0–6)
	21	22	21

Sophomore Year

Course and No.	*Fall*	*Winter*	*Spring*
Radio 421, 422, 423	10(5–15)	10(5–15)	10(5–15)
B. Adm. 330	3(3–0)	.....	.....
Acct. 304	.....	3(3–0)	.....
Physics 311, 312	5(5–0)	5(5–0)	.....
Sociology	.....	.....	5(5–0)
Mil. Sc.	2(2–2)	2(2–2)	2(2–2)
Phy. Ed.	1(0–2)	1(0–2)	2(0–4)
	21	21	19

ADVANCED TELEVISION

Junior Year

Course and No.	*Fall*	*Winter*	*Spring*
T. V. 431, 432, 433	10(5–15)	10(5–15)	10(5–15)
Math. 313	.....	.....	5(5–0)
B.A. 331, 332	5(5–0)	5(5–0)	.....
	15	15	15

COURSE OUTLINE

411. Alternating and Direct Currents. Credit 10(4–16).

For direct current a careful study is made of the theory and operation of primary and secondary batteries, Ohm's Laws, Kirchnoff's Laws, series and parallel resistance. In alternating, a special study is given in impedance, admittance, susceptance, series and parallel circuits, transformers, alternators, motors, rectifiers and filters. A special study is also given to permanent and electro-magnetism.

412. Vacuum Tube Characteristics. Credit 10(4–16).

A study of the theory and emission of electrons which includes the characteristics and functions of the following tubes: Diode, Triode, Tetrode, Pentode, Beampower, and Cathode-Ray.

413. Radio Circuits. Credit 10(4–16).

Study of the tuned radio frequency receiver and also the superheterodyne receivers, circuits of A.C., A.C.-D.C.

421. Fundamentals of Electronic Television. Credit 10(4–16).

The basic fundamentals of the television system in the past, present and future. The construction and operation of the station and receiver are covered.

422. Installation and Servicing of Television Receivers. Credit 10(4–16).

The problems in installation and servicing of the television receiver in the home, test patern analysis, checking and adjusting the receiver and use of trouble-shooting charts are taught and the use of basic test equipment.

423. Television Antenna Systems and Methods of Trouble Shooting Receivers. Credit 10(4–16).

Special problems encountered in the installation of receiving antennas and advance methods of troubleshooting receivers is covered during this quarter.

ADVANCED TELEVISION

431. Shop Techniques. Credit 10(4–16).

A study is made of inventories, customer relations and how to manage a service business are taught.

432. Advance Technique. Credit 10(4–16).

A study of High Fidelity and Electronic recording equipment. Faster and more advanced methods of analysis of problems encountered in Radio and TV.

433. Special Problems. Credit 10(4–16).

Special problems in service, such as U. H. F., color, antenna installation and many other problems, a study is made of employment trends and the student is aided in obtaining employment.

SHEET METAL AND ROOFING

D. M. BRADLEY, *Chairman*

Training Objectives

This course is designed to provide technical information necessary, along with practical work, to give the student a thorough knowledge of the work and well-rounded experience in the field of Sheet Metal and Roofing.

CURRICULUM

Freshman Year

Course and No.	*Fall*	*Winter*	*Spring*
Sheet Metal 411, 412, 413	10(2–18)	10(2–18)	10(2–18)
English 211, 212, 213	5(5–0)	5(5–0)	5(5–0)
Math. 435, 436 or 311, 312	3(3–0)	3(3–0)	.....
Phy. Ed.	1(0–2)	1(0–2)	1(0–2)
Mil. Sc. 211, 212, 213	2(2–2)	2(2–2)	2(2–2)
Electives	.....	.....	3( )
	21	21	21

Sophomore Year

	Fall	*Winter*	*Spring*
Sheet Metal 421, 422, 423	10(2–18)	10(2–18)	10(2–18)
B. Adm. 330	3(3–0)	.....	.....
Acct. 304	.....	3(3–0)	.....
Mech. Drawing 311, 312	3(0–6)	3(0–6)	.....
Sociology 231	.....	.....	5(5–0)
Materials of Cont., I.A. 324	.....	.....	3(3–0)
Mil. Sc. 221, 222, 223	2(2–2)	2(2–2)	2(2–2)
Electives	3( )	3( )	.....
	21	21	20

COURSES

411. Basic Sheet Metal. Credit 10(2–18).

The use and care of tools and machines, processes relating to shop jobs, with emphasis placed on work with hand tools.

412. Line Development and Intersections. Credit 10(2–18).

Construction methods used in fabricating sheet metal jobs, with emphasis on machines and sheet metal layouts.

