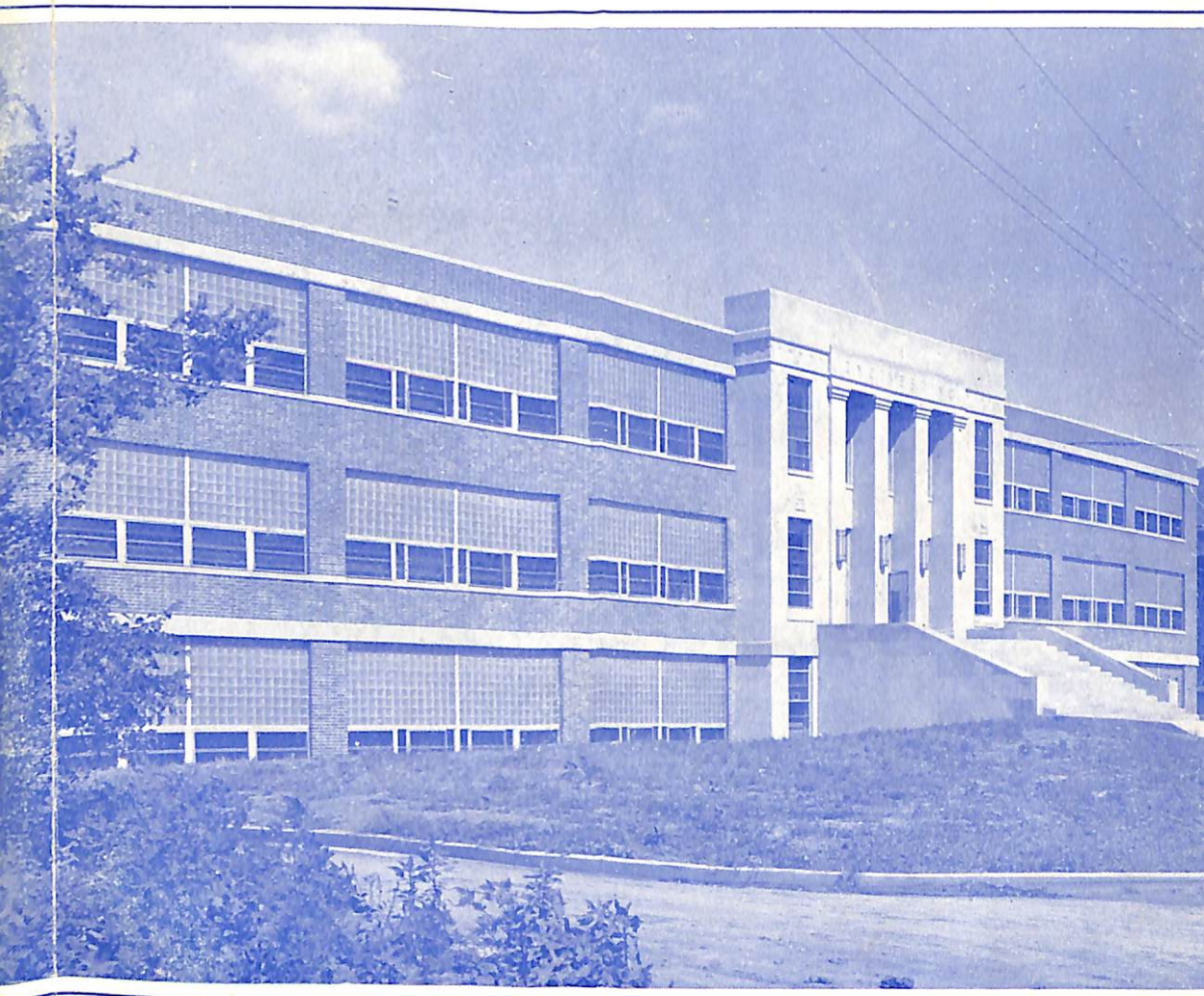
TENNESSEE AGRICULTURAL AND INDUSTRIAL STATE UNIVERSITY

BULLETIN



CATALOG FOR 1950-1952
ANNOUNCEMENT FOR 1952-1953

NASHVILLE, TENNESSEE

May, 1952

TENNESSEE
Agricultural and Industrial
STATE UNIVERSITY

BULLETIN

CATALOG

1950-52

ANNOUNCEMENT

1952-53

VOLUMES XXXIX AND XL NUMBERS 5 AND 6

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Nashville, Tennessee

May, 1952

(Cover Photograph: Main building of the School of Engineering in foreground, and a portion of the Industrial Building in the right background)

CALENDAR FOR 1951

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THE UNIVERSITY CALENDAR

Academic Year 1951-1952

1951

Fall Quarter

September 15, Saturday.....Faculty Meeting (10:00 a.m.
September 14-19, Friday-Wednesday...Freshman Week Program
September 17-18, Monday-Tuesday.....General Registration
September 19, Wednesday.....Freshman Registration
September 20, Thursday.....Classes Begin
September 24, Monday.....Opening Convocation
October 25-26, Thursday-Friday.....Mid-term Examinations
November 9-10, Friday-Saturday.....Graduate Record Examination
November 22-24, Thursday-Saturday...Thanksgiving Holidays
December 3-6, Monday-Thursday.....Examinations, Fall Quarter

Winter Quarter

December 7-8, Friday-Saturday.....Registration, Winter Quarter
December 10, Monday .....Classes Begin
December 15, Saturday (noon).....Christmas Recess Begins

1952

January 2, Wednesday (8:00 a.m.)....Instruction is Resumed
January 31-February 1, Thursday-
Friday .....Mid-term Examinations
February 12, Tuesday .....Junior English Proficiency Test
March 10-13, Monday-Thursday.....Examinations, Winter Quarter

Spring Quarter

March 14-15, Friday-Saturday.....Registration, Spring Quarter
March 17, Monday .....Classes Begin
April 18-19, Friday-Saturday.....Graduate Record Examination
April 24-25, Thursday-Friday.....Mid-term Examinations
May 27-30, Tuesday-Friday.....Examinations, Spring Quarter
June 1, Sunday .....Baccalaureate
June 2, Monday .....Commencement

Summer Session*

First Term

June 9-10, Monday-Tuesday.....Registration
June 11, Wednesday .....Classes Begin
June 17, Tuesday .....Junior English Proficiency Test
July 4-5, Friday-Saturday.....Graduate Record Examination
July 11, Friday .....Classes End

Second Term

July 14, Monday .....Registration
July 15, Tuesday.....Classes Begin
July 30, Wednesday.....Mid-term Examinations
August 10, Sunday .....Commencement Exercises
August 15, Friday .....Classes End

*Classes meet on Saturday mornings. All classes must meet at least twice the number of clock hours per week in a summer term as they normally meet during a week of a regular quarter.

Academic Year 1952-1953

1952

Fall Quarter

September 15, Monday .....Faculty Meeting (8:30 a.m.)
September 15-20, Monday-Friday.....Freshman Week Program
September 16-17, Tuesday-Wednesday..General Registration
September 18, Thursday .....Freshman Registration
September 19, Friday .....Classes Begin
September 29, Monday .....Opening Convocation
October 23-24, Thursday-Friday.....Mid-term Examinations
November 27-29, Thursday-Saturday...Thanksgiving Holidays
December 1-4, Monday-Thursday .....Examinations, Fall Quarter

Winter Quarter

December 5-6, Friday-Saturday .....Registration, Winter Quarter
December 8, Monday .....Classes Begin
December 20, Saturday (noon).....Christmas Recess Begins

1953

January 5, Monday (8:00 a.m.).....Instruction is Resumed
January 29-30, Thursday-Friday.....Mid-term Examinations
March 9-12, Monday-Thursday.....Examinations, Winter Quarter

Spring Quarter

March 13-14, Friday-Saturday .....Registration, Spring Quarter
March 16, Monday .....Classes Begin
April 23-24, Thursday-Friday .....Mid-term Examinations
May 26-29, Tuesday-Friday .....Examinations, Spring Quarter
May 31, Sunday .....Baccalaureate
June 1, Monday .....Commencement

Summer Session*

First Term

June 8-9, Monday-Tuesday .....Registration
June 10, Wednesday .....Classes Begin
July 9-10, Thursday-Friday .....Examinations, First Six Weeks
July 10, Friday .....Classes End

Second Term

July 13, Monday .....Registration
July 14, Tuesday .....Classes Begin
August 9, Sunday .....Commencement Exercises
August 13-14, Thursday-Friday .....Examinations, Second Six Weeks
August 14, Friday .....Classes End

*Classes meet on Saturday mornings. All classes must meet at least twice the number of clock hours per week in a summer term as they normally meet during a week of a regular quarter.

ACADEMIC ORGANIZATION OF THE UNIVERSITY

GRADUATE SCHOOL

SCHOOL OF ARTS AND SCIENCES

SCHOOL OF EDUCATION

SCHOOL OF ENGINEERING

AREAS OF

AGRICULTURE

BUSINESS

HOME ECONOMICS

EXTENSION

AIR SCIENCE

SUMMER SESSION

ACCREDITATION

Tennessee Agricultural and Industrial State University is fully accredited by the Southern Association of Colleges and Secondary Schools, the American Association of Colleges for Teacher Education, and is a member of the Teachers College Extension Association.

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RALEIGH A. WILSON, B.A., M.A., PH.D., University of Iowa. *Professor of History.*

HENDERSON K. WOOD, B.A., Ohio Wesleyan University; M.A., Fisk University. *Professor of Biology.*

THEODORE R. WOOD, B.S., Tenn. A. & I. State College; M.S., Michigan State College. *Instructor of Animal Husbandry.*

*GILBERT A. WORTHAM, B.A., Howard University; M.A., New York University. *Instructor in Psychology.*

JAMES B. YELDELL, B.S., Virginia Union University; M.S., Howard University. *Assistant Professor of Chemistry.*

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*Resigned
**On leave 1950-51
***On leave 1951-52
****Died October 10, 1951

THE UNIVERSITY

Historical Statement

Agricultural and Industrial State Normal School at Nashville was opened on June 19, 1912, under an act of the General Assembly of 1909 which authorized the establishment of the State Normal Schools of Tennessee.

In 1922, the institution was raised to the status of a four-year teachers college and was empowered to grant the bachelor's degree. The first degrees were granted in June, 1924. During the same year, the institution became known as the Agricultural and Industrial State Normal College; and in 1927, "Normal" was dropped from the name of the College.

The General Assembly of 1941 authorized the State Board of Education to upgrade substantially the educational program of the College, which included the establishment of graduate studies leading to the master's degree. Graduate curricula were first offered in several branches of teacher education. The first master's degree was awarded by the College in June, 1944.

In August, 1951, the institution was granted university status by approval of the State Board of Education. The reorganization of the institution's educational program included the establishment of the Graduate School, the School of Arts and Sciences, the School of Education, and the School of Engineering. Provisions were also made for adding schools later respectively in agriculture, business, and home economics.

The University is supported from State and Federal funds; the latter in accordance with the Morrill and other Federal Acts which provide funds for land grant institutions.

Purposes of the University

As a public institution of higher education, the University is obligated to provide training in the intellectual and technical skills and to perform educational services in terms of the needs that the people of Tennessee have invisioned for themselves. The immediate objectives of the University are:

I. To offer as complete a program of work as possible in the fields of general and applied knowledge as commonly represented by schools of arts and sciences, agriculture, business, education, engineering, home economics, and graduate studies in all of these fields.

II. To offer adequate opportunity for the education of citizens who may make maximum contributions toward the development of the human and natural resources of Tennessee and elsewhere.

III. To develop leadership in all branches of the educational programs and services provided by the University.

IV. To perform all of the services and functions set forth for land-grant institutions.

The Campus

The University is located in northwest Nashville, with the central campus on Centennial Boulevard at 35th Avenue. Its campus, farm lands and pastures occupy 267 acres of scenic rolling grounds and fertile fields extending to the southwest banks of the Cumberland River.

The central campus consists of more than thirty permanent modern buildings in a landscape design that rivals the most beautiful campuses in the South.

MAJOR BUILDINGS AND EQUIPMENT

The Administration Building is located on the south campus near Centennial Boulevard between 35th and 36th Avenues. It contains the chief administrative offices, some instructional staff offices, classrooms, the general auditorium which accommodates approximately one thousand persons, the Little Theatre for student productions in drama, the bookstore, a branch of the U. S. Post Office, a swimming pool, and a gymnasium.

The Martha M. Brown Memorial Library, erected in 1927 and enlarged and modernized in 1950, is located near the center of the main campus on the north side of Centennial Boulevard. The present structure has a total capacity of 120,000 volumes and provides special rooms and facilities for undergraduate and graduate studies, conference and seminar rooms, lounges and other accommodations for the faculty and staff.

The Harned Hall of Science is located on the north campus, east of the library. It provides classrooms, lecture auditoriums, modernly equipped laboratories, staff offices and other facilities for instruction and research in biology, chemistry, physics, mathematics and the general science studies.

The Engineering Building, completed in 1950, is located on the south side of the campus at Centennial Boulevard and 35th Avenue. Its modern laboratories contain equipment for instruction and research in mechanics, combustion, electronics, foundry, hydraulics, building and construction, and civil engineering. Other accommodations include a lecture auditorium, classrooms, and offices.

The Industrial Building is located on the south side of the campus at Centennial Boulevard and 35th Avenue. It contains a variety of modernly equipped laboratories, shops, and classrooms for agriculture, metal work, plumbing, welding, shoe repairing, radio, electricity, and woodwork. Several instructional staff offices and the office of the adviser to veteran students are also located in this building.

The Mechanical Engineering Building, completed in 1950, is situated on the northwest campus. It contains a modern heating plant, laboratories and offices for instruction in stationary engineering.

The Vocational Shops Building, located on the north side of the campus, contains shops for auto and aerial mechanics and facilities for flight instruction.

The Women's Vocational Building is located west of the University library on the north campus. The building contains laboratory, lecture rooms, work rooms and studios for the fine arts and crafts, home economics, business education and administration, music, and the nursery school.

The Agricultural Laboratories and Experimental Units include the modern dairy barn, biochemistry laboratories, stock pavilions, farm shops, animal shelters, a modern poultry plant, a modern walking horse barn, agronomy experimental plots, and a greenhouse.

The New Poultry Plant, completed in 1951 at the cost of $104,000, is located on the southwest side of the main campus. It consists of eighteen major and minor buildings; with ranges for various kinds of poultry, including water fowl. The Plant has the most modern equipment for teaching and experi-

mental work in incubation, brooding, laying, nutrition, genetics, disease diagnosis and control, and poultry produce grading and marketing.

The New University Health Building is now under construction on the south side of the campus at Centennial Boulevard and 33rd Avenue. This modern structure will contain a gymnasium with a seating capacity of 4,000; health and physical education classrooms and laboratories; staff offices; and facilities for indoor intramural sports, staff and student recreation, and physical therapy.

The University Field House and Alumni Stadium are located on the northeast campus at Centennial Boulevard and 33rd Avenue. The Field House is a modern stone structure that contains accommodations for visiting athletes and offices for the staff in Health and Physical Education. Recent improvements on the Alumni Stadium include lights for night games, increased seating capacity, and construction of a new turf for several kinds of athletic events including football, baseball, and major and minor track sports.

Temporary General Classroom Buildings (1 and 2) were constructed to accommodate the increased student class loads during and immediately following the war years. They also contain instructional staff offices.

The Jane E. Elliot Cafeteria is an annex to the Women's Vocational Building. It has been enlarged and modernized recently to accommodate 2,000 persons at each meal.

The Student Health Service Building, located west of the women students' dormitories, has facilities for complete examinations and limited treatments for students. It contains two lying-in wards for the accommodation of six women and six men students respectively.

Hale Hall, located west of the University library, is a modern three-story fireproof residence hall for the upper-class women.