413. General Sheet Metal. Credit 10(2–18).

Knowledge of skills relative to sheet metal tools, machines, operation and materials, units of work involving sheet metal jobs that are appropriate for general practice.

421. Round Pipe Work. Credit 10(2–18).

Layout and fabrication of various degrees, elbows of any number of pieces and of both regular and irregular shapes, practices in the installation of pipe and pipeless furnaces, and a study of the general requirements for designs, installations, estimating and fittings.

422. Advanced Sheet Metal Work. Credit 10(2–18).

Development of moldings, face miters, return miters, conductor heads, metal clad work, the theory and construction of a flat lock and standing seam and batten seam roofing guttering.

423. Advanced Sheet Metal Work. Credit 10(2–18).

Practical design and shortened methods for laying out and fabricating ducts and fittings used in air conditioning, heating and ventilating, industrial sheet metal and blowpipe work.

SHOE REPAIRING AND LEATHER WORK

C. DEHUGULEY, *Chairman*

Training Objectives

To give the student a practical knowledge of the subject matter as well as the necessary training in the related subjects to permit both the operation and maintenance of a shoe repairing and leather work shop, and as skilled workers in the trade.

CURRICULUM

Freshman Year

Course and No.	*Fall*	*Winter*	*Spring*
Shoe Repairing 411, 412, 413	10(2–18)	10(2–18)	10(2–18)
English 211, 212, 213	5(5–0)	5(5–0)	5(5–0)
Math. 435, 436	3(3–0)	3(3–0)	.....
Machine Shop 311	.....	.....	3(0–6)
Mil. Sc. 211, 212, 213	2(2–2)	2(2–2)	2(2–2)
Phy. Ed.	1(0–2)	1(0–2)	1(0–2)
	21	21	21

Sophomore Year

Course and No.	*Fall*	*Winter*	*Spring*
Shoe Repairing 421, 422, 423	10(2–18)	10(2–18)	10(2–18)
B. Adm. 330	3(3–0)	.....	.....
Acct. 304	.....	3(3–0)	.....
Sociology 231	.....	.....	5(5–0)
M.E. 311, 312	3(0–6)	3(0–6)	.....
English 224	.....	.....	3(3–0)
Mil. Sc.	2(2–2)	2(2–2)	2(2–2)
Phy. Ed.	1(0–2)	1(0–2)	1(0–2)
Electives	2( )	2( )	2( )
	21	21	21

ADVANCED COURSES

Junior Year

Course and No.	*Fall*	*Winter*	*Spring*
Shoe Repairing 431, 432, 433	10(2–18)	10(2–18)	10(2–18)
B. Adm. 337	5(5–0)	.....	.....
Machine Shop 312	3(0–6)	.....	.....
Chem. 111	.....	5(3–4)	.....
Dry Cleaning 311	.....	3(0–6)	.....
Economics 234	.....	.....	5(5–0)
Elective	.....	.....	3( )
	18	18	18

COURSES

411. Threads and Hand Tools. Credit 10(4–16).

Study of threads, making waxed ends. Making various stitches used in hand sewing. Care and use of hand tools.

412. Construction. Credit 10(4–16).

The methods of fastening the parts of shoes together. Construction of shoes. Tempering and preparing leather for soles, cutting off old soles, skiving shanks and preparing shoes for half soles and heels.

413. Processing. Credit 10(4–16).

Inks, waxes, cement and nails are studied. Cutting sole leather, fitting soles and heels for nailing, putting lifts on wood heels, inking, burnishing and finishing shoes on power machines. Care, operation and use of the patching machine is studied, rip sewing and upper patching.

421. Bench Work. Credit 10(4–16).

Fitting half soles and heels on men's welted shoes. Putting top lifts and half soles on women's welted shoes. Putting new bottoms on men's and women's shoes. Care and use of the buffer and burnishing wheels of finishing machines. Sewing of welts, cutting of inner soles and attaching wood heels.

422. Machine Operation. Credit 10(4–16).

Attaching wood heels on women's shoes, study and operation of the sole cementing process, care and operation of the edge trimmer and setter, sharpening edge cutters, manipulation and care of the power stitcher, stitching soles on curved needle stitchers, operating auto soler and the mechanics of shoe machines.

423. Finishing and Shop Management. Credit 10(4–16).

Problems pertaining to highclass repair work, changing suede shoes to glazed finish, dyeing shoes pastel shades and the reglazed process of changing colors, problems and methods of buying materials, the operation and business methods of the modern commercial shop.

ADVANCED COURSES

431. Machine Maintenance. Credit 10(2–18).

Study of the operation and maintenance of all shoe repair machines. Laboratory work will be on the disassembly and reassembly of stitcher, finisher, patching machine, cement press, auto soler and all of the bench machines.

432. Restyling and Refinishing. Credit 10(2–18).

Study of the procedures and techniques of restyling and refinishing as they apply to women and men shoes. Leather jackets and leather bags.

433. Leather Dyeing. Credit 10(2–18).

Study of the procedures and techniques of leather dyeing as they apply to smooth leather, suede, buck, gabardine and synthetic fabrics, reptile and alligator and metallic finishes.

TAILORING

E. HARGROVE, *Chairman*

Objectives

To effectively provide training in the various activities relating to the tailoring field. These areas are busheling, repairs, garment construction, and clothing design.

To develop through various methods, skilled craftsmen who may gainfully engage in any phase of the tailoring craft.

To maintain high standards of efficiency in training so that graduates of this course may qualify as shop owners, operators, or skilled mechanics in the field.

CURRICULUM

Freshman Year

Course and No.	*Fall*	*Winter*	*Spring*
Tailoring 411, 412, 413	10(2–18)	10(2–18)	10(2–18)
English 211, 212, 213	5(5–0)	5(5–0)	5(5–0)
Math. 435, 436	3(3–0)	3(3–0)	.....
Dry Cleaning 311	.....	.....	3(0–6)
Phy. Ed.	1(0–2)	1(0–2)	1(0–2)
Mil. Sc. 211, 212, 213	2(2–2)	2(2–2)	2(2–2)
	21	21	21

Sophomore Year

Course and No.	*Fall*	*Winter*	*Spring*
Tailoring 421, 422, 423	10(2–18)	10(2–18)	10(2–18)
B. Adm. 330	3(3–0)	.....	.....
Sociology 231	.....	.....	5(5–0)
Drafting 421a, 422a, 423a	3(0–6)	3(0–6)	3(0–6)
Acct. 304	.....	3(3–0)	.....
Mil. Sc.	2(2–2)	2(2–2)	2(2–2)
Dry Cleaning 312	3(0–6)	.....	.....
Elective	.....	3( )	.....
	21	21	20

ADVANCED COURSES

Junior Year

Course and No.	*Fall*	*Winter*	*Spring*
Tailoring 431, 432, 433	10(2–18)	10(2–18)	10(2–18)
Drafting 431a, 432a, 433a	3(0–6)	3(0–6)	3(0–6)
Dry Cleaning 313	.....	3(3–6)	.....
Art 311, 313	3(0–6)	.....	3(0–6)
Phy. Ed. 234, elect	5(5–0)	.....	.....
Electives	.....	3(0–6)	3(0–6)
	21	19	19

411. Basic Fundamentals. Credit 10(2–18).

Basic skills in hand stitches, power machine operations, care and use of tools, pocket making and introduction to skirt and trouser drafting and making.

412. Trouser Making and Alterations. Credit 10(2–18).

Techniques in drafting, fitting, trimming and making skirts and trousers. A study is made of various woolen fabrics used by tailors.

413. Advanced Trouser Making—Introduction to Vest Making. Credit 10(2–18).

Various types of trousers. Introduction to vest drafting and making.

421. Vest Construction and Introduction to Coat Making. Credit 10(2–18).

Construction of the various types of vests. Coat drafting and pocket making are included.

422. Coat Making. Credit 10(2–18).

Methods and techniques of coat making, layouts, cutting, trimming and construction.

423. Suit Making and Lay-out Techniques. Credit 10(2–18).

Continuation of coat making, coat try-on, shop management and salesmanship.

ADVANCED COURSES

431. Suit Making and Layout Techniques. Credit 10(2–18).

Continuation of coat making with emphasis on conserving materials, trimmings.

432. Overcoat Making. Credit 10(2–18).

This course will be a study of the various methods and latest styles in construction of overcoats and topcoats.

433. Special Coats and Other Outer Garments. Credit 10(2–18).

This course will deal especially with production problems in special or unusual coats and other outer garments. The construction of extremely large and small sized garments will be done.

REFRIGERATION AND AIR CONDITIONING

S. W. FOSTER, *Instructor*

Training Objectives:

The purpose of this course is to train students to service and repair domestic refrigerators, deep freezers, small room air conditioners and commercial units. The training consists of technical information, shop practice and practical projects in refrigeration.