Wilson Hall, located north of Hale Hall, is a modern resident dormitory for freshmen and sophomore women.

East Dormitory, located on the northeast part of the campus, accommodates the men students.

Veterans' Dormitories consist of two units of temporary buildings for the housing of male veteran students.

The President's Home is a modern colonial type residence located north of Harned Hall.

The Alumni Building, located on the southeast campus, presently contains accommodations for faculty families and guest rooms for alumni and official visitors to the University.

Veteran Teachers Apartments are located on the south side of the campus for temporary accommodation of a limited number of faculty families.

Faculty Women's Residence Hall, located on the north campus, is a modern three-story building for the accommodation of single faculty women.

The Faculty Cottages include four modern homes on the north side of the campus and several homes adjacent to the central campus on 28th Avenue, North.

The Recreation Hall, located on the northwest side of the campus, contains second-floor apartments for faculty families and a recreation center for students and faculty on the first floor.

ORGANIZATION OF INSTRUCTIONAL SERVICES OF THE UNIVERSITY

The Undergraduate Program

Undergraduate majors leading to the bachelor's degree may be pursued at the University in the following fields:

AGRICULTURE: General Agriculture, Agricultural Biochemistry, Agricultural Economics, Agricultural Education, Agricultural Engineering, Agronomy, Animal Husbandry, Olericulture and Pomology, Ornamental Horticulture and Floriculture, and Poultry Husbandry.

ARTS AND SCIENCES: Biology, Chemistry, English, Geography, History, Mathematics, Modern Foreign Languages, Natural Science, Physics, Political Science, Science Education, Social Administration, Sociology, and Speech and Drama.

BUSINESS: Business Administration, Business Education, and Economics.

EDUCATION: Art, Elementary Education, Health and Physical Education, Library Service, Music, and Psychology.

ENGINEERING: Building and Construction Engineering, Civil Engineering, Electrical Engineering, Foundry and Mechanical Engineering, Industrial Education, and Aviation Education.

HOME ECONOMICS: Foods and Nutrition, Home Economics Education, Child Development and Family Relationships, Home Management, Related Arts, and Textiles and Clothing.

Two and three year preprofessional curricula are offered toward preparation for the study of medicine, dentistry, nursing, and clinical laboratory technology.

Secondary education courses for meeting certification requirements are offered for majors in all fields of the Arts and Sciences, and several specialized branches of Education.

Courses in Air Science and Tactics are offered in connection with the Air Force Reserved Officers Training Corps program at the University.

The Graduate Program

Graduate curricula leading to the master's degree are offered in the fields of Agricultural Education, Agronomy, Animal Husbandry, Biochemistry, Biology, Business Administration, Business Education, Chemistry, Clothing and Textiles, Economics, Educational Administration, Educational Psychology, Elementary Education, English, Foods and Nutrition, Geography, Health and Physical Education, History, Home Economics Education, Industrial Education, Modern Foreign Languages, Mathematics, Music Education, Physics, Political Science, Poultry Husbandry, Psychology, Science Education, Secondary Education, Social Administration, Sociology, Speech and Drama, and Supervision.

UNIVERSITY STANDARDS

The University does not undertake to prescribe in detail either its requirements or its prohibitions. Students are met on a plane of mutual regard and helpfulness. Appeal is made to a proper sense of the proprieties of life and the necessities of organization on such a basis. It does not require a gross and overt act to sever the connection of a student to whom such appeal proves vain.

It is expected that students will live up to the ideals of American students: that every student will be a gentleman or a lady in all relations and associations; that he or she will be diligent in study, prompt and regular in class, at chapel, Sunday School, Third Sunday Services, Vesper, and other public services, and give respectful attention to those conducting them; that he or she will properly observe the hours set apart for study and refrain from noise or disturbance of any kind; that contemplated changes of rooms, board, classes, courses, etc., will be submitted to the proper administrative officials for approval before action is taken; and that the student will not leave the city without permission previously obtained.

THE STUDENT HANDBOOK

The *Student Handbook* is a compact reference book which gives a comprehensive view of life at the Tennessee Agricultural and Industrial State University and of the privileges and responsibilities of students as individuals, groups, and organizations.

LIVING ACCOMMODATIONS

Living on the Campus

All residence halls and dormitories provide opportunities for personal, social, and intellectual companionships and experiences in group living, under the guidance of specially trained residence hall directors.

Housing facilities for women are provided in Hale and Wilson Halls, and for men in East Hall. Rooms and apartments in temporary buildings are available for single and married veterans.

Rooms are furnished with twin beds or double decker beds, dressers, tables, and straight chairs. Each student who has been approved for living in one of the residence halls should bring a pillow, pillow cases, sheets, bed spreads, blankets, two pairs of curtains, towels, dresser and table covers, and any other accessories which will make rooms comfortable and attractive.

Living off the Campus

Limited openings are available for students to live in homes in the city. Students who plan to live in the city may consult the Supervisor of Housing for Off-Campus Students.

Students who live in homes in the city are expected to maintain the same general standards as those required of the students who live on the campus.

The University Cafeteria

The University Cafeteria serves three meals daily, Monday through Friday, and two meals each on Saturday and Sunday. The meals are well balanced and excellently prepared; and are served cafeteria style. Students who live on the campus are expected to purchase a meal "ticket" for each quarter in residence.

HEALTH SERVICE

The Student Health Service aims to provide for a healthful university community through a physical examination of all entering students, a follow-up of the examinations, medical and dental counsel as the occasion requires. Hospital rooms and dental services are provided in the Student Health Service Building. The Student Health Center offers twenty-four hours service including hospitalization for students confined by illness. Three physicians, one dentist, four nurses and one clerk are members of the University staff.

RECREATION

Campus recreation facilities include the lake area on the southwest campus, first floor of the recreation hall for social events and minor sports activities, the indoor and outdoor swimming pools located respectively in the basement and adjacent to the Administration Building, tennis courts now under construction near the new University Health and Physical Education Building, and space for outdoor sports on the athletic field. The University gymnasium is open during certain hours for gymnastics, volley ball, boxing, and intergroup basketball. The indoor swimming pool is open on scheduled evenings throughout the year, and the outdoor pool is open for swimming in season.

STUDENT PERSONNEL SERVICES

Guidance

The Student Personnel program aims to reach the interests, needs, and purposes of all students through the guidance services; to make available varied, illimitable assistance for superior educational, social, and vocation adjustment and development. Reaching that goal involves the coordinate planning and cooperation of numerous university officials, faculty and staff members; among them are the Director of Student Personnel, the Dean of Women, the Dean of Men, the Coordinator of Student Activities, the chairmen of the schools, the Chairman of Admissions, the Director of Student Health Services, directors of residence halls, supporting counselors, such as freshmen counselors, faculty major advisers for departments and schools; such committees as the Guidance Committee, the Freshman Week Committee, the Decorum Committee, the Faculty Advisory Committee; and consultant specialists in medicine, psychiatry, psychology, social work, vocational choice and placement.

In solving specific problems, students are assisted individually and in groups, directly and by referral.

Upon being admitted to the University, each student is assigned by the Chairman of Admissions on a basis of the student's choice of school, to the chairman of that school who refers the student to the head of the major department for guidance.

The duties of the adviser are to assist the student in selecting his subjects so as to secure a well-rounded education, as well as to aid in interpreting the requirements in their proper sequence.

The responsibility for the selection of courses rests, in the final analysis, upon the student; and it is not the province of the adviser to refuse approval of the course which the student is entitled to elect. Similarly, it is the primary duty of the student to pursue courses in their proper order to meet the requirements for graduation in the senior year. When the student registers for each quarter, he is required to consult his adviser concerning his choice of studies and must obtain written approval of the adviser on all schedules to be pursued. The student is urged, further, to confer with his adviser frequently, at least monthly, during each quarter.

The advisers for freshmen and sophomores are members of the faculty of the school in which the student is registered. Each adviser of freshmen is

also known as the freshman counselor. Faculty freshmen counselors advise freshmen on innumerable social, vocational, and educational matters about which freshmen need information and assistance; such as adaptation to new ideas, how to study, health and emotional adjustment, budgeting time and money, extra-class activities, residence halls and home relationships, vocational orientation and choice.

Major advisers are members of the staff of the department in which the student is doing his major work. Major advisers counsel students not only in curricular or educational matters but give attention to the whole student—his health, financial adjustment, social adjustment, vocational choice and proposed after-college adjustment to life.

Tests and inventories are available for use with all students. These include tests of mental ability, aptitude and achievement tests; and study, personality, and vocational inventories.

Collegiate Counselors

Collegiate Counselors are sophomores, juniors, or seniors who, because of their leadership ability, have been chosen to assist with the orientation of freshmen and other phases of the University guidance program. The Collegiate Counselors include two groups: the Senior Counselors who have had more than one year's experience as Student Counselors, and the Junior Counselors who have had less than a year's experience as Student Counselors.

Freshman Week

All freshmen are expected to be present at the University the week preceding the beginning of instruction in September and to remain throughout the week. The week is devoted to conferences with advisers and counselors, mental ability, aptitude and achievement tests, interest inventories, registration and assignments to classes, health examinations, lectures and discussions on subjects of importance to new students.

Freshmen Placement Examinations

During Freshmen Orientation Week, freshmen students are given the following placement tests: mental ability, reading, English, mathematics, and an interest inventory. The tests are scored and processed in the University testing bureau, and the results for each student are reported on an individual profile chart showing the student's percentile rank on each test.

The student's adviser uses the profile chart as a basis for educational guidance. Students who show deficiencies in any one of the subject areas are given an opportunity to remove the deficiency. The English Department and the Mathematics Department offer courses in English and mathematics respectively for freshmen students who show a deficiency in either of these subjects.

Psycho-Educational Clinic

The Psycho-Educational Clinic, under the direction of the Head of the Department of Psychology, offers educational guidance based on test results with particular emphasis on correcting reading difficulties.

Children's Level: (A series to public schools) Mental testing and diagnosis of learning disabilities, with recommendations for treatment.

College Level: Educational guidance based on mental testing, aptitude testing, and interest and personality inventories. Diagnosis of academic failure

on the college level and counseling relative to removing the causes of failure.

Reading Clinic: Diagnosis and correction of reading disability on both the child and adult level.

How to Study: (Psychology 100) Non-credit course, required of psychology majors, open to other students interested in developing correct study habits.

Advanced psychology majors and graduate students in education may receive credit for supervised work in the Psycho-Educational Clinic.

Student Employment

The University attempts to provide part-time employment for a limited number of students who establish needs for financial assistance; and who, by their scholarship records, appear capable of making satisfactory grades as work-aid students.

Inasmuch as the first year is one of general adjustment to university life and studies, entering freshmen students are advised not to seek employment on the campus or in the city.

Eligible students may apply for work-aid at the Office of the Executive Aide to the President of the University.

Students who are interested in obtaining part-time employment in the city may make inquiries at the Office of the Business Manager.

The University may deny a student the privilege of working if such employment might seriously jeopardize the welfare of students or the University in any manner.

The University Placement Bureau

The University Placement Bureau assists graduates in securing the most advantageous employment, and keeps pertinent statistics on their performance.

The Bureau maintains permanent personnel records, including recommendations and ratings of the graduates. These records serve as the source of referrals which are frequently requested from the University. Mailing forms, containing the graduate's scholastic achievements, background, work experience, faculty and non-faculty recommendations, and other pertinent information are compiled and sent to any prospective employer at the request of the graduate, faculty member, or the employer.

The Bureau helps special students, seniors, and alumni locate positions for which they are qualified, offers follow-up and counselling services, and arranges interviews between seniors and employers. Students are assisted in obtaining part-time employment.

Every graduating senior is required to register with the Bureau which is located in Room 108, Harned Hall. The services of the Bureau are free of any charge to employers, students, and alumni of the University.

STUDENT ORGANIZATIONS AND ACTIVITIES

There are about fifty extra-curricular organizations at the University. Intelligent and active participation in a reasonable number of such activities provides opportunity for leadership, cooperation, fellowship, and complements the learning, through curricular offerings and residence life, of attitudes, appreciations, and modes of behavior, as well as information and skills.

Student Publication

The Meter is a monthly publication of the student body. It endeavors to keep the students informed of the activities of the University, and to allow them to express their ideas and opinions.

Student Government

The Student Council, the key student organization, exists on the campus to promote the general welfare of the University, to protect the general welfare of the University, to provide active participation in student affairs, to create an intermediary between faculty and students in matters of general welfare, and to train for leadership. Its twelve members represent the classes of the University and the graduate school.

Residence Hall Organizations

There are student residence organizations in Hale Hall, Wilson Hall, and the Veterans Dormitories.

Better Dormitory Club

To regulate as far as possible all matters pertaining to the problems and privileges of the men in East Dormitory, (i.e. order on the halls, care of physical plant, rights and privileges of roommates); to increase a sense of individual responsibility; to further the spirit of unity among the men of the University in their clubs and fraternal groups; to cooperate with the administration by interpreting and maintaining the high ideals of our University through a discipline committee of five chosen from officers and representatives who are elected annually by the main body.

Religious Organizations and Activities

Emphasis is placed on promoting the religious spirit and life of the University. The religious organizations and activities of the University include the Student Christian Association, Baptist Student Union, Newman Club, Sunday School, Quiet Hour, Third Sunday Services, Vesper Services, and Religious Emphasis Week.

Fraternities and Sororities

The following national Greek Letter Fraternities have chapters at the University: Alpha Phi Alpha, Kappa Alpha Psi, Omega Psi Phi, Phi Beta Sigma.

The following national Greek Letter Sororities have chapters at the University: Alpha Kappa Alpha, Delta Sigma Theta, Sigma Gamma Rho, Zeta Phi Beta.

There are the following pledge clubs at the University: Sphinx Club, Scrollers Club, Lampados Club, Crescent Club, Ivy Leaf Club, Pyramid Club, Aurora Club, and the Archonian Club.

The Inter-Fraternity Council

The Inter-Fraternity Council exists at the University to promote greater understanding and cooperation among the fraternities and sororities; to serve as an instrument through which the fraternities and sororities and the general administration of the University may cooperate in aiding the individual to set and maintain high standards of intellectual and social achievement; to formulate and recommend actions of the council; and to administer under the jurisdiction of the major governing bodies of the University, such regulations as are deemed necessary and of common interest to all fraternities and sororities.

Athletic Organizations

Varsity and Intramural athletics are promoted. Teams in football, soccer, softball, field hockey, basketball, swimming, track, and tennis engage in

intramural and inter-collegiate competition. The "T" Club is composed of men who have won the University Letter in a major sport. The Physical Education Club promotes all intramural competition.

Class Organizations

The University classes (Freshman, Sophomore, Junior, and Senior) are organizations, and at their meetings throughout the year plan social and other class programs. Students in the Graduate School are organized in the Graduate Club.

Departmental Organizations

Departmental Organizations at the University include:

Air Force R O T C Rifle Team.

Agronomy Club. For majors in Agriculture.

American Chemical Society, Student Affiliate Chapter. For majors in Chemistry.

Arnold Air Society. National R O T C Society for outstanding R O T C students.

Association for Childhood Education. For departmental majors.

Beta Kappa Alpha Speech and Drama Society. For majors and minors in Speech and Drama, and for members of the Tennessee State Players Guild.

Biology Club. For departmental majors.

Botanical Field Club. For departmental majors in Agriculture.

Elementary Education Club. For departmental majors.

Engineering and Industrial Education Club. For departmental majors.

English Club. For departmental majors.

Flash Writers (Transcription Club). For advanced shorthand students in Business Education.

Future Teachers of America. For majors in Education.

History Study Club. For majors in History and Geography.

Home Economics Club. For departmental majors.

Homemaking Institute. For majors in Foods and Nutrition.

Industrial Education Club. For departmental majors.

International Relations Club. For students of international affairs.

Laicos S. Ronoh Honor Society. For honor students in Political and Social Science.

Les Amis de la France. For majors in French.

Library Service Club. For departmental majors.

Los Buenos Vecinos. For majors in Spanish.

Mathematics Club. For departmental majors and minors.

New Farmers of America. Tennessee Collegiate Chapter. For majors in Agriculture.

Physical Education Club. For departmental majors.

Political and Social Science Club. For departmental majors.

Tennessee State University Aero-Tigers. For students of aviation.

Departmental Publications

The Departmental local student publications include:

"The Biolog," published monthly by the Biology Club.

"The Foods and Nutrition Newsletter," published by the Department.

"The Test Tube," published monthly by the Chemistry Club.

Literary Organizations

The Literary Organizations at the University include:

Tennessee State Players Guild.

Children's Theatre.

The Literary Guild. For students of English and Literature.

Musical Organizations

Musical Organizations at the University include:

University Band and Orchestra. Open to students of music.

University Choir. For majors in music. Open to others.

Concert Singers. For majors in music. Open to others.

Glee Club. For majors in music.

Meistersingers. For majors in music.

National Honor Societies

The National Honor Societies at the University include:

Alpha Kappa Mu Honor Society, Phi Beta Tau Chapter. An organization for the encouragement of greater scholastic achievement.

Beta Kappa Chi Scientific Society, Xi Chapter. A national organization for outstanding students and scholars in natural sciences and mathematics.

Gamma Theta Upsilon Geography Fraternity, Alpha Beta Chapter. A national organization for outstanding students and scholars in Geography.

Theta Alpha Psi, Epsilon Chapter. National honor dramatic fraternity for students in Speech and Drama, and others.

Kappa Delta Pi Honor Society, Zeta Chi Chapter. A national organization for outstanding students and scholars in education.

Pi Omega Pi Fraternity, Beta Psi Chapter. A national honorary business fraternity for outstanding students who plan to teach business subjects.

Sigma Delta Pi, Gamma Eta Chapter. A national society for outstanding students in Spanish.

Sigma Rho Sigma, Gamma Chapter. A national association for future social science teachers.

Honors, Scholarships and Awards

Honor Roll. Students who earn a quality point average of 3.25 (B+) or above in all subjects, and who pursue a minimum of 12 quarter credit hours in the regular curriculum shall be placed on the University Honor Roll for that quarter. A public announcement of the honor roll will be made following the end of each quarter during the regular school term.

The Alpha Phi Alpha Scholarship is awarded annually by the Beta Omicron Chapter of the Alpha Phi Alpha Fraternity to the freshman female student who has maintained the highest cumulative average during the freshman year.

The Art Award is given annually by the Department of Art to the student who shows the most promise during the year in aesthetic arts.

The Beta Kappa Alpha Keys are awarded annually by the Beta Kappa Alpha Speech and Drama Society to student majors and minors in speech and drama, and to members of the Tennessee State Players Guild who acquire 90 points in three years for backstage work.

The Biology Junior Research Award is given annually by the Biology Club

to the undergraduate student who performs the best biological investigation during the year. The award includes a certificate and a cash prize.

The Chemistry Club Award is a cash prize given annually by the Department to the best student in chemistry for the year.

Freshman Award in General Chemistry is given to the freshman attaining one of the ten highest averages in general chemistry for the year and the highest score on the standardized test in order to encourage proficiency in general chemistry.

Collegiate Counselors Keys are given annually to students who serve diligently for a minimum of two years as Collegiate Counselors.

The Elementary Education Award is presented annually to the best student major in the field of elementary education.

The G. P. Hamilton Award of one hundred dollars is given annually to the graduate of Booker Washington High School of Memphis, who maintains the highest scholastic average during the fall and winter quarters of the freshman year at the University.

The History Study Club Scholarship Award is given annually to a major in the field of history who has made the best scholastic record for the year.

The Home Economics Club Award is given annually to the major in home economics who has maintained the highest scholastic average for four years. The award is a cash prize.

The Isaac Foundation Award is given annually by the National Board of the Baptist Young People's Union to the member of the Junior class of the University who manifested outstanding promise and interest in religious activities throughout the year. The award consists of a cash prize and a letter of commendation.

Les Amis de La France, Le Cercle Francais Award is given annually to the student major in French who has maintained a minimum cumulative average of "B" for more than one school year, who is active in the departmental club, and who is adjudged to have other outstanding qualities representative of the Department. The award is a medal given by the American Association of Teachers of Spanish for the encouragement of scholarship.

McKissack Art Award is a cash prize given by McKissack Brothers of Nashville to the student who shows the most promise during the year in aesthetic arts.

Moses McKissack IV, Engineering Award is a cash prize given annually to the student who produces the best small house design in a contest conducted annually by the Department of Building and Construction Engineering.

Masonic Scholarships. The Most Worshipful Prince Hall Grand Lodge of Free and Accepted Masons of Tennessee and its Jurisdictions gives five annual scholarships to the students of the University under the following categories: 1) the highest ranking freshman student, 2) students of unusual ability and promise, 3) sons and daughters of living Masons, 4) sons and daughters of deceased Masons, and 5) students of the University who are Masons. The scholarships are $100, $75, and $50 respectively.

The Mathematics Club Awards annually a *Key* to the junior or senior major or minor in the department who scores highest on a competitive standardized mathematics examination administered by the department in the

spring of each year. In presenting this annual award, the Mathematics Club seeks to stimulate achievement in the field of mathematics.

The Mathematics Club Awards annually a "Certificate of Merit" to the freshman or sophomore major or minor in the department who scores highest on a standardized mathematics test administered by the department in the spring of year year. In making this annual award, the Mathematics Club seeks to encourage high scholarship in mathematics.

Modern Foreign Languages Departmental Award is given to the student major in modern foreign languages who has maintained a minimum average of "B" and who has been recommended by the Department for other outstanding qualities. The award is a gift from the Department.

Southern Association of Dramatic and Speech Art Keys Awarded to students and directors of dramatics and speech art who have been members of the Association for at least one year and who have done outstanding work at the University in play production and stagecraft.

State Business Teachers Award is given to the graduating senior in Business Education who has maintained a cumulative average of "B" in business subjects and who has been recommended by the Department for the award. The award consists of a cash prize and a citation given by the Business Education Department of the Tennessee Negro Education Association.

Student Council Keys are given annually to members of the Student Council.

Tennessee State Players Guild Keys are given annually to the members of the Guild who earn a minimum of 45 points in dramatic production.

Who's Who in American Universities and Colleges. Recognition in Who's Who in American Universities and Colleges is given eligible students who are classified as juniors, seniors, and graduates who are outstanding in college, scholarship, leadership, in educational and extra-curricular activities, general citizenship and service to the University and who show promise of future usefulness.

ALUMNI ASSOCIATION

The University has an active and loyal Alumni Association, the object of which is to continue the friendship of student days, to promote an intimate relationship between the alumni and the students of the University and to advance the cause of education. The Association usually meets during the Thanksgiving and the commencement seasons.

PUBLIC RELATIONS

The University maintains a Press and Public Relations Department for the purpose of interpreting the activities of the institution to the public through the press, the radio, newsreels and other publicity channels; and to keep the alumni informed regarding activities of their Alma Mater.

GENERAL INFORMATION AND REQUIREMENTS

Quarterly Fees

Tuition:	
Residents of Tennessee	$ 00.00
Non-Residents of Tennessee	35.00
Vocational Specialized Training Courses	126.00
Maintenance	35.00

Board (in cafeteria)	75.80
Room (in dormitory)	15.00
Laboratory fees (per course)	1.00 to 7.00

The amounts of laboratory fees are stated in the course descriptions. To determine the total laboratory fees that must be paid each quarter, add fees stated for each laboratory course pursued.

Estimated Annual Budget (Nine Months)

	Low	*Medium*
Tuition (residents of Tennessee)	$ 00.00	$ 00.00
Maintenance	105.00	105.00
Textbooks and School Supplies	40.00	60.00
Laboratory Fees	12.00	25.00
Board	227.40	270.00
Room	45.00	45.00
Total for residents of Tennessee who live on University Campus	$429.40	$505.00

Non-residents of Tennessee should add $105 tuition to the proper category above.

Payment of Fees

Regular fees, including tuition, board and room, maintenance, and laboratory are paid on the quarterly or term basis. These fees must be paid at the time of registration in the fall, winter, spring, and each summer term.

No refunds are made except for board in cases of illness of over two weeks' duration. Credit payments before quarter begins should be sent directly to the Office of the Bursar, Tennessee A. & I. State University.

Partial payments on a quarterly basis may be made as follows: Students who do not live on the campus must pay full $35; Tennessee residents who live on the campus may make a down payment of $79.80 with monthly payments of $20. Total amount per quarter for Tennessee resident boarders is $125.80, not including laboratory fees and school supplies. Out-of-state boarders may make a down payment of $104.80 with monthly payments of $45. Total amount per quarter for out-of-state boarders is $200.80.

Room Reservations

A $10 room reservation fee is required. Room reservation fees are *not* refundable. This fee is forfeited if the room is not taken; it is applied on expenses if the room is taken. The room reservation fee should be paid only after the student has been notified that a room has been reserved.

Explanation of Fees

Tuition Fees: Students who are residents of Tennessee are not required to pay a tuition fee. Students who are not residents of Tennessee are required to pay a tuition fee of $105 a year.

Maintenance Fees: All students are required to pay $35 per quarter for maintenance fees.

Laboratory Fees: Laboratory fees are charged in each course that requires regular laboratory periods. The fees are charged to replace materials consumed or used during course. For charges in each laboratory course, see course description.

Special Fees

Transcript Fees: A student may secure an official transcript of his record by the payment of a fee of $1. No transcript will be issued for a student whose college account is delinquent.

Graduation Fees: A diploma fee of $10 shall be paid before one is eligible to receive a degree from the University.

Music Fees: Piano or Voice, one lesson weekly, $7 per quarter; two lessons weekly, $14 per quarter. Organ, one lesson weekly, $20 per quarter.

Class Audit Fees: A regularly enrolled student may audit courses upon the payment of a fee of $1 per quarter for each course audited.

Late Registration: Students who register after the last regular registration day in any quarter must pay a late registration fee of $1 for each day late up to five days ($5).

Class Absences Before and After Holidays: A penalty of $5 is charged for non-attendance at the last meeting of any class before a holiday or the first meeting of any class after a holiday.

DEGREES OFFERED

The University offers two undergraduate degrees, namely: Bachelor of Science and Bachelor of Arts. The Graduate School awards the degrees of Master of Arts and Master of Science.

Bachelor of Arts

The Bachelor of Arts degree is granted in the following departments of the University: Biology, Chemistry, English, Geography, History, Modern Foreign Languages, Political and Social Sciences, Science Education, Speech and Drama.

Bachelor of Science

The Bachelor of Science degree is granted in all undergraduate departments of the University. The requirements for this degree are outlined in the several departmental curricula.

Master's Degrees

See the Graduate School announcements on page 48 for master's degree offered in the several fields.

ADMISSION

Procedures

All communications regarding admission, credit hours, transfers of credits, and advance standing should be addressed to the Chairman of Admissions of the University. Applications should be filed for the ensuing school year at or near the close of the current year in order to allow sufficient time for the action of the Committee on Admissions and Scholarship. The application form and other directions will be sent from the Office of Admissions upon request. These should be filled out and mailed promptly. Transcripts of records from all high schools and colleges previously attended, together with all other required information, must be on file in the Office of Admissions before the applicant will be considered for admission. All applicants must receive official notice from the Office of Admissions that they have been approved for admission before presenting themselves for registration. Therefore, it is usually unwise for an applicant to travel to the University before receiving an official notification.

General Requirements

1. The applicant must be at least 16 years of age.
2. The applicant must furnish satisfactory evidence of good moral character.
3. The official transcript of all high school credits and a small photograph must be filed in the Office of Admissions before the applicant may be officially admitted to the freshman class; and all high school and college transcripts must be filed for admission to advanced standing.
4. If a period of more than ninety days (one regular quarter) has elapsed between graduation from high school and the date of entering the University, the applicant will be required to submit a notarized statement as to whether or not he attended another college or university during this time.
5. A college student whose education has been interrupted for more than ninty days (one regular quarter) must present a notarized statement as to whether or not he has attended another college or university during this time.
6. All required data must be filed in the Office of Admissions for consideration for admission.
7. All students, except those who seek admission with advanced standing, must take an aptitude test, the English placement test, and the special tests required by the department in which the major is to be pursued.
8. All new students must attend the orientation period at the University one week prior to official registration unless given special permission by the Admissions Committee.

Admission by Certificate from High School

The applicant who seeks admission by certificate from high school should present a minimum of 15 units as follows:

English	3 units
American History	1 unit
Laboratory Science (Biology, Chemistry or Physics)	1 unit
Algebra	1 unit
Plane Geometry	1 unit
Electives	8 units
Total	15 units

One unit each in Biology, Chemistry, and Physics is recommended for students who plan majors in Agriculture, Home Economics, and the Natural Sciences.

In addition to presenting the 15 units in high school, the principal's recommendation is also required.

Admission by High School Equivalency Examination

Applicants who have not completed the high school course because of interruptions in their education, and who have attained the age that they ordinarily would have finished high school; or applicants who have attained the age of 16, and who have demonstrated superior ability and achievements in their studies may be admitted to the University upon passing the High School Equivalency Examination. Information on the requirements and procedures for taking the examination will be given by the Chairman of Admissions upon request.

High school graduates who have entrance deficiencies may be admitted upon passing the High School Equivalency Examination.

Admission with Advanced Standing from Accredited Institutions

Students who have attended other accredited colleges or universities may apply for admission to Tennessee A. and I. State University with advanced standing by fulfilling the following requirements:

1. An official record of transcripts from all high schools, colleges, or universities previously attended must be placed on file in the Office of Admissions, whether or not the applicant wishes to receive credit for such work.
2. The courses presented for advanced credits must be substantially equivalent to those offered at Tennessee A. & I. State University.
3. A student who has failed in his work at another institution and is not entitled to continue there will not be admitted to the University.
4. The applicant must have been granted honorable dismissal from the last institution attended.
5. Students who have attended other colleges or universities cannot be admitted as freshmen solely on the basis of their preparatory school records.
6. A student who fails to present credits from all colleges which he has attended when first admitted to the University must forfeit the right to later claims of such credits after admission.

Admission with Advanced Standing from Non-Accredited Schools and Professional or Vocational Schools

Applicants who present credits from non-accredited collegiate schools will be admitted by examination only. The examinations will cover all courses and/or fields for which transfer credits are sought.

The University does not accept credits for advanced standing from non-collegiate vocational institutions, nor from collegiate professional institutions which do not offer the bachelor's degree or its equivalent.

Admission with Special Adult Student Standing

Applicants who do not meet requirements for full admission to the University and who are adult citizens of Tennessee may be admitted to the University by giving satisfactory evidence that they are prepared to take the courses advantageously that are open to them. Such courses shall be confined generally to the freshman level, and will not grant credit toward candidacy for a degree. Applicants for admission on the above schedule are required to present to the Chairman of Admissions in advance of their coming to the University a detailed statement on their preparation and plans for study at the University.

This status will not be granted to recent high school graduates, nor to graduates of accredited schools, except in unusual cases.

Admission to the Upper Division

To be eligible for admission to the upper division (junior and senior college standing), the applicant must have passed at least nine-tenths of the numbers of hours required in the first two years of the curriculum under which he is registered and must also have a cumulative average of "C", 2.0, in all course work previously taken. Transfer students must present the minimum equivalent as required of students who have previously attended this University.

Admission to The Graduate School

Requirements for admission to the Graduate School at the University are outlined on page 48.

Readmission to the University

A student in good standing with the University whose attendance has been interrupted for one quarter or more must apply for readmission and submit a notarized statement to the effect that no other college has been attended. Re-entrance applications will be sent from the Office of Admissions upon request.