CURRICULUM

Freshman Year

Course and No.	*Fall*	*Winter*	*Spring*
Refrigeration 411, 412, 413	10(4–16)	10(4–16)	10(4–16)
Math. 435, 436	3(3–0)	3(3–0)	.....
English 211	.....	.....	5(5–0)
Physical Education	1(0–2)	2(0–4)	1(0–2)
Military Science	2(2–2)	2(2–2)	2(2–2)
Electric Wiring	3(0–6)	.....	.....
Plumbing	.....	3(0–6)	.....
Sheet Metal	.....	.....	3(0–6)
	19	20	21

Sophomore Year

Course and No.	*Fall*	*Winter*	*Spring*
Refrigeration 421, 422, 423	10(4–16)	10(4–16)	10(4–16)
English 212	5(5–0)	.....	.....
Physical Education	1(0–2)	1(0–2)	1(0–2)
M.E. 311, 312	.....	3(0–6)	3(0–6)
Military Science	2(2–2)	2(2–2)	2(2–2)
Bus. Adm. 330	3(3–0)	.....	.....
Acct. 304	.....	3(3–0)	.....
Economics 234	.....	.....	5(5–0)
	21	19	21

411. Refrigeration. Credit 10(4–16).

Basic principles of refrigeration and electricity.

412. Refrigeration. Credit 10(4–16).

Refrigeration cycles, repairs and adjustments of component parts of refrigeration systems.

413. Refrigeration. Credit 10(4–16).

Domestic refrigerator, types of refrigerants, heat exchanges, oil separators, AC motors, peculiarities of sealed units, refrigerant charging and discharging, and general overhauling.

421. Refrigeration. Credit 10(4–16).

Commercial refrigeration, regulation and codes. Regular service calls are made to provide practical experience and customer relationship.

422. Refrigeration. Credit 10(4–16).

Commercial refrigeration equipment, calculations of heat loads.

423. Refrigeration. Credit 10(4–16).

Continuation of 422 with emphasis on Air Conditioning and special equipment.

WELDING

R. P. WILLIAMS, *Instructor*

Training Objectives

This is a carefully organized course designed to prepare young men and women to become skilled Electric Arc Welders. The practical side of the course has been so emphasized that upon completion of the trade, students will be qualified to become owners or managers in Electric Arc Welding business as well as skilled mechanics in industry.

CURRICULUM

Freshman Year

Course and No.	*Fall*	*Winter*	*Spring*
Welding 411, 412, 413	10(2–18)	10(2–18)	10(2–18)
English 211, 212, 213	5(5–0)	5(5–0)	5(5–0)
Math. 435, 436	3(3–0)	3(3–0)	.....
Phy. Ed.	1(0–2)	1(0–2)	1(0–2)
Mil. Sc. 211, 212, 213	2(2–2)	2(2–2)	2(2–2)
Electives	.....	.....	3(3–0)
	21	21	21

Sophomore Year

Course and No.	*Fall*	*Winter*	*Spring*
Welding 421, 422, 423	10(2–18)	10(2–18)	10(2–18)
Applied Drawing 411, 412	3(0–6)	3(0–6)	.....
Machine Shop 311, 312	3(0–6)	3(0–6)	.....
Electric Wiring 326	.....	2(0–4)	.....
Mil. Sc. 221, 222, 223	2(2–2)	2(2–2)	2(2–2)
B. Adm. 330	3(3–0)	.....	.....
Material of Cont., I.A. 324	.....	.....	3(3–0)
Sociology 231	.....	.....	5(5–0)
	21	20	20

COURSES

411. Welding. Credit 10(4–16).

Electric arc welding. Care and operation of welding machines. A study of various welding rods and their uses. Current ratings for different kinds of welding. Practice in running beads and preparing work for welding.

412. Welding. Credit 10(4–16).

Horizontal and vertical joints. Practice in laying continuous beads with different types of rods. Practice in welding butt and lap joints.

413. Welding. Credit 10(4–16).

Vertical and Overhead joints. Practice in laying vertical and overhead beads. Intensive practice in selection of right type of rod for material use. Preparation to pass the American Welders Society Guide Bend Test.

421. Welding. Credit 10(4–16).

Oxy-Acetylene welding practice on various joints in all positions. Care and adjusting of equipment. Cutting and brazing on light and heavy work. Welding and brazing of different types of metals. Practicing Butt Joints in all Positions and Testing.

422. Welding. Credit 10(2–10).

Continuation of Oxy-Acetylene Welding using various rods as cast iron, aluminum, etc., and brazing. Also continuous practicing in electric arc welding.

423. Welding. Credit 10(2–18).

Practical work in preparing joints and welding in repairs, etc. Also practice in metal fibration and practice with inert gas-shielded metal arc welding process.