Re-entering applicants must receive notice of approval before arriving at the University.

A student whose attendance at the University has been interrupted one quarter or more while on scholarship probation (see page 41) must, in addition to making application for readmission, satisfy the Committee on Admissions and Scholarship that his or her scholarship will be raised at least to the minimum passing standards of the University. Such a student will be readmitted on probationary status, and will be accorded the privilege of removing the probation the same as if the interruption in University attendance had not occurred.

A student who has been dropped from the University for poor scholarship may be readmitted only by special permission of the Committee on Admissions and Scholarship, and the Administrative Council.

CLASSIFICATION OF STUDENTS

All students of the University must be classified in one of the following categories:

Freshmen: those who have passed less than 48 quarter hours.

Sophomores: those who have passed at least 48 quarter hours but less than 96 quarter hours.

Juniors: those who have completed more than 96 quarter hours but less than 144 quarter hours and have an average of "C" (2.0) in all work taken.

Seniors: those who have completed 144 quarter hours or more and have an average of "C" in all work taken.

Specials: those who are either lacking in the entrance requirements, or wish to pursue particular studies without reference to graduation, may be admitted with the permission of the Vice President of the University.

Specialized Training: those who are pursuing some terminal trade course without reference to qualification for a degree.

Unclassified: those whose records from other schools attended are incomplete in the Office of Admissions.

Graduate Students: those who have received college degrees from accredited institutions, and who have been admitted to the Graduate School.

REGISTRATION

The Regular Registration Period

All students are expected to register and pay their fees before the day designated on the University Calendar for classes to begin. Sufficient time is allowed, during registration, for the student to consult with the major adviser, and to complete all procedures necessary for admission to classes. Written directions for registration procedures, and the necessary registration forms, will be handed the beginning freshman and other new students during the orientation period. Other students will receive written directions and registration forms when they present themselves for registration.

Late Registration

Late registration begins after the last day designated for the regular registration. Late registration is allowed by special permission only. A fee of $1 per day is charged for each day of late registration up to five days.

Students who are permitted to register late must assume the same obligations for course requirements as those who register on time. For late registrants, the teacher may: 1) make extra hour assignments for the class periods missed, 2) give "make-up" assignments without specific designated hours, or 3) expect the student to complete all course requirements without making special assignments.

Resident Address

The local and permanent resident addresses must be written legibly and in full on all registration forms that require them. Any change in either address should be reported to the Office of Admissions without delay. Forms for the change of address may be obtained from the Office of Admissions upon request.

Physical Examination

All entering freshmen and new students are required to take a physical examination under the supervision of the University student health service staff. Appointment for the examination must be made at the registration center. A student who fails to report for the examination as scheduled will be suspended from all classes until the examination is taken.

Completion of Registration

The student is officially registered only when:

1. All forms have been filled out and returned to the designated registration stations.
2. All fees have been paid; and the Student Assessment Card has been duly signed and stamped by the Bursar.
3. The physical examination has been completed.

Class Loads

The class load is determined by the number of credit hours carried by the student in all courses taken during any quarter. Most non-laboratory courses at the University require the same number of weekly clock-hours class attendance as the course allows quarter credit hours. Courses that require laboratory work or the development of other kinds of skills usually require more clock-hours of class attendance per week.

The student is expected to complete all required clock-hours for each course. The class load of the student becomes official only upon the approval of the major adviser, and after all other registration procedures have been completed.

Maximum and Minimum Class Loads. The maximum number of credit hours allowed per quarter for undergraduate students is eighteen (18), except in departments where the outlined curricula require more. One credit hour of required physical education or one credit hour of choir, but not both, may be added to the above maximum number of hours allowed without special permission.

A maximum of fifteen (15) credit hours may be pursued per quarter by graduate students.

A minimum of twelve (12) credit hours per quarter is allowed for a regularly enrolled student. A student may pursue less than twelve (12) credit hours per quarter only by special approval of the Committee on Admissions and Scholarship, and the Administrative Council.

Applications for taking special hour loads must be filed in the Office of the Vice President of the University, with the approval of the major adviser, during the registration period.

Probationary Student Class Loads. A student who incurs scholarship probation in any quarter (see page 38) will be allowed to carry a maximum of 15 and a minimum of 12 credit hours in subsequent quarters until the probation is removed.

Change of Program

Dropping or Adding Courses: A student may drop or add courses up to the end of the tenth calendar day after the first scheduled meeting of the class. To drop or add a course after the completion of registration, the student must obtain the signatures of approval from the teachers of the courses involved and of the major adviser. This approval must be executed on the official form which may be obtained from the Office of Admissions.

After dropping and/or adding courses, the total number of quarter credit hours should not be less than 12 nor more than 18 without special permission.

A student who withdraws from a class without having filed with the Chairman of Admissions a completed official Drop Form will be awarded a grade of "Failure" for that course.

Change of Major Field: In order to change from one major to another, the student must obtain the official "Change of Major Form" from the Office of Admissions and complete it with the signatures of the adviser of the program to be taken, the adviser of the program to be discontinued, and the Vice President. All records of the student must be transferred from the former to the new adviser.

CLASS ADMISSION AND ATTENDANCE

Admission

A student is officially admitted to class only when the teacher has on file a card which has been validated by the Office of Admissions. Students are not permitted to attend classes unless the teacher has in hand the necessary validated course card. It is the responsibility of the student to see that the teacher has in hand the necessary validated course card.

Class Auditors

Regularly enrolled students may enter classes as auditors with the approval of the major adviser and the teacher of the course. Before attending the class, however, an auditor's permit must be filed in the Office of Admissions, whereupon the office will release to the teacher an official course card marked "Audit." A fee of $1 is required for each class audited.

Persons other than regularly enrolled students may be permitted to audit classes only with the consent of the Chairman of Admissions and with the approval of the teacher of the course. Such persons must register, pay the auditor's fee, and check to see that the teacher has in hand the necessary "audit" course card for each course elected to audit.

Auditors are not under obligations of regular attendance, class preparation, recitation, or examination; nor do they receive credit. They may not take part in class discussion or laboratory or field work. At the end of the quarter, the "audit" course card will be marked "No Credit Audit" by the teacher and returned to the Office of Admissions.

Class Attendance

It is a regulation of the University that teachers keep accurate record of all class attendance. Regular and punctual attendance are required. Therefore, the student's attendance record becomes an important part of his personnel data.

A student who fails to attend class regularly may, upon the recommendation of the teacher, be asked to withdraw from the course with a grade of "Failure," or, may receive a penalty grade for non-attendance, regardless of the quality or performance while in attendance.

Absences

A student knowing that he or she will be absent from classes will make advance arrangements with the respective teachers for the absence.

The student who absents himself from class is under obligation to perform all requirements of each course in which he is registered, regardless of the cause or causes of absence. An "excused absence" only gives a student the privilege to make up the work missed while absent from class, and he is not "excused" from the proper and prompt performance of the class assignment. In cases of "unexcused" absences from classes, the teacher may refuse the student the privilege of performing delinquent assignments.

All official excuses for absences from classes must be approved by the Vice President of the University.

Whenever in the opinion of the teacher a student is absenting himself from class or is habitually tardy in such a manner as to constitute an infringement of University discipline and an impairment of good scholarship, he shall warn the student, and report same, with a record of his class absences, to the Office of the Vice President. If improvement is not effected thereby, the teacher may request the Vice President to drop the student from class with a grade of "F".

When a student has absented himself from class the total number of times the class meets per week, he is to be reported to the Vice President for disciplinary action.

Class Absences Before and After Holidays: A student who fails to attend the last meeting of each class before a holiday or the first meeting of each class following a holiday shall incur three absences for each class not attended, and will be accessed a penalty of $5 for any absences on either day.

Tardiness and Leaving Classes

The student is expected to be in class on time and remain during the full class period. Tardiness to class and leaving class before the end of the period constitute delinquencies; except when granted by the teacher.

A student who is late to class and/or leaves the class before the end of the specified class period without reasonable cause may be marked absent for the entire class period at the discretion of the teacher.

GRADING SYSTEM

Course grades for undergraduate and graduate students are awarded as follows:

"A" (Excellent) .....4 quality points per quarter hour
"B" (Good) .....3 quality points per quarter hour
"C" (Average) .....2 quality points per quarter hour
"D" (Poor) .....1 quality point per quarter hour
"F" (Failure) .....—1 quality point per quarter hour
"I" (Incomplete) .....0 quality points per quarter hour
"W" (Withdrawn) .....0 quality points per quarter hour
"P" (Passing in non-prepared courses)..0 quality points per quarter hour

"I" is given to a student whose recitation is satisfactory, but whose grades are withheld on account of failure to complete some required portion of the course, examination, laboratory, shop, or parallel exercises. The incomplete (I) grade will be changed to a grade of "F" if not removed within one year.

"W" is recorded for the student who officially withdraws from a course.

"F" is given to a student who fails to do a passing quality of work or who fails to remove a grade of "I" within the period of one year.

"P" is awarded in courses which do not require class preparation or in courses which do not offer credit.

Scholarship Standards

Freshmen students are required to maintain a minimum cumulative average of 1.5 quality points. A student who fails to maintain a cumulative average of 1.5 at the end of the first or second quarter of the freshman year is placed on scholarship probation; and will be dropped from the regular academic program at the end of the third quarter if the cumulative average is less than 1.5 quality points.

Sophomore students are required to maintain a minimum cumulative average of 2.0 quality points. A student may be admitted to the sophomore year on scholarship probation with a minimum average of 1.5 quality points, and will be dropped from the regular academic program if the cumulative average falls below 1.5 quality points at the end of any quarter of the sophomore year.

Students of Junior and Senior classification are required to maintain a minimum cumulative average of 2.0 quality points. A student with less than a 2.0 quality point average will not be admitted to the junior or senior year. If the cumulative average falls below 2.0 quality points at the end of any quarter of the Junior or Senior year, the student will be placed on scholarship probation; and will be dropped from the regular academic program if the cumulative average is less than 2.0 quality points at the end of the following quarter.

A minimum cumulative average of 2.0 quality points is required for graduation in all bachelor degree programs.

Graduate students must maintain a minimum scholarship average of 3.0 quality points (B), and a minimum of 2.0 quality points (C) in each course presented for graduate credit.

A student who is dropped from the regular academic program for poor scholarship is eligible for admission to Specialized Training. This program does not lead to a degree; nor may any of this work be used to qualify the student for readmission to the regular academic program.

Removal of Deficiency Grades

Grades of Incomplete. "Incomplete" is a temporary grade which must be removed from the student's permanent record within one calendar year from the date the grade was awarded. If all requirements of a course in which the "I" was awarded are not met within one year, the grade of "I" will be changed to a grade of "Failure" (F). The student is responsible for initiating all necessary steps to remove the deficiency grade.

Repeating Courses. On the undergraduate level, courses may be repeated for improving the quality of work and the grade. All grades, except an "I," will remain as a part of the permanent record. However, if a course is repeated, the last grade only will be counted toward the cumulative average. After a final grade has been awarded, a course must be repeated if a student wishes to improve the grade for that course.

A student should repeat courses in which grades of "F" or "D" were awarded before attempting to advance to the next class level if the cumulative average is less than the required scholarship standard.

For regulations governing graduate students, see page 51.

EXAMINATIONS

Regular Examinations

Examinations are required in all courses except purely laboratory subjects. In laboratory subjects the teacher shall determine the requirements for the satisfactory completion of the course. Final examinations are held at the end of each quarter, and at the end of each summer term.

If conflicts occur in the schedule arranged for the examination, the student should report to the Office of the Vice-President.

Absences from Final Examinations

A student who fails to take the final examination in a course will be awarded an "absent" (x) grade for the examination. If the student's grades are of passing quality up to, but not including, the final examination, he shall receive a grade of "Incomplete" (I) for the course; if, however, the performance is of failing quality up to the final examination, a grade of "Failure" (F) will be awarded.

A senior who has earned an "I" in any subject, or who is absent from the final examination during the last quarter. may be given an opportunity to remove this deficiency before the close of the quarter, but not later than one week before commencement. Only students unavoidably prevented from taking the special examination in accordance with the foregoing arrangement will be permitted to take them at a later date, and then only upon payment of two dollars. Before a student may remove an "absence" grade, he must present his teacher a permit from the Vice President.

Issuance of Grades

After the close of each quarter, the grades of the student will be sent to the parents or guardians and to the major adviser. The student may obtain a copy of the grade report by request at the Office of Admissions.

At the beginning of the senior year, a photostatic copy of the student's entire record will be sent to the major adviser.

The student may obtain a copy of his transcript for $1.

Transcripts

To be official, a transcript must bear the seal of the University. Official transcripts are not given to students or alumni, but are mailed directly to the institution or persons considering the applicant for admission or employment.

Withdrawal From the University

To withdraw officially from the University, one must make application on the form provided by the Office of the Vice President. The applicant must receive official approval and signature of the Chairman of Admissions.

REQUIREMENTS FOR THE BACHELOR'S DEGREE

Four regular academic years of collegiate study at the University are ordinarily required for the bachelor's degree. Under the emergency accelerated program of the University, a student may complete the degree requirements of most departments in approximately three calendar years by pursuing a full class schedule during the regular terms and in consecutive summer terms.

The residence requirement may be reduced by study in Extension in proportion to the credits earned up to 48 quarter hours, the equivalent of three quarters of study.

Transfer students must spend at least one academic year in residence at the University and earn while in residence not less than the forty-five quarter hours of credit.

All candidates for the bachelor's degree must spend the senior year, or its equivalent (the last forty-five credit hours offered for the degree and the last nine months), in residence at this University.

Quarter Hour and Course Requirements

The minimum requirement for graduation from any department at the University is 191.0 quarter hours. The quarter hours required in each major field are stated in the respective departmental curriculum outlines. Most departments require forty-eight quarter hours in the major field.

The student is obligated to complete the required hours in the courses listed in the respective departmental curriculum outlines unless changes are approved by the head of the department in the major field, and the Chairman of the School.

English Proficiency Requirement

Students are expected to maintain a satisfactory standard of oral and written English throughout the University course. Any student may be recommended by a member of the faculty for an examination in English; and, if found deficient by the Committee on Student English, he will be required to take without credit such further work in English as the Committee may direct.

The Junior English Proficiency Examination

Candidates for the bachelor's degree are required to pass a test in the use of simple expository English. The test is administered in the junior year during the third week of the winter quarter and the third week of the first summer term.

Those who fail the test shall be required by the Committee on Student English to pursue further work until a satisfactory proficiency in English is demonstrated.

All undergraduate transfer students, regardless of classification, are required to pass the test before graduation.

The Senior Project

All candidates for a bachelor's degree must complete a senior project. The project may be a literature or laboratory investigation, a collection or a compilation. The outcome of the project must be written in the form of a junior thesis of not less than one thousand, nor more than three thousand words. It must be typewritten and organized according to the approved style used by the University.

The project must be started at least one quarter prior to the final quarter of residence at the University, and must be completed at least one month before graduation. The senior project must be scheduled the same as any other course at registration time. It may be taken for three hours credit or none.

The Comprehensive Examination

Some departments require their major students to take a comprehensive examination to test for general knowledge. A student who in the judgment of a departmental examining committee fails the examination is obligated to perform such work as the committee may assign to satisfy this requirement, and will be approved for graduation only after the committee so recommends.

Language and Science Requirements for the Bachelor of Arts Degree

Candidates for the Bachelor of Arts degree must complete in addition to other requirements two years of college work in a modern foreign language; and two years of laboratory science, or one year of a laboratory science and one year of mathematics.

Tacher Certification

Most curricula at the University leading to the bachelor's degree make provisions for the training of teachers in the major field of specialization. Students are usually advised to qualify for a teaching certificate. However, a student may waive this requirement by submitting a signed affidavit that he does not wish to qualify for a certificate.

Degrees with Honors

The degree of Bachelor of Science or Bachelor of Arts with honors is awarded *with distinction* or *with high distinction*. To be graduated *with distinction,* the student must earn an average of at least 3.0. To be graduated *with high distinction,* the students' average must be not less than 3.5.

Application for Bachelor's Degree

1. A candidate for a degree must file with the Chairman of Admissions a "Senior Standing Form" six months prior to the date of graduation. This must be approved by the candidate's major adviser, departmental head, and the Vice President of the University.
2. An "Application for Degree" form must be filed in triplicate in the Office of Admissions by the student's school chairman not later than the tenth day of the student's final quarter of registration.
3. The diploma fee must be paid and all accounts cleared at least one month prior to the date of graduation.

For the master's degree requirements, see page 50 in the Graduate School announcement.

PROVISIONS FOR GRADUATE AND PROFESSIONAL EDUCATION FOR TENNESSEE STUDENTS

Veterinary Medicine

Under authority of Chapter 82, Public Acts of 1949, the State of Tennessee has entered into a contract, through the Board of Control of the Southern Regional Council on Education, with the Tuskegee Institute whereby Tuskegee agrees to enroll two qualified Freshman students from the State of Tennessee each year who will pursue courses in Veterinary Medicine. A list of persons who are qualified and eligible for admittance to Tuskegee will be submitted to Tuskegee Institute by the President of Tennesse A. & I. State University. Therefore, persons who are interestd in taking courses in Veterinary Medicine should write to President Walter S. Davis, Tennessee A. & I. State University.

Nurse Training

Under authority of Chapter 82, Public Acts of 1949, the State of Tennessee has contracted with Meharry Medical College whereby citizens of Tennessee who wish to take nursing and who are otherwise qualified to pursue a course in nursing may be enrolled. Therefore, qualified persons who wish to pursue courses in nursing should make application to Meharry Medical College for entrance.

Medical and Dental Training

Under authority of Chapter 82, Public Acts of 1949, the State of Tennessee has entered into an agreement with Meharry Medical College, through the Board of Control for the Southern Regional Council on Education, whereby Meharry Medical College agrees to provide a quota of twelve places in the School of Medicine at the Meharry Medical College and five places in the School of Dentistry at the Meharry Medical College for students from the State of Tennessee to be selected from applicants certified by the Commissioner of Education. Persons who are citizens of the State of Tennesse and who wish to pursue courses in medicine or dentistry should apply to the Meharry Medical College for entrance in the School of Medicine or the School of Dentistry.

State Scholarships

Under the provisions of Chapter 43, Public Acts of 1941 and the regulations of the State Board of Education implementing this Act, scholarships are awarded to citizens of Tennessee who wish to pursue courses offered at the University of Tennessee but not offered at the Tennessee A. & I. State University or Meharry Medical College. The amount of the scholarship is the cost of tuition and fees at the institution selected by the applicant and approved by the Commissioner of Education, plus the difference in round-trip coach railroad fare from the applicant's home to the site of the institution selected and from the applicant's home to Knoxville, Tennessee.

PROGRAMS FOR VETERANS

The Office of Veterans' Affairs is maintained for the following purposes:

To inform military personnel about to be discharged or veterans already discharged of their rights under the provisions of the Servicemen's Readjustment Act (Public Law No. 346, 78th Congress).

To explain how these benefits apply to Veterans (men and women) who wish to enroll in Tennessee A. & I. State University.

To give counselling service to veterans when they register in the University and

To serve as a liaison between governmental and local agencies and the University on problems relating to the Veteran for wholesome adjustment.

Admission

All veterans interested in the education offered by Tennessee A. and I. State University should address inquiries to the Office of Veterans' Affairs, either using the veterans' application blank or writing a letter.

All veterans who are entering the University as new students must file an application on the approved veterans' application blank, and submit previous scholastic record from either high school or college and a photostatic copy of honorable discharge. Applications must be on file one month prior to date of registration. Final decisions on admission are in the hands of the Committee on Admissions. All scholastic records should be submitted to the Committee on Admissions for evaluation.

All former students who are now veterans must file an application for readmission on the veterans application blank and return to the Office of Veterans' Affairs one month prior to re-entrance.

In order to expedite time in receiving subsistence checks, veterans are advised to contact their local Veterans Administration Office at the earliest possible date after discharge to apply for educational benefits under the G I Bill of Rights. If the veteran is eligible for training, he will receive a letter of Eligibility and Entitlement which he is requested to bring to the University on the day of registration.

Veterans Who Teach During Regular School Terms— In-Service Teachers

A veteran who pursued a course, pointing directly to a graduate degree, in college or university during the summer session 1950, who is regularly employed as a teacher during the school year 1950-51, pursues graduate study during the summer session of 1951 (or is regularly enrolled in a summer term on or before July 25, 1951) and is regularly employed as a school teacher during the school year 1951-52, may be permitted to continue graduate study during successive summer sessions following employment as a teacher during successive school years and that this shall be deemed to be continuous pursuit of his course of education or training within meaning of the governing law and regulations. This is limited to the pursuit of graduate study only, and to situations involving consecutive summer sessions following the teaching employment in consecutive, succeeding school years. Where a veteran teacher ceases to be employed in or for any school year, he will have no right to further education under the existing law.

Courses Offered

Qualified veterans are permitted to enroll in any department that is open to other students with the same qualifications.

Special terminal courses are offered to those persons who are of sub-college level, or to those who do not plan to work toward a degree. Upon satisfactory completion of work in these courses, the student will receive a certificate of attainment.

The Vocational Trade Department offers the following courses:

Aero Mechanics	Insurance
Arc and Electric Welding	Machine Shop
Agriculture	Plumbing and Pipe Trades
Auto Mechanics	Repair of Household Appliances
Aviation Flight Training	Secretarial Science
Bricklaying and Trowel Trades	Sheet Metal
Carpentry and Cabinet Making	Shoe Repairing and Leather Work
Drafting	Upholstery
Electricity and Radio	Woodwork

The general entrance requirements will be those required for admission to high school or above. It is preferred that veterans who enroll for these courses will have had at least two years of high school work; however, the institution will not deny any veteran the opportunity of preparing for gainful employment if he has not had two years of high school work. A trainee must be able to read understandingly literature in his chosen field.

Class Attendance

Veterans are required by the Veterans Administration to attend classes regularly. When a veteran is absent three days in any thirty day period without notice to the Office of Veterans' Affairs, whether the absence is because of illness or for some other good reason, the Office of Veterans' Affairs is required on the third day to notify the Veterans Administration on the assumption that the training period has been interrupted or discontinued; whereupon, the Veterans Administration will discontinue the veteran's subsistence allowance.

Veterans' training, conduct, and progress must at all times be maintained in a satisfactory manner, conforming to the ideals of the University.

SUMMER QUARTER

General Program. The Summer Quarter is conducted principally for advanced undergraduates, special in-service, and graduate students. Several special workshops and institutions are conducted for in-service teachers, supervisors, and administrators.

The current year graduates from high school are not accepted for admission to summer school except by special permission.

The Summer Quarter is divided into two six-weeks terms. Three lecture courses offering a total of 9 credit hours, or two lecture courses and one laboratory course offering 10 credit hours, may be taken during one term, but the total for both terms may not exceed 19 credit hours without special permission.

THE GRADUATE SCHOOL

HUBERT B. CROUCH, *Chairman*

Graduate studies for the master's degree are available in thirty-two departments at Tennessee A. & I. State University.

Curricula leading to the *Master of Arts* degree are offered in Biology, English, History, Mathematics, Modern Foreign Languages, Political Science, Social Administration, Sociology, and in Speech and Drama.

The *Master of Science* degree is offered in Agricultural Education, Agronomy, Animal Husbandry, Biochemistry, Biology, Business Administration, Business Education, Chemistry, Clothing and Textiles, Educational Administration, Educational Psychology, Educational Supervision, Elementary Education, Foods and Nutrition, Geography, Health and Physical Education, History, Home Economics Education, Industrial Education, Mathematics, Music Education, Physics, Political Science, Poultry Husbandry, Psychology, Science Education, Secondary Education, Sociology, and in Speech and Drama.

The program of the Graduate School is not a fifth year of college work. Earning a bachelor's degree does not necessarily imply preparedness to pursue graduate studies; especially with reference to undergraduate performance, aptitude, maturity, prerequisites, and vocational preference. Graduate study is a privilege extended to the superior student who has not only a very sincere and sustained desire for further learning, but one who fully expects to make maximum use of his advanced training in a predetermined vocation or profession.

The graduate student is concerned primarily with inquiry into knowledge rather than with mere retention of subject matter in prescribed courses. Each candidate is therefore expected to show evidence of satisfactory knowledge in the major field, and to make a significant research contribution before the degree is awarded.

Research is required in all graduate departments for the master's degree. Aside from providing resources for formal and organized inquiry, research is also designed to test for such important qualities as initiative; objectivity; resourcefulness; aptitude; ability to do original thinking, planning, and organizing; and to communicate ideas. Thus, the student should understand clearly that the completion of the required courses with satisfactory grades in the minimum time in residence does not constitute the principal requirement for the master's degree.

Admission

Applicants for admission must have a bachelor's degree and other qualifications as outlined here.

Regular Student Status. Admission to regular student status requires (1) a bachelor's degree earned from an accredited college or university, (2) a cumulative undergraduate average of 2.5 (C+) quality points, (3) completion of all undergraduate prerequisites in the graduate major field, (4) a quality point average of 3.0 (B) in the undergraduate courses that are required for the graduate major.

Provisional Student Status. Applicants who have a bachelor's degree, but who are deficient in any other of the foregoing requirements, may be admitted to the Graduate School on provisional student status, and will remain so until all deficiencies are removed. But under no condition will an applicant be admitted whose undergraduate cumulative quality point average is less than

2.0 or C. For requirements on removal of deficiencies, refer to page 51 on "Degree Requirements."

Admission Requirements for Graduate Credit. In order to receive graduate credit for work done in any department or other academic area of the University, the student must be properly admitted and enrolled in the Graduate School before the work is taken. This applies specifically to regularly enrolled advanced undergraduates, extension students, workshop participants, part-time residence students, and regular graduate students.

Admissions Procedures. Application forms may be obtained from the Office of Admissions at the University. The application and transcript of the undergraduate record should be submitted to the Office of Admissions at least thirty days before enrollment. If the applicant is not a graduate of Tennessee A. and I. State University, he must request the institution from which he received the bachelor's degree to send the transcript to the University. Action on applications will be withheld until the transcript is received.

The applicant should not report for registration until official notice of acceptance has been received.

Registration

Registration is required of all students. This includes the completion of all registration forms, obtaining approval of courses and class schedules, enrollment, appointment for physical examination, and payment of fees. Class attendance is not permitted before the completion of all registration procedures. Further directions will be given at the registration center. Also, see the Tabular Summary on page 54 of this Bulletin.

Late Registration. Students are expected to complete all registration procedures within the announced registration period, and to begin class attendance at its first meeting. In some exceptional cases where satisfactory reasons have been established, a student may apply for late registration. This requires the approval of the teacher of each course, the consultant, the Chairman of the Graduate School, and the Chairman of Admissions. Students approved for late registration must pay a $5 late registration fee and assume full responsibility for the completion of all course requirements.

Class Loads. The normal class load for graduate students is fifteen quarter credit hours. Students pursuing laboratory courses are permitted to take sixteen credit hours. A maximum of nine credit hours is allowed in a six-week term of the summer session; but the total of two consecutive six-week terms may not exceed the maximum allowed in a regular quarter.

A student who has maintained an average of 3.5 quality points after two full quarters of graduate study may be allowed to take a maximum of eighteen credit hours in one quarter, with the approval of the consultant and the Chairman of the Graduate School.

A student who registers for less than twelve credit hours in one quarter will be classified as part-time.

Change of Program. Any changes in the class program after enrollment require the approval of the teachers of the class involved, the consultant, the Chairman of the Graduate School, and the Office of Admissions. The required forms for a change of program may be obtained in the Office of Admissions.

Withdrawal. A student may withdraw from the University at any time during the quarter before the beginning of the official examination period.

However, a student who is earning failing grades may not withdraw after fourteen days preceding the end of the quarter, except that special approval is granted by the consultant, the Chairman of the Graduate School, and the Vice-President of the University.

A student who is required to withdraw for active military duty after completing four-fifths of a quarter's work may receive full credit with the recommendation of each teacher and the approval of the Vice-President of the University.

Withdrawal for any reason must be approved before the student takes leave from the University. A student who ceases to attend classes or who fails to take the final examinations without official approval will receive grades of "F" in all courses at the end of the quarter. Withdrawal forms may be obtained in the Office of Admissions.

Re-Entrance. Any student who was not enrolled in the University at the end of the preceding quarter, except for summer school, must apply and be approved for re-admission. Forms for re-entrance may be obtained in the Office of Admissions.

Veteran Status. All veterans who expect to receive compensation under a Federal training program must be approved by the Office of Veterans Affairs at the University for registration as well as for withdrawal.

Degree Requirements

Each student is expected to become thoroughly familiar with the three basic guides in his graduate program. The first embodies the general policies and regulations of the University, the second consists of the Graduate School requirements that apply to all graduate students, and the third is the contract between the student and his graduate department. The first two are set forth as conditions under which the student accepts admission to the University and the Graduate School. The third is a written agreement between the student and his major department as outlined in the student's program of study.

Program of Study. Every graduate student is required to outline a program of study under the guidance of the major departmental consultant. This program is a signed record of all basic requirements that the student must meet to qualify for the master's degree. Three copies should be made as soon as possible after the beginning of the first quarter in residence. One copy each is filed with the consultant and the Chairman of the Graduate School. The third copy is for the student's file. Forms may be obtained from the consultant.

Undergraduate Requirements. All prerequisites to the graduate major field must be completed before the student is permitted to pursue a full graduate program. Normally, a student would be expected to select a graduate major in the same or a related field to his undergraduate major.

Residence Requirements. A minimum of one academic year (three quarters) of residence study is required for the master's degree. However, only those students whose course and research performance prove to be substantially above the minimum scholarship standards of the Graduate School should expect to complete all requirements for the degree within three quarters. Several graduate departments normally require more than one academic year of residence study in order to provide sufficient time for research and the thesis.

Graduates from non-accredited institutions and those who have not pursued formal studies during the preceding six years should expect to spend more

than three quarters in residence study. Such students may qualify for the master's degree within four quarters by completing a minimum of forty-eight graduate credit hours with at least an average of 3.5 quality points (B+) in the first two quarters (a minimum of twenty-four graduate credit hours) of residence. Five quarters of residence are required, if the average for the first two quarters (a minimum of twenty-four graduate credit hours) is at least 3.0 but below 3.5 quality points.

Major and Minor Requirements. A major in one field without a minor requires forty-five quarter credit hours. A major in one field with a minor in a related field requires a minimum of twenty-seven hours in the major field and eighteen hours in the minor field. Each graduate department determines the number of hours that should be required as majors and minors within the limitations stated above.

The student's selection of a minor must be approved by the consultants in both the major and minor fields.

Core Course Requirements in Education. Major in Agricultural Education, Business Education, Educational Administration, Educational Psychology, Elementary Education, Health and Physical Education, Home Economics Education, and Secondary Education, are required to complete the following courses in addition to others required by the major department:

Education 426. *Philosophy of Education.* 3 quarter hours.
Education 502. *School Administration*, or
Education 502. *School Supervision.* 3 quarter hours.
Education 511. *Principles of Research.* 3 quarter hours.
Education 521. *Educational Statistics.* 3 quarter hours.
Education 543. *Advanced Educational Psychology.* 3 quarter hours.

Scholarship Standards. The minimum cumulative average required in the Graduate School is 3.0 (B) quality points. The minimum grade acceptable for graduate credit in any course is "C". A student who falls below this cumulative average at the end of any quarter will be dropped from the graduate program at the end of the next quarter.