RELATED TECHNICAL COURSES

Applied Drawing

437. Applied Drawing. Credit 3(0–6).

Lettering, care and use of drawing instruments, principles of projection drafting room standard and conventions, working drawings suitable for the trade taken by a student.

438. Applied Drawing. Credit 3(0–6).

Layout of plans and elevations including detail drawing and presentation drawings of projects or buildings that would be constructed by the trademan taking the course.

435. Applied Math. Credit 3(3–0).

This course consists of application of mathematics to practical problems that may arise in the field and shop. It helps the students to apply their mathematics to everyday problems.

436. Applied Math. Credit 3(3–0).

Continuation of 435 with emphasis placed on problems in respective fields. Prerequisite: 435.

DRIVER EDUCATION

ISAAC BARNETT, *Instructor*

311. Driver Education. Credit 3(2–3).

Designed to teach traffic safety and automobile operations to beginning drivers, common practices of safe driving, the essential knowledge of automobile operations and directed driving.

312. Driver Education. Credit 3(2–3).

This course is designed to give students who have state driver's license the necessary training and practice to become professional driver teachers.

NOTE: This course is approved by the American Automobile Association.

ELECTIVE INDUSTRIAL EDUCATION COURSES

These courses are designed for those students pursuing the regular college courses, and yet desiring some training in vocational fields. The students are given thorough drilling and are required to attain a knowledge of the subject matter. The courses are offered on the college level and regular college credit is allowed.

311. Auto Mechanics. Credit 3(0–6).

Construction and operation of power systems. Fuel and cooling systems. Lubrication, washing and polishing. Repairs of tires.

312. Auto Mechanics. Credit 3(0–6).

Study of ignition system, wiring and lighting system, batteries and their care, starter and generators.

313. Auto Mechanics. Credit 3(0–6).

Minor repairs to safety devices. Brake adjustments.

311. Cabinet Making. Credit 3(0–6).

Care and use of hand tools, wood turning, pattern making, or work to suit individual interest.

312. Cabinet Making. Credit 3(0–6).

Care and use of power tools. Built-in cabinet. Small projects as desk, bookcases or useful projects for the home.

313. Cabinet Making. Credit 3(0–6).

Inside trim. Varieties and characteristics of timber used in projects. Applying hardware, application of stain, varnish, shellac and enamel.

314. Cabinet Making. Credit 3(0–6).

General building and repair work in furniture and cabinet construction. Prerequisite: I.A. 323.

311. Carpentry. Credit 3(0–6).

Study and use of hand tools. Types of joints used in construction. General framing and bracing.

312. Carpentry. Credit 3(0–6).

Blueprint reading and estimating of qualities. General construction of small projects of roof covering.

313. Carpentry. Credit 3(0–6).

Stair building. General roof construction. Flooring. Experience on practical building.

314. Carpentry. Credit 3(0–6).

General building and repair work in carpentry. Prerequisite: I.A. 323 or the equivalent.

421a. Drafting. Credit 3(0–6).

This initial course in drafting will be concerned with acquainting the student with the drafting tools, body proportions, and measures necessary to draft trousers. The drafting of trouser foreparts will complete this phase of the work.

422a. Drafting. Credit 3(0–6).

This is a continuation of 421a with the backpart of trousers to be completed. Methods for embellishments and various styles of trousers will be studied.

423a. Drafting. Credit 3(0–6).

This course will deal with various methods of drafting non-proportionate deviates, and abnormal sized trousers. Skirt drafting will also be studied.

431a. Drafting. Credit 3(0–6).

This course will include measures and body proportions necessary to draft vests and waistcoats. A study will be made of the relation of material requirements to the sizes of patterns drafted.

432a. Drafting. Credit 3(0–6).

This course will introduce the measures and body proportions necessary to draft coats. Various types of coat fronts will be drafted.

433a. Drafting. Credit 3(0–6).

This course is a continuation of 432a with the emphasis on collars and sleeves. Overcoats will be included at the completion of the previous work.

311. Dry Cleaning. Credit 3(0–6).

A study of steps necessary to complete a cleaning job. Methods of marking and assembling clothes. Some cleaning room practice.

312. Dry Cleaning. Credit 3(0–6).

A study of finishing room tactics. Actually finishing silk and wool garments.

313. Dry Cleaning. Credit 3(0–6).

General theory on dry cleaning operations. Plant Management.

314. Dry Cleaning. Credit 3(0–6).

(Hat Blocking). Methods of cleaning and blocking ladies' and men's hats.

311. Electric Wiring. Credit 3(0–6).

This course covers the fundamental principles of two and three wire circuits for light and power.