Graduate Record Examination. All graduate students are required to take and pass all parts of the Graduate Record Examination before admission to candidacy. This examination is administered by the University three times a year. Entering students are expected to take the examination the first time it is given after enrollment in the Graduate School. A student who fails any part of the examination may be permitted to take the part or parts failed a second time only. A student who fails any part of the examination a second time will be dropped permanently from the Graduate School.

Removal of Deficiencies. An applicant admitted to the Graduate School who is deficient in undergraduate courses, credit hours, or in the quality of work will be required to pursue one or more of the following plans for the removal of such deficiencies.

Prerequisite Course Deficiencies: Each course deficiency must be removed before enrollment may be permitted in the graduate course of the same series. Graduate credit is not allowed for undergraduate prerequisite courses.

Quality Point Average Deficiencies: An applicant admitted to the Graduate School with a cumulative undergraduate average or prerequisite major

field average of less than 2.5 quality points may take sufficient numbers of undergraduate courses to raise the average to 2.5, or he may qualify for the degree under one of the following conditions. (1) By maintaining a quality point average of 3.5 in the first two quarters (a minimum of twenty-four graduate credit hours), the student may complete four quarters in residence and forty-eight graduate credit hours. (2) By maintaining a quality point average of at least 3.0 but less than 3.5 in the first two quarters (a minimum of twenty-four graduate credit hours), the student may complete five quarters in residence and sixty graduate credit hours.

Repeating Graduate Courses: A course for graduate credit cannot be repeated for the purpose of improving the grade except in unusual cases. Permission to repeat a course for graduate credit may be given by the Executive Committee of the Graduate School after the student has established satisfactory reasons why that privilege should be granted.

Admission to Candidacy. Candidates for the master's degree must file application for admission to candidacy after completing the following requirements: (1) a minimum of fifteen quarter hours of graduate credit earned in at least one quarter in residence study; (2) a minimum average of 3.0 quality points in all graduate courses; (3) passing all parts of the Graduate Record Examination; (4) removal of all undergraduate deficiencies or an approved schedule for their removal; (5) passing the qualifying examination, if required by the major department; (6) selection of the research or thesis title; (7) appointment of the thesis committee; and (8) an outline of the program of study.

Change of Major or Minor. Changes from one major or minor field to another are permissible at any time while enrolled in the Graduate School if the cumulative graduate average is not below 3.0 quality points. Any program changes will require approval of the consultant and the Chairman of the Graduate School.

Credits for Undergraduate Courses. Nine hours of undergraduate course credits may be accepted as graduate credits under the following conditions: (1) that such courses are listed in this Bulletin as offering both undergraduate and graduate credit, (2) that a minimum grade of "B" (3.0) is earned in each course presented for graduate credit, (3) that such courses are not also used to fulfill an undergraduate requirement, and (4) that the student must be enrolled in the Graduate School when such courses are taken.

Credits for Graduate Work Done Elsewhere. A maximum of nine quarter hours of residence work completed at another recognized institution will be accepted as transfer credit. But this credit will reduce neither the minimum residence time nor the minimum number of credit hours required for the degree. It may, however, reduce by six weeks the residence requirements of a department in excess of the one academic year. These credits may also be included in the program of students who are required to complete more than the minimum forty-five hours for the degree. This work may not be substituted for the required courses but it must be in the same or a closely related field to the major or minor. Acceptance of work completed elsewhere will be determined by the appropriate department.

Credits for Workshops. Workshops and special conferences that allow graduate credit are not regarded as regular residence study; and, therefore, may not be applied toward the fulfillment of residence requirements. A maximum of twelve quarter hours is allowed; but the total amount of workshop and extension credit combined may not exceed twelve credit hours.

Credits for Extension Work. Twelve quarter hours may be earned in extension work offered by Tennessee A. and I. State University; but any combination of extension and workshop hours may not exceed twelve. Extension credits will not reduce the minimum residence requirement of one academic year. Such credits, however, may be counted within the required forty-five graduate credit hours; and may reduce by six weeks the residence requirement of a department in excess of one academic year.

No credits will be allowed for graduate work done in extension at another institution.

Foreign Language Requirements. All Master of Arts and several Master of Science programs require a reading knowledge of a foreign language—usually French or German. The specific requirements are given under each departmental statement.

Thesis. All candidates for the master's degree must complete a research problem and write a thesis. A general statement of the research problem should be submitted with the program of study. The Chairman of the Thesis Committee will supervise the research project, and the writing of the thesis progress reports will be required in departmental seminars and by the Thesis Committee. A maximum of six credit hours is allowed for all work relating to the research and writing of the thesis. Departmental courses bearing the numbers 511 and 512 are required for these purposes. Directions and standards for thesis writing may be obtained from the Consultant or in the Office of the Graduate School.

Students who wish to do research or thesis work *in absentia* must present an outline of the proposed work and obtain the approval of the Thesis Committee, the Consultant, and the Chairman of the Graduate School. A maximum of three hours credit in course 511 or 512 will be allowed for approved research or thesis work *in absentia.* Registration is required if credit is to be allowed. The fee is $5 per credit hour.

Thesis Committee. Each prospective candidate for the master's degree must request the appointment of a Thesis Committee at the time the statement of the research problem is submitted. This Committee, appointed by the Chairman of the Graduate School, is composed of three members; one of whom shall serve as Chairman and the Supervisor of the research problem. Members of the Committee must be selected from the Graduate faculty in the major department if the student has no minor; or two members of the major and one from the minor departmental faculty if the student has both a major and a minor field.

Faculty Assistance to Students Not Enrolled. Occasionally it becomes advantageous for candidates who are nearing the completion of their requirements to hold regular conferences or to otherwise use the services of graduate faculty members while not enrolled at the University. The privilege of such services will be granted with the approval of the staff members involved and the payment of a fee of $10 per quarter to the Cashier of the University.

TABULAR SUMMARY OF REQUIREMENTS AND PROCEDURES FOR THE MASTER'S DEGREE

Each student is expected to assume full responsibility for performing the necessary procedures to fulfill all requirements of the Graduate School. The basic regulations are stated elsewhere in this *Bulletin* and in *The Handbook of the Graduate School.*

The following tabular summary is a convenient guide on the duties that the student must perform in addition to the course and research requirements.

Requirement	*Procedure*	*Date*
Admission to the Graduate School	1. Secure application forms from the Office of Admissions	Earliest date possible
	2. Submit application to the Office of Admissions	One month before anticipated enrollment
	3. If not a graduate of this University, request undergraduate institution to send transcript of record to Office of Admissions	Upon receipt of application forms
	4. Receive notice of admission from the Office of Admissions	Before reporting for registration
Registration	1. Obtain permit and directives from the registration center	At registration time
	2. Obtain approval of course schedule from major adviser and the Chairman of the Graduate School	Consult the University calendar
	3. Report to final check station at registration center	
	4. Pay assessed fees to cashier	
Outline of program of study	Obtain approval of major adviser and the Chairman of the Graduate School	Before the end of the first quarter in residence
Graduate Record Examination	1. Apply at the Office of the Graduate School	One month before first examination is scheduled
	2. Report to examiner as directed	See University calendar
Qualifying examination (If required)	1. Obtain approval of major adviser	Examination must be passed before making application for candidacy
	2. Report to examining committee	
Appointment of thesis committee	Obtain approval of the Chairman of the Graduate School	Immediately after passing the G.R.E. and qualifying examinations
Admission to candidacy	Obtain recommendation of thesis committee and approval of Executive Committee of the Graduate School	After at least one full quarter of study
Approval of research program	Submit outline to thesis committee and obtain approval	At least six months before graduation
Foreign language examination	1. Apply to chairman of thesis committee	At least one quarter before anticipated date of graduation
	2. Report to examiner as directed	
Application for Master's Degree	Obtain approval of Chairman of Thesis Committee and the Chairman of the Graduate School	At the beginning of the last quarter in residence
Approval of completed thesis and abstracts	1. Obtain approval of thesis committee	Thirty days before commencement
	2. Submit required copies to the Chairman of Graduate School	
Final Examination	1. Obtain recommendation from Chairman of Thesis Committee	After approval of thesis and abstracts
	2. Apply for examination date at the Office of the Graduate School	When thesis is submitted
	3. Obtain clearance from the office of records and from the Bursar	At least three days before examination
	4. Report to examining committee	As scheduled
Filing the thesis and abstracts	Submit four copies of the approved thesis and abstracts in the Office of the Graduate School	Three days after passing final examination
Photograph	File in the Office of the Graduate School two recent gloss print photographs	When thesis is filed
Commencement participation	1. Arrange for academic regalia through the Librarian	To be announced
	2. Report to the marshal for directions	To be announced
	3. Attend the baccalaureate and commencement exercises	See University calendar

SCHOOL OF ARTS AND SCIENCES

CARL M. HILL, *Chairman*

FACULTY

AREA OF AGRICULTURE

WALTER A. FLOWERS, *Professor of Agricultural Education, Head of the Department of Agricultural Education, and Coordinator of Agricultural Services.*

ROBERT E. HURST, *Professor of Biochemistry, Head of the Department of Biochemistry, and Coordinator of Instruction in Agriculture and Home Economics.*

FREDERICK D. SMITH, *Professor of Animal Husbandry, Coordinator of Technical Agriculture.*

WALTER S. DAVIS, *Professor of Agriculture and President of the University.*

WALLER C. HURLEY, *Professor of Animal Husbandry and Head of the Department of Animal Husbandry.*

MAJOR F. SPAULDING, *Professor of Agronomy and Head of the Department of Agronomy.*

EARLY J. THORNTON, *Professor of Poultry Husbandry and Head of the Department of Poultry Husbandry.*

DAVID A. WILLISTON, *Professor of Horticulture and Landscape Architecture.*

DAVID A. HAMILTON, *Assistant Professor of Agricultural Education and State Itinerant Teacher Trainer in Agricultural Education.*

****HAROLD JONES, *Assistant Professor of Agricultural Engineering.*

***NEAL MCALPIN, *Assistant Professor of Ornamental Horticulture and Floriculture and Head of the Department of Ornamental Horticulture and Floriculture.*

HENRY L. TAYLOR, *Assistant Professor of Agricultural Economics, Head of the Department of Agricultural Economics, and Director of Farm Records and Accounts.*

OZZIE L. ADAMS, *Assistant Professor of Poultry Husbandry.*

HAZO W. CARTER, *Assistant Professor of Olericulture and Pomology and Head of the Department of Olericulture and Pomology.*

SPENCER DAVIS, *Instructor of Animal Husbandry.*

ROBERT H. DERDEN, *Instructor of Farm Mechanics.*

HENRY C. HARDY, *Instructor of Farm Management and Farm Manager.*

WILLIE E. OFFICER, *Instructor of Animal Husbandry.*

FRED E. WESTBROOKS, *Instructor o fAgronomy.*

EDDIE WILLIAMS, *Instructor of Animal Husbandry.*

THEODORE R. WOOD, *Instructor of Animal Husbandry.*

WALTER H. NICKENS, Tuskegee Institute; Completion of Graduate Year in Landscape Architecture, Massachusetts State College. *Landscape Architect.*

AREA OF HOME ECONOMICS

ERNA B. JONES, *Professor of Home Economics Education and Head of the Department of Home Economics Education.*

***On leave for study, 1951-52.
****On leave for military service.

CHRISTINE ALEXANDER, *Associate Professor of Home Management and Head of the Department of Home Management.*
GERALDINE B. FORT, *Associate Professor of Clothing and Textiles and Supervisor of the Department of Clothing and Textiles.*

NORMA P. DILLARD, *Assistant Professor of Foods and Nutrition and Supervisor of the Department of Foods and Nutrition.*
MARY H. GREER, *Assistant Professor of Home Economics Education and Resident Teacher Trainer in Home Economics Education.*
MIRIAM G. TOWNS, *Assistant Professor of Foods and Nutrition.*

RUTH A. MCDOWELL, *Instructor of Child Development.*
CATHERYN B. MCKINNEY, *Instructor of Clothing and Textiles.*
MIRIAM MCTEER, *Instructor of Foods and Nutrition.*
LUTHER B. MILLER, *Instructor of Foods and Nutrition.*
LILLIE B. REDMOND, *Instructor of Home Management.*
MARYLOUISE RITTER, *Instructor of Clothing and Textiles.*
MAMIE G. HAYES, *Part-Time Assistant in Home Furnishing.*

HUMANITIES

Department of English

LAURA M. AVERITTE, *Professor of English.*
ALMA DUNN JONES, *Professor of English and Chairman of Freshman English and Composition.*
CRAWFORD B. LINDSAY, *Professor of English, Head of the Department of English, and Consultant for Graduate Studies in English.*
EARL L. SASSER, *Professor of English.*
HINTON C. JONES, *Associate Professor of English and Chairman of Sophomore Literature.*
MARY F. CARTER, *Instructor in English.*
NORMA B. CONWAY, *Instructor in English.*
JUANITA E. HORNER, *Instructor in English.*
ROBERT J. HUDSON, *Instructor in English.*
KATIE M. MILLER, *Instructor in English.*
HELEN D. SMITH, *Instructor in English.*

Department of Modern Foreign Languages

ALMA T. WATKINS, *Professor of Romance Languages and Head of the Department of Foreign Languages.*
VIRGINIA S. NYABONGO, *Professor of French.*
AUGUSTA E. MERIWETHER, *Assistant Professor of Romance Languages.*
HENRIETTA E. LEVI, *Assistant Professor of Modern Foreign Languages.*
LURELIA HALE FREEMAN, *Instructor in French and Italian.*

Department of Speech and Drama

THOMAS E. POAG, *Professor of Speech and Drama and Head of the Department of Speech and Drama.*
*BENTON A. ADAMS, *Instructor in Dramatic Production and Art.*
WILLIAM D. COX, JR., *Instructor in Speech and Drama.*
MILLICENT DOBBS JORDAN, *Assistant Professor of Speech and Drama.*

*Resigned in August, 1951.

NATURAL SCIENCES

Department of Biology

FREDERICK E. MAPP, *Professor of Biology and Supervisor of the Department of Biology.*
HUBERT B. CROUCH, *Professor of Biology and Chairman of the Graduate School*
HENDERSON K. WOOD, *Professor of Biology.*
CLYDE M. LEATHERS, *Associate Professor of Biology.*
GLADYS B. ADAMS, *Instructor in Biology.*
MARTHA M. ALLEN, *Instructor in Biology.*
GEORGE HULL, JR., *Instructor in Biology.*
*JOSEPH RUCKER, *Instructor in Biology.*

Department of Chemistry

MYRON B. TOWNS, *Professor and Head of the Department of Chemistry.*
CLYDE R. DILLARD, *Professor of Chemistry.*
CARL M. HILL, *Professor of Chemistry.*
MARY E. HILL, *Associate Professor of Chemistry.*
DAVID C. GANDY, *Assistant Professor of Chemistry.*
JAMES U. LOWE, *Assistant Professor of Chemistry.*
*ALFRED S. SPRIGGS, *Assistant Professor of Chemistry.*
J. BURL YELDELL, *Assistant Professor of Chemistry.*
LONNIE HAYNES, *Instructor of Chemistry.*
RUBY M. PRIGMORE, *Instructor of Chemistry.*
*GILBERT W. SENTER, *Instructor of Chemistry.*

Department of Mathematics

ALGER V. BOSWELL, *Vice-President of the University and Professor of Mathematics.*
THEODORE A. LOVE, *Professor of Mathematics and Head of the Department.*
SADIE C. GASAWAY, *Assistant Professor of Mathematics.*
ROBERTA E. ROBINSON, *Assistant Professor of Mathematics.*
ANNIE G. H. SASSER, *Assistant Professor of Mathematics.*
DOROTHY L. CRIPPENS, *Instructor in Mathematics.*

Department of Physics

JAMES R. LAWSON, *Professor of Physics and Head of Department of Physics.*
PETER M. TOLLIVER, *Instructor in Physics.*

Department of Science Education

WILLIAM F. GOINS, JR., *Professor of Science Education and Head of the Department of Science Education.*
CATHERINE A. MARYLAND, *Instructor of Science Education.*

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*On leave 1951-52.

SOCIAL STUDIES

Department of History and Geography

MERL R. EPPSE, *Professor of History and Head of the Department of History and Geography.*

ELSIE M. LEWIS, *Professor of History and Chairman of the Graduate Department of History and Geography.*

RALEIGH A. WILSON, *Professor of History.*

KENNETH A. JOHNSON, *Associate Professor of History.*

MAZIE O. TYSON, *Associate Professor of Geography and Chairman of Department of Geography.*

PRINCESS M. BOWEN, *Assistant Professor of Geography.*

HENRY H. HYMES, *Assistant Professor of Geography.*

LOIS C. MCDOUGALD, *Instructor of History.*

MINGO SCOTT, JR., *Instructor of History.*

Department of Political Science

SUSIE O. BRYANT, *Professor of Political Science and Head of the Department of Political Science.*

*WILLIAM MCINTOSH, *Assistant Professor of Political Science.*

CORNELIUS JONES, *Instructor in Political Science.*

THOMAS A. MCDOWELL, *Instructor in Political Science.*

*Department of Social Administration

*JEROME H. HOLLAND, *Professor of Sociology and Head of the Department of Sociology and Social Administration.*

WILLIAM M. SIMMONS, *Assistant Professor of Social Administration.*

NORA L. ROY, *Instructor in Sociology and Social Administration.*

Department of Sociology

*JEROME H. HOLLAND, *Professor of Sociology and Head of the Department of Sociology and Social Administration.*

SUSIE O. BRYANT, *Professor of Political Science and Acting Head of the Department of Sociology and Social Administration.*

GLADYS B. BUTLER, *Assistant Professor of Sociology.*

RACHEL J. PATILLO, *Assistant Professor of Sociology.*

KATHLEEN POAG, *Assistant Professor of Sociology.*

MABEL LEATHERS, *Instructor in Sociology.*

NORA L. ROY, *Instructor in Sociology and Social Administration.*

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*On Leave 1951-52.
*On leave.
*On leave.

The general purpose of the School of Arts and Sciences is liberal and technical. The courses which make up its curriculum are offered in the areas of Agriculture, Home Economics, the Humanities, the Natural Sciences, and the Social Studies.

Because of the breadth and fundamental nature of its curriculum and the necessity to acquire a reasonable mastery of a single field of concentration, the School of Arts and Sciences provides a basic education for those students planning (1) to enter the professions, (2) to continue in graduate study, or (3) to engage, upon graduation, in the gainful occupations of American life.

Through the School of Arts and Sciences the University grants the Bachelor's degree. The requirements for the degree are satisfied normally in four years.

ENTRANCE REQUIREMENTS

Students are admitted to the School of Arts and Sciences either as freshmen from preparatory or high schools, or with advanced standing from other accredited colleges or universities. For general University regulations governing admission, see page 34.

GRADUATION REQUIREMENTS

Students who expect to qualify for graduation must fulfill the specific requirements of their major department and meet the graduation standards of the University.

BACHELOR OF SCIENCE DEGREE

An undergraduate program in several departments of the School may be completed in four years and leads to the degree of Bachelor of Science. Specific course requirements are described by each department of the School. In addition to fulfilling course requirements of his major department, the student must meet certain general University requirements and graduation standards in order to qualify for the Bachelor of Science degree. A student should decide early in his college career the department in which he wishes to concentrate or major and seek advisement from the head of that department.

BACHELOR OF ARTS DEGREE

In order to qualify for an undergraduate degree, a student must select a field of concentration known as a major. The Bachelor of Arts degree curriculum is offered in several departments of the School. The student desiring this degree should familiarize himself with the general University requirements (see page 43) and meet the specific departmental requirements of his major, governing the selection of courses required for the Bachelor of Arts degree. A special requirement for this degree is the completion of courses in the laboratory sciences and foreign languages.

DEPARTMENTAL CURRICULA

Departmental Regulations Governing Majors and Minors

Supplementary to the departmental regulations governing the selection and pursuance of major and minor fields of concentration, there are certain general regulations which the student is required to meet. These are described on pages 43.

Agriculture:

Students majoring in any department in the Area of Agriculture are required to pursue a general two-year curriculum consisting of 110 quarter hours. The remainder of the required hours is described in each department's curriculum. A minor consists of 18 quarter hours.

Home Economics:

A major curriculum is offered in all departments in the Area of Home Economics, except Child Development. A major in these departments consists of a minimum of 36 quarter hours in courses offered by the department; a minor requires a minimum of 18 quarter hours.

Humanities:

English.—Students majoring in English are expected to pursue at least 45 quarter hours of work in this field; 37 of which must be in courses beyond English 101-2-3 and 221-2-3. A minor in English consists of 36 quarter hours including English 101-2-3 and 221-2-3.

Modern Foreign Languages.—Students who select a foreign language as a major should pursue 18 quarter hours of work in freshman and sophomore courses and a minimum of 27 quarter hours in junior and senior courses. Students choosing a minor should take 18 quarter hours of freshman and sophomore courses and 9 quarter hours of junior and senior courses.

Speech and Drama.—Majors in Speech and Drama are required to take 48 hours in courses prescribed by the department. A minor consists of 18 quarter hours in the following courses: Speech 201-2-3, 301, 303, and 412.

Natural Sciences:

Biology.—A major must pursue the following courses: Biology 111-2-3, 211, 2-3, 311, 332, 333, 431 and 442-3. A minor must pursue the following courses: Biology 111-2-3, 211-2-2, 311 and 442-3.

Chemistry.—Students who major in Chemistry must complete 57 quarter hours of courses as prescribed by the Department. Students who minor in chemistry must complete 36 quarter hours in courses as prescribed by the Department.

Mathematics.—Students who desire to major must complete a minimum of 45 quarter hours of prescribed courses; students who desire to minor, a minimum of 27 quarter hours.

Physics.—A major consists of Physics 221-2-3, 311-2-3, 331-2-3, 412-3 4 and 450 and additional courses to make a total of 45 quarter hours. A minor consists of Physics 211-2-3 or Physics 221-2-3 and additional credits to make a total of 27 quarter hours.

Science Education.—A major consists of a minimum of 75 to 87 quarter hours in science, science education and mathematics.

Social Studies:

History and Geography.—Students taking a major in history and geography are required to complete 36 to 45 quarter hours in this field. A minor consists of a minimum of 18 quarter hours.

Political Science.—Students majoring in political science must complete a minimum of 36 quarter hours in courses prescribed by the Department, excluding Political Science 221-2-3 and 313. Students desiring a minor are required to

complete a minimum of 18 quarter hours in addition to Political Science 221-2-3.

Sociology.—A major consists of Sociology 211-2-3 and 36 quarter hours of additional courses prescribed by the Department. A minor consists of Sociology 211-2-3 and a minimum of 18 quarter hours in 300 or 400 courses.

Social Administration.—A major consists of 48 quarter hours in social administration courses. A minor consists of the following courses: 421, 463, 471 and 15 quarter hours in 300 and 400 courses.

Departmental Curricula

The curriculum of each department of the School of Arts and Sciences is described on the pages that follow.

Agriculture

Agricultural Education and Farm Shop, p. 66
Agricultural Economics, p. 65
Animal Husbandry, p. 72
Olericulture and Pomology, p. 76
Ornamental Horticulture and Floriculture, p. 77
Poultry Husbandry, p. 79
Biochemistry, p. 74

Home Economics

Child Care and Development, p. 84
Clothing and Textiles, p. 85
Foods and Nutrition, p. 89
Home Economics Education, p. 94
Home Management, p. 97

Humanities

English, p. 100
Modern Foreign Languages, p. 106
Speech and Drama, p. 109

Natural Sciences

Biology, p. 113
Chemistry, p. 117
Mathematics, p. 120
Physics, p. 126
Science Education, p. 129

Social Studies

History and Geography, p. 132
Political Science, p. 140
Social Administration, p. 144
Sociology, p. 147

PROVISION FOR PROFESSIONAL TRAINING IN MEDICINE, DENTISTRY, AND NURSING

The State Board of Education of Tennessee and Meharry Medical College have entered into an agreement whereby students classified as residents and citizens of Tennessee will be granted facilities for the study of medicine, dentistry and nursing at Meharry Medical College equivalent to the opportunities offered to students at the University of Tennessee. Residents of Tennessee who meet the proper qualifications will be charged the same tuition in medicine, dentistry and nursing at Meharry Medical College as is charged to students in these professional fields at the University of Tennessee.

PREPARATION FOR THE STUDY OF MEDICINE, DENTISTRY, NURSING, AND LABORATORY TECHNOLOGY

Curricula preparatory to the study of medicine, dentistry, and clinical laboratory technology are offered at Tennessee A. and I. State University in cooperation with Meharry Medical College.

PRELIMINARY STUDY OF MEDICINE

Arts-Medical Curriculum

This curriculum is highly recommended for pre-medical students.

Regularly enrolled students at the Tennessee A. and I. State University who have chosen the following electives: Mathematics 161, 162, 163 (fifteen quarter hours); or 131, 132, 133 (nine quarter hours); Physics 211, 212, 213 (twelve

quarter hours); general chemistry (twelve quarter hours); organic chemistry (twelve quarter hours); Zoology 111, 112, 113 (twelve quarter hours); and who have completed the first three years of the prescribed Bachelor of Arts or of Science curriculum, including at least one half of the required hours of a major and minor, may apply for participation in this plan. Upon successful completion of forty-seven quarter hours of work at the Meharry Medical College in courses acceptable at Tennessee A. and I. State University, the student may become a candidate for the Bachelor of Arts or of Science degree. Upon joint recommendation of the two institutions, the degree will be awarded by the Tennessee A. and I. State University.

PRELIMINARY STUDY OF DENTISTRY

Science-Dental Curriculum

This curriculum requires a minimum of four years of study. The first part of the curriculum is taken at Tennessee A. and I. State University. The course of study is as follows:

Curriculum

Freshman Year	Quarter Hours Credit		
Name of courses	I	II	III
Chemistry III-2-3	4	4	4
Biology 101-2-3	3	3	3
English 101-2-3	3	3	3
French or German 101-2-3	3	3	3
Mathematics 131-2-3	3	3	3
Physical Education 101-2-3 (Women)	1⅓	1⅓	1⅓
Physical Education 101-2-3 (Men)	⅓	⅓	⅓
Air Science I (Men)	1	1	1
	17⅓	17⅓	17⅓

Sophomore Year	Quarter Hours Credit		
Name of courses	I	II	III
Physics 211-2-3	4	4	4
Chemistry 311-2-3	4	4	4
Zoology 332-3; Bacteriology 241	4	4	4
French or German 201-2-3	3	3	3
Psychology 221-2-3	3	3	3
Physical Education 200's (Men)	⅓	⅓	⅓
Physical Education 200's (Women)	1⅓	1⅓	1⅓
Air Science II (Men)	1	1	1
	19⅓	19⅓	19⅓

The second part of the curriculum is taken in the School of Dentistry at the Meharry Medical College. Upon successful completion of the prescribed courses at Tennessee A. and I. State University and Meharry Medical College, the student may become a candidate for the Bachelor of Science degree at this University.

Arts-Dental Curriculum

Because of the increasing competition for entrance into schools of dentistry, it is recommended that the student consider the Arts-Dental Curriculum as providing a more adequate pre-dental training.

The first three years of this curriculum are identical to the first three years of the arts-medical curriculum and are offered at Tennessee A. and I. State University. The second part of the arts-dental curriculum is given at Meharry Medical College.

PRELIMINARY STUDY OF NURSING

Pre-Nursing Curriculum

The pre-nursing curriculum offers the necessary preparation for entrance into a degree program at approved schools of nursing. A student after having successfully completed this curriculum is prepared to enter nurse training leading to the Bachelor of Science degree in nursing. The curriculum is composed of the following courses:

Freshman Year	Quarter Hours Credit
Name of courses	
Chemistry 111-2-3	12
Biology 101-2-3	12
English 101-2-3	9
Mathematics 131-2-3	9
Physical Education 101-2-3 (Men)	1
Air Science I (Men)	3
Physical Education 101-2-3 (Women)	4
Social Science	9

Sophomore Year	Quarter Hours Credit
Name of courses	
Electives	12
History	9
Sociology 211-2-3	9
Psychology 221-2-3	9
Physical Education 200's (Women)	4
Air Science II (Men)	3
Physical Education 200's (Men)	1
Economics 211-2-3	1

CLINICAL LABORATORY TECHNOLOGY CURRICULUM

The Meharry Medical College and the Tennessee A. and I. State University have established a combination curriculum leading to the Bachelor of Science degree and a Certificate in Clinical Laboratory Technology. The student spends a minimum of two years following an essentially prescribed curriculum at the Tennessee A. and I. State University which fulfills the requirements for admission to the School of Clinical Laboratory Technology at the Meharry Medical College. Upon successful completion of the two-year program at the Meharry Medical College and upon joint recommendation of the two institutions, the Bachelor of Science degree is awarded by the Tennessee A. and I. State University, provided the candidate meets the requirements set forth for this combination program.

The first two-years of the combination curriculum are given at the Tennessee A. and I. State University and consist of the following courses:

Name of courses	Quarter Hours Credit
English 101-2-3	9
Zoology 111-2-3	12
Bacteriology (other courses in biology may be substituted, except botany)	8
General Chemistry 111-2-3	12
Organic Chemistry 311-312	8

Name of course	Quarter Credit Hours
Qualitative Analysis 211	4
Quantitative Analysis 212	4
Physics 211-2-3 (recommended elective)	12
Air Science I and II and Physical Education (Men) or, Physical Education (Women)	8

Additional elective courses (to include courses in the humanities and liberal arts) should be pursued. The minimum number of quarter hours required for the two-year program is 90.

AREA OF AGRICULTURE

General Information

The Area of Agriculture offers instruction in the general field of agriculture and gives opportunity for specialized training in the fields of concentration outlined on the following pages. This gives the foundation for those who desire to go directly into farming, to teach vocational agriculture in secondary schools, to do agricultural extension work, or to enter a more specialized phase of the agricultural pursuits.

All freshmen and sophomores take courses as outlined in the General Curriculum. After completing the first two years, the student is ready to enter upon the study of his major field of specialization. Students are required to

pursue one major and one minor subject, and to complete the number of quarter hours indicated in the curriculum.

The following abbreviations are given for the departmental names of the various subjects:

Ag. ..... Agriculture
Ag. Ec. ..... Agricultural Economics
Ag. Ed. ..... Agricultural Education
Ag. Engr. ..... Agricultural Engineering
Agr. ..... Agronomy
An. Hus. ..... Animal Husbandry
Biochem. ..... Biochemistry
Hort. (1) ..... Olericulture and Pomology
Hort. (2) ..... Ornamental Horticulture and Floriculture
Poul. Hus. ..... Poultry Husbandry

GENERAL CURRICULUM FOR FRESHMEN AND SOPHOMORES

Freshman Year	Quarter Hours Credit		
Name of courses	I	II	III
Agriculture 111-12-13	1	1	1
Air Science I	1	1	1
Animal Husbandry 102-3		3	3
Chemistry 111-12-13	4	4	4
English 101-2-3	3	3	3
Mathematics 141-2-3	3	3	3
Horticulture (1) 101-3 (Olericulture and Pomology)	3		3
Physical Education 101-2-3	⅓	⅓	⅓
Poultry Husbandry 101-2	3	3	
	18⅓	18⅓	18⅓

Sophomore Year	Quarter Hours Credit		
Name of courses	I	II	III
Agriculture 201-2-3	1	1	1
Agricultural Economics 202		3	
Agricultural Engineering 202-3		3	3
Agronomy 201-2-3	3	3	3
Air Science II	1	1	1
Animal Husbandry 201	3		
Biology 101-2	4	4	
Agronomy 213			4
Speech 201-2	3	3	
English 211			3
Physical Education 201-2-3	⅓	⅓	⅓
Electives (Approved)*	3		3
	18⅓	18⅓	18⅓

*Majors in the technical fields of Agriculture should elect Physics 201 and 203.