312. Electric Wiring. Credit 3(0–6).

Study of and use of electrical wiring material.

313. Electric Wiring. Credit 3(0–6).

Study of the electrical code.

311. Laundry Management. Credit 3(0–6).

Assorting, classifying and loading of washers and extractors. Theory and practice.

312. Laundry Management. Credit 3(0–6).

Receiving, marking and inspection of garments.

313. Laundry Management. Credit 3(0–6).

Finishing, hand and machine care and maintenance of equipment.

311a. Leather Craft. Credit 3(0–6).

An introduction to the fundamentals of leather craft. Possibilities and limitations of various tools are developed so that the student will have a basic perspective of modern efficient procedures. The characteristics of different materials are covered as well as their adaptability to the various processes.

312a. Leather Craft. Credit 3(0–6).

Prerequisite: Leather Craft 311a. A continuation of leather craft 311a. The laboratory work covers designs, preparing leather for modeling, methods of decorating leather, methods of assembling, dyeing, lacing, finishing, and attaching snap fasteners and key plates.

311. Machine Shop Practice. Credit 3(0–6).

A general introduction to machine shop methods. A study of small precision tools, lathes, shapers and drill presses. A study of the different types of steels and other metals used in machine shop. Construction of small projects.

312. Machine Shop Practice. Credit 3(0–6).

A study and use of milling machines, turret lathes, grinders, and special machines. Construction of small projects requiring the use of each. Prerequisite: Machine Shop 311.

313. Machine Shop Practice. Credit 3(0–6).

Continuation of machine shop 312. The construction of some project requiring the use of all machines in the shop. Prerequisite: Machine Shop 311 and 312.

311. Masonry. Credit 3(0–6).

Types of brick and their use in construction. Mortar mixing, thickness of joints, tools and practice work.

312. Masonry. Credit 3(0–6).

Study of mortar, bonds, joints, pointing up. Practice work.

313. Masonry. Credit 3(0–6).

Estimating, arches, lintels, chimneys and fireplaces. Practical jobs.

311. Painting and Decorating. Credit 3(0–6).

A course designed to give a technical knowledge of colors and their uses. Mixing and matching colors, color psychology, color schemes and color harmony will be included in this course.

312. Painting and Decorating. Credit 3(0–6).

A course designed to give the student a knowledge of general painting done around the home. A study will be made of the types of materials and paints used as well as coating small areas and articles found around the home.

313. Painting and Decorating. Credit 3(0–6).

A study of interior finishes and their uses. The course includes a study of wall papers, fabrics, veneers, wall-tex, canvas, muslins and other wall coverings.

311. Photography. Credit 3(0–6).

Small camera operation and roll film development. This course will enable the beginner to understand the operation and techniques used in making good pictures with small cameras. Types of film used in small cameras and their development.

312. Photography. Credit 3(0–6).

Contact and Projection Printing. Students completing photography 311 will be given training in contact and projection printing and various finishing methods.

313. Photography. Credit 3(0–6).

Composition with the small camera. Course is designed to train the beginner how to make good photographs both indoors and outdoors with natural and artificial lighting. Common errors and means of correcting them.

311. Plumbing. Credit 3(0–6).

Care and use of tools: History of plumbing: Duties and responsibilities of a plumber. Cutting, threading, reaming, and simple fittings. Study of plumbing material.

312. Plumbing. Credit 3(0–6).

Drainage and vent pipe installation: Drainage pipe arrangements. Supports and connections between pipes. Sewage disposal. Prerequisite: Plumbing 411.

313. Plumbing. Credit 3(0–6).

Installation of traps and branch connections. Minor repairs. Prerequisite: Plumbing 412.

311. Radio. Credit 3(0–6).

This course consists of Ohm's and Kirchoff's Laws, study of radio symbols and schematic diagrams, voltmeters, ohmmeters, current and voltage measurements, radio principles, continuity checks, and fundamental shop techniques.

312. Radio. Credit 3(0–6).

This is a continuation of 311 with emphasis on the function of capacitors and inductors in A.C. and D.C. circuits, diagram studies of the superheterodyne receiver.

313. Radio. Credit 3(0–6).

Vacuum tube characteristics. Piezo-electric effect, phonograph pick-ups and amplifiers, vibrator power supplies, and servicing of automobile receivers.

311. Refrigeration and Air Conditioning. Credit 3(0–6).

Study of the fundamentals of refrigeration, correct use of tools and shop equipment, purpose and construction of refrigeration units and their controls.

312. Refrigeration and Air Conditioning. Credit 3(0–6).

Basic electricity that pertains to refrigeration, electric motors and their controls, refrigerants and their requirements, and types of compression systems.

313. Refrigeration and Air Conditioning. Credit 3(0–6).

The application and servicing of the different types of refrigeration systems.

311. Sheet Metal. Credit 3(0–6).

A study of the use and care of tools and machines; shop projects with emphasis placed on work with hand tools; a study of the history and development of metals and present day uses.

312. Sheet Metal. Credit 3(0–6).

Emphasis will be placed on general sheet metal including construction methods, bumping and raising metals. Drafting of individual projects will be stressed.

311. Shoe Repairing. Credit 3(0–6).

The study of threads, making waxed ends and twisting bristles on ends. Stitches used in hand sewing. Care and use of hand tools for leather work.

312. Shoe Repairing. Credit 3(0–6).

Construction. Methods of fastening parts of shoes together. Tempering and preparing leather for soles. Preparing shoes for half soles and heels. Ink dyes, cement and nails are studied. Bench work.

313. Shoe Repairing. Credit 3(0–6).

Machine operation. Care and use of power stitcher. Cement process. Sewing of welts and cutting. Curved and straight needle stitchers. Finishing. Changing of color.

311. Tailoring. Credit 3(0–6).

This course is a study of the use of simple sewing equipment. Practice in simple hand stitches such as felling, darning, back stitching and others which may be utilized in doing simple repairs.

312. Handstitches Continued. Credit 3(0–6).

This course is a study of materials, their characteristics, differences, and similarities. A study of the various masculine garments and their construction. A survey of formal wear, types, seasonal use, color, dynamics, and combinations.

313. Tailoring. Credit 3(0–6).

This course is a study of style trends, machine maintenance and operation, practice sewing, and simple repairs. A study of buttons and threads.

311. Upholstering. Credit 3(0–6).

Instruction is given in the care and use of upholstery tools, kinds of upholstery supplies and wood finishes. Projects are assigned in the construction of pads and edge rolls and cutting plans for economical cutting and yardage estimates.

312. Upholstering. Credit 3(0–6).

This course deals with webbing, springs and spring edges. Practical projects are assigned in methods of fastening, placing and typing of springs and making spring edges.

311. Welding. Credit 3(0–6).

Electric Arc Welding. The purpose of this course is to give students a knowledge and understanding of the welding process and its possibilities. A knowledge of the limitation of the process, of the apparatus used, of the common metals, their composition, their properties and methods of identification. Practice work in various types of flat beads and welds.

312. Welding. Credit 3(0–6).

Continuation of 311 with practice in more difficult welds in flat and horizontal position.

313. Welding. Credit 3(0–6).

Electric Arc Welding. A study of the different types of metals and welding rods to be used with steel, cast iron, malleable iron and more common metal. Skill in handling the welding machine as applied to practical jobs. Practice in Vertical and Overhead Welds. Oxy-Acetylene Gas Welding and Resistance Welding.

ENROLLMENT BY COUNTIES IN NORTH CAROLINA

Alamance	51	Lincoln	3
Alexander	2	Macon	1
Anson	21	Martin	26
Beaufort	52	McDowell	4
Bertie	30	Mecklenburg	50
Bladen	25	Montgomery	10
Brunswick	15	Moore	42
Buncombe	15	Nash	24
Burke	8	New Hanover	25
Cabarrus	14	Northampton	20
Caldwell	13	Onslow	23
Carteret	7	Orange	26
Caswell	29	Pamlico	17
Catawba	17	Pasquotank	15
Chatham	34	Pender	18
Chowan	7	Perquimans	3
Cleveland	53	Person	20
Columbus	44	Pitt	74
Craven	47	Polk	9
Cumberland	47	Randolph	43
Dare	3	Richmond	58
Davidson	17	Robeson	48
Davie	8	Rockingham	40
Duplin	28	Rowan	21
Durham	35	Rutherford	10
Edgecombe	44	Sampson	36
Franklin	27	Scotland	20
Forsyth	189	Stanly	13
Gaston	29	Stokes	6
Gates	8	Surry	11
Granville	30	Swain	1
Greene	15	Transylvania	1
Guilford	481	Tyrrell	8
Halifax	55	Union	18
Harnett	21	Vance	17
Haywood	1	Wake	65
Henderson	3	Warren	28
Hertford	64	Washington	17
Hoke	11	Wayne	55
Hyde	5	Wilson	71
Iredell	25	Wilkes	24
Jackson	4	Yadkin	7
Johnston	17	Yancey	3
Jones	27		
Lee	24	Total	2,754
Lenoir	28		

ENROLLMENT BY STATES
1955-56

Alabama	2
Connecticut	2
Delaware	2
Florida	38
Georgia	33
Illinois	4
Kansas	1
Maryland	8
New Jersey	7
New York	24
North Carolina	2,754
Ohio	2
Pennsylvania	17
South Carolina	125
Tennessee	1
Virginia	104
West Virginia	5
District of Columbia	8
Jamaica, B.W.I.	8
Liberia	1
Puerto Rico	4
Total	3,150

SUMMARY OF ENROLLMENT
1955-56

Senior Class	404
Junior Class	400
Sophomore Class	449
Freshman Class	680
Special Students	19
Graduate Students	771
Trade Students	427
Total	3,150
Total Enrollment, excluding duplicates, regular session, 1955-56	3,150
Summer Quarter, Undergraduates, 1955	337
Summer Quarter, Graduates, 1955	1,225
Grand Total 1955-56	4,712

INDEX

	Page
Admission to College	30
Agricultural Economics	99
Agricultural Education	87, 104
Agricultural Engineering	225
Agriculture, Basic Curriculum	227
Agriculture, School of	59
Agronomy	230
Air Conditioning	280
Air Science and Tactics	236
Animal Husbandry	107
Animal Industry	107
Architectural Engineering	118
Art	122
Auto Mechanics	251
Bacteriology	129
Bands, College	44
Biology	127
Board of Trustees	7
Botany	130
Business	133
Cabinet Making	253
Calendar, 1956-57	2
Calendar, College	3
Carpentry	255
Changes in Schedule	37
Chemistry	150
Chemistry, Department of	148
Class Attendance	37
Classification of New Students	32
Clothing	179
College Buildings	24
College, History of	22
College Publications	4
Commercial Education	141
Course Numbering System	35
Credit Evaluation	40
Dairy Husbandy	110
Degrees	41
Deportment	40
Description of Courses	99
Dormitory Provisions	40
Dormitory Regulations	39
Driver Education	283
Dry Cleaning	258
Economics	249
Education and Psychology	153
Education and General Studies, School of	63
Electrical Engineering	158
Engineering, School of	69
English	161
Enrollment by Counties	291
Enrollment by States	292
Enrollment Summary	292
Examinations, Entrance	37
Examinations, Quarterly	38
Expenses and Fees	50
Extracurricular Activities	38
Evening School	50
Foods and Nutrition	180
Foreign Languages	165
Forestry	230
Fraternity Houses	39
French	166
Freshman Courses	64
Freshman Week	32
Geography	247
Geology	232
Grade Points	34
Graduate School	77
Graduate, Teaching Certificates	91
Graduation Regulations	40, 134, 193
Health Service	39
History	242
Home Administration	181
Home Economics, Basic Curricula	170
Home Economics, Department of	169
Home Economics Education	174
Honor Roll	38
Horticulture	234
Incompletes	34
Industrial Education	185
Institution Management	175, 183
Institutional Organization	23
Laundry Management	261
Loans	47, 49
Machine Shop Practice	263
Majors and Minors	66
Marking System	34
Masonry	264
Master's Degree, Requirements	134
Mathematics	196
Mechanical Engineering	201
Medals	49
Military Science and Tactics	240
Music	205
Nursery School Education	177
Nursing, School of	71
Nutrition	180
Officers of Administration and Instruction	9
Out of State Students	54
Painting and Decorating	266
Physical Education	211
Physics	220
Philosophy and Religion	210
Photography	269
Plant Industry	224
Plumbing and Steamfitting	270
Political Science	246
Poultry Husbandry	115
Pre-medical Course	68
Pre-veterinary	62
Prizes	47
Psychology	157
Radio Repair	272
Refrigeration	280
Removal of Incompletes	34
Religious Activities	38
Research	236
Reserve Officer's Training	239
Rural Sociology	99
Secretarial Science	141
Schedule Regulations	37
Scholarship	37
Scholarships	47
Senior Research	67
Sheet Metal and Roofing	274
Shoe Repairing	276
Social Science, Department of	241
Social Studies	244
Sociology	247
Soils	229
Spanish	168
Student Load	34
Student Organizations	42
Students, Boarding	39
Students, Non-resident	39
Summer School	49
Suspension	40

	Page
Technical Institute	249
Television	272
Tailoring	278
Thesis	83
Upholstering	253
Varsity Athletics	46
Veteran's Admission	80
Vocational Education	191
Vocational Trade Courses	251, 280
Welding	281
Withdrawal from College	38
Zoology	131

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