COURSES IN AGRICULTURE

Undergraduate

111-12-13. *Agricultural Orientation.* (3) Required of all freshmen in agriculture and designed to orient them in the life of the university and into the field of agriculture. One meeting per week; one hour of credit per quarter.

201-2-3. *Technical Skills in Agriculture.* (3) Required course for all sophomores. Its main purpose is to improve and develop technical skills in agriculture. Two laboratory periods.

303. *Family Food Supply.* (3) This course deals with the production and preservation of the farm family food supply involving vegetables, fruits, dairy products and meats. Two lectures and two laboratory periods.

311-12-13. *Technical Skills in Agriculture.* (3) Designed to improve the student in the performance of the skills normally expected of teachers of vocational agriculture. Required of all majors in agricultural education. Two laboratory periods.

TERMINAL COURSES IN GENERAL AGRICULTURE

Unit 1. *Farm Management.* A study of operation and organization of farming programs, with special emphasis on farm planning and labor problems.

Unit 2. *Farm Machinery Repair.* Information on the operation and minor repairs of horse-drawn and power-drawn machinery.

Unit 3. *Farm Crops.* A study of different crops and their adaptation to the state of Tennessee with particular emphasis on varieties.

Unit 4. *Soil Conservation and Management.* A study of drainage and rotation of field crops.

Unit 5. *Vegetable Gardening.* A study of garden practices with special emphasis on hot beds and cold frames, varieties of vegetables, use of fertilizers and manures.

Unit 6. *Animal Feeding.* A study of the development of animal feeding with special emphasis on home-grown feeds and balancing rations.

DEPARTMENT OF AGRICULTURAL ECONOMICS

HENRY L. TAYLOR, *Head*

The purposes of the Department of Agricultural Economics are: (1) to train students for jobs as farm operators and farm managers; (2) to train students for graduate study in agricultural economics; (3) to meet the needs of those students in other departments of the University who wish to satisfy course requirements in agricultural economics; and (4) to train students for positions in the government institutions servicing local and national agricultural industries.

This department offers a Bachelor of Science degree. Majors in the department must take 30 quarter hours in agricultural economics and six hours in general economics above the freshmen and sophomore years. Approved electives are available each quarter and are selected in consultation with the major adviser depending on the needs of the students.

All majors must take at least one course in statistics and one course in expository writing. A minor in the department shall consist of 18 quarter hours. The courses selected are dependent upon the needs of the students as advised by his major professor.

CURRICULUM IN AGRICULTURAL ECONOMICS

Junior Year	Quarter Hours Credit		
Name of courses	I	II	III
Agricultural Economics 301-2-3	3	3	3
Agricultural Economics 312		3	
Agricultural Economics 322		3	
Mathematics 311	3		
English 322		3	
Electives (approved)	12	6	15
	18	18	18

Senior Year	Quarter Hours Credit		
Name of courses	I	II	III
Agricultural Economics 401	3		
Agricultural Economics 411	3		
Economics 431	3		
Agricultural Economics 403			3
Economics 433			3
Agricultural Economics 450			3
Electives (approved)	9	18	9
	18	18	18

Courses in Agricultural Economics

Undergraduate

202. *Agricultural Economics.* (3) A study of the historical prespective on present day agriculture; adjustment of agriculture to natural and economic environment; principles of production and compartive advantage of crops and livestock on farms in Tennessee and the United States; land utilization, farm problems, and the government. Two lectures and one laboratory period.

301. *Agricultural Marketing.* (3) A study of the historical development of agricultural marketing; characteristics of consumer demand and the agricultural supply; channels and agencies of distribution; and the costs, functions, and services involved in marketing farm products. Two lectures and one laboratory period.

302. *Farm Management.* (3) The operation of farming as a business; analysis of farm records and accounts; factors affecting profits and size of the farm business; and ways of getting started in farming. Two lectures and one laboratory period.

303. *Farm Organization and Management.* (3) The factors involved in the organization and management of a farm; forms of tenure and leases; and planning the organization and management of a specific farm in Tennessee. Prerequisite: Agricultural Economics 302, or by permission of the instructor. Two lectures and one laboratory period.

312. *Marketing Methods and Problems.* (3) A study of the methods and economic factors involved in the marketing of farm crops, poultry, eggs, livestock, and dairy products; marketing system and marketing costs; supply and demand; and marketing costs reduction.

322. *Farmers' Cooperatives.* (3) History and present status of farmers' cooperatives; what they have done and tried to do for farmers; their problems, finance, and control. Two lectures and one laboratory period.

401. *Tabular and Graphic Presentation of Data*.* (3) The principles involved in the collection, tabulation and interpretation of agricultural data with special emphasis upon the construction and use of tables, charts, and graphs. Two lectures and one laboratory period.

403. *Agricultural Finance.* (3) A study of the kinds and sources of credit for farmers; costs, risks, and returns in agricultural finance. Two lectures and one laboratory period.

411. *Agricultural Policy and Programs.* (3) A study of the local, state, and federal agricultural policies and programs with emphasis on techniques and procedures. Three lectures.

450. *Senior Project in Agricultural Economics Research.* (3) A study and discussion of senior projects on which students have been working (under direction) for at least one quarter. Three lectures.

DEPARTMENT OF AGRICULTURAL EDUCATION

Walter A. Flowers, *Head*

The course in Agricultural Education is designed to prepare students to meet the qualifications required to teach vocational agriculture in secondary schools of Tennessee.

*Approved for graduate credit

Students majoring in this department receive the Bachelor of Science degree in the undergraduate school and the Master of Science in the graduate school.

Students who desire to qualify to teach vocational agriculture in Tennessee must complete a minimum of twenty (20) credit hours in Agricultural Education.

The core or required courses are those outlined in the Agricultural Education curriculum in addition to the twenty (20) hours of Agricultural Education.

For a minor in Agricultural Education a student must complete 17 or 18 quarter hours of credit in the subject. To qualify however to teach vocational agriculture in Tennessee, the student should pursue a major in this field.

CURRICULUM IN AGRICULTURAL EDUCATION

Junior Year	*Quarter Hours Credit*		
Name of courses	I	II	III
Agriculture 311-12-13	1	1	1
Agricultural Economics 302-401	3	3	
Agricultural Education 301-2-3; 311-313	2	1	2
Agricultural Engineering 301-2	3	3	
Agronomy 301-403	3		3
Animal Husbandry 301	3		
Horticulture 403			3
Biochemistry 301	4		
Psychology 211		3	
Psychology 243			3
Electives		7	6
	19	18	18

Senior Year	*Quarter Hours Credit*		
Name of courses	I	II	III
Agricultural Economics 411	3		
Agricultural Education 402-3; 412-22		12	3
Agricultural Engineering 401	3		
Agronomy 302-401	3	3	
Animal Husbandry 302		3	
Agricultural Education 450			3
Education 341	3		
History 491	3		
Political Science 223			3
Electives	3		6
	18	18	15

Courses in Agricultural Education

Undergraduate

301-2-3. *Introduction to Teaching Vocational Agriculture.* (3) A discussion of the philosophy and administration of vocational education in agriculture from federal, state, and local points of view; qualifications and duties of vocational agriculture teachers; definitions and examples of terms; determining the type of surveys to make, annual program of work, and course organization. One lecture.

311-13. *Planning Local Programs of Agricultural Education.* (2) Determining the local needs, use of advisory council, key farmers, procedures in planning the local program, including all day classes, young and adult farmer classes, adult education, and NFA programs. One lecture.

450. *Senior Project.* (3) A minor research project done in agricultural education or in some other department of the area of agriculture as approved by the major advisor, and the writing-up of the results.

402. *Materials and Methods in Special Education for Out-of-School Rural Youths and Adults.* (3) A study of the factors which must be considered in determining what to teach and how to teach out-of-school rural youths and adults. Three lectures.

403. *Special Devices, Reports and Seminar.* (3) The use of special de-

vices to meet special situations; reports to state and county authorities; desirable publicity. Three lectures.

412. *Materials and Methods in the Teaching of Agriculture in the Secondary Schools.* (3) A study of the factors to be considered in determining what to teach and how to teach secondary school students. Consideration is given to the organization of course content based on the needs of the supervised farming program as revealed by an individual farm survey. Three lectures.

422. *Apprentice Teaching.* (6) Observation and apprentice teaching in departments of vocational agriculture. This is done under the supervision of the teacher-trainer and the critic teacher.

AGRICULTURAL ENGINEERING

201. *An Introduction to Agricultural Engineering.* (3) A study of the field of agricultural engineering, power in agriculture, power transmission, belts, gears, mechanism bearings, gauges and measurements and laboratory techniques. One lecture and two laboratory periods.

202. *Farm Mechanics.* (3) A general course in farm shop work to develop skill, judgment and resourcefulness in the selection, care and use of tools and materials for farm construction and repair work. One lecture and two laboratory periods.

203. *Farm Machinery and Equipment.* (3) A general course in farm mechanics dealing with the care, operation, maintenance and repair of farm machinery and equipment. These may include wood, iron, soldering and adjustment problems as they apply to the areas of agriculture. One lecture and two laboratory periods.

301. *Farm Buildings, Materials and Methods.* (3) A study of farm building materials, concrete, lumber, roofing, insulation, ventilation, points, and finishes, including use, method of application, cost estimates from drawings, blueprints and quantity surveys, within the area. One lecture and two laboratory periods.

302. *Rural Electrification.* (3) A study of the use of electricity as it may be applied to the farm and farmstead. This course includes simple wiring systems, operation of motors, brooders, electric fences, and safety applications in the use of electricity. Time will be spent on the cost, selection and general repairs of electrical appliances. One lecture and two laboratory periods.

303. *Farm Mechanics.* (3) An advanced course in farm shop work to further develop skill, judgment and resourcefulness in the selection, care and use of tools and materials for farm construction and repair work. One lecture and two laboratory periods.

400. *Special Problems.* (3) A student chooses a special problem for design, laboratory or field work with special library research. One lecture and two laboratory periods.

401. *Farm Power and Machinery.* (3) This course includes the repair, operation and construction of tillage, seeding and harvesting machinery, and such service implements as wagons, manure spreaders, and fertilizer distributors. A part of this course will include a study of the construction, operation and servicing of gas engines and tractors, supplemented with the performance tests of gas engines and tractors in the laboratory. One lecture and two laboratory periods.

402. *Rural Electrification.* (3) An advanced course including the application of electricity to farm structures, farm power transmission, water supply, poultry husbandry and the animal industry. One lecture and two laboratory periods.

403. *Farm Buildings and Utilities.* (3) A study of farm buildings, and farmstead utilities, including farm water supply, sewage disposal, lighting, heating, ventilation, kitchen, bathroom, storage space and simple plumbing. One lecture and two laboratory periods.

Graduate Courses

501. *Federal Relations to Education and Agriculture.* (3) A study of the history of vocational education in the United States. It deals with the philosophy of vocational education in agriculture, legislation, financing, planning and coordinating agricultural education with general education.

502. *Educational Problems in Programs of Teachers of Vocational Agriculture.* (3) A critical study of the high school curricula offerings in agriculture. Experience will be given in enterprise analysis, course of study building, general program planning and summarizing. Problems in organization, administration, and teaching the agricultural departments of secondary schools will be considered.

512. *Thesis Writing.* (3) This course involves the actual writing of the thesis. Consideration will be given to form, statement of problems, collection of data, their use, and conclusion to be reached.

521. *Organization and Administration of Teacher Training in Vocational Agriculture.* (3) A study of the organization, philosophy, objectives and requirements for teacher training in vocational education in agriculture.

523. *Evaluation and Program Planning in Agricultural Education.* (3) The evaluation of programs of vocational education in agriculture in local situations as a basis for effective program planning.

DEPARTMENT OF AGRONOMY

MAJOR F. SPAULDING, *Head*

The objectives of the Department are to acquaint the students and other interested persons with some of the known principles and relationships existing between: (1) The farmers and the soil; (2) Soil and plants; (3) Plants and man; (4) Soil and climate; (5) Climate and soil reaction, Natural flora and nutrient level; (6) Temperature relations to fertility level; (7) Structure to moisture level and other physical characteristics which are interrelated, so as to determine the extent of soil-crop fertility-moisture-man response.

Students on graduation are qualified for such positions as county agents, veteran teachers, farm managers and operators, soil technicians, soil conservationists, laboratory assistants, college teachers and various other civil service placements in the U.S.D.A.; Research workers in related sciences.

A Bachelor of Science Degree is given in the undergraduate curriculum with a major in Agronomy. A Master of Science Degree may be awarded those who qualify. Such trainees are recognized for further training in both the undergraduate and graduate programs for specialized study at accredited colleges and universities.

Freshman and Sophomore courses are same as outlined in the general curriculum for the first two years.

Junior Year	Quarter Hours		Credit
Name of courses	I	II	III
Agronomy 301-2-3 ...	3	3	3
Agronomy 311-12-13 ..	1	1	1
Chemistry 321	4		
Biochemistry 312		3	
Animal Husbandry 301-2-311	3	3	3
Agronomy Economics 301-2-3	3	3	3
Electives*	3-6	3-6	3-6
	18	18	17

Senior Year	Quarter Hours		Credit
Name of courses	I	II	III
Agronomy 401-2-3 ...	3	3	3
Agronomy Economics 401	3		
Animal Husbandry 402-3		3	3
English 321-22	3	3	
Sr. Project 450	1	1	1
Agronomy Seminar 411-12-13	1	1	1
Electives*	3-6	3-6	3-6
	17	17	14

Agr. Ed. Minors choose Agr. Ed. requirements not covered in Agronomy curriculum needed for certification, or as approved by the head of the Agricultural Education Department.
*Approved electives in technical areas outside of the department.
Hort. 301-2-3-412-22-23
Biochem. 301-2-303.

Minor in Agronomy

Agronomy 301	Sorghums and Small Grains	Agronomy 401	Soil Conservation
Agronomy 302	Cotton and Tobacco	Agronomy 401	Soil Analysis or Biochemistry 312
Agronomy 303	Forage Crops	Agronomy 403	Legumes and Pastures

Undergraduate

200. *Agronomy Information.* (3) A general appreciation course in soils and fertilizers. Designed for anyone who feels the need of such information as a means of understanding the nature and condition of things necessary for successful plant growth. Non credit for agricultural students. Three lectures per week. Library assignments and occasional field trips.

201. *Field Crops.* (3) A survey of the different uses of land, crop characteristics, adaptations, culture and use of the more important field crop plants. Prerequisite: Botany 101. Lec. 2, Lab. 2.

202. *Soils.* (3) An introduction to the study of the principles of soil formation, the nature and properties of soils and their relation to plants. Prerequisite: Chemistry 101-2-3. Lec. 2, Lab. 2.

203. *Fertilizers.* (3) The source, manufacture and properties of fertilizer materials; formation and preparation of mixed fertilizers; the principles of fertilizer application. Lec. 2, Lab. 2.

213. *General Agricultural Botany.* (4) An introductory course designed to provide a broad understanding of the fundamental facts and principles of botanical sciences. Lec. 3, Lab. 4.

301. *Sorghums and Small Grains.* (3) *The distribution, culture and uses of the cereal grains and their climatic adaptation. Lec. 2, Lab. 2.

302. *Cotton and Tobacco.* (3) *The principles of cotton and tobacco culture, fertilizer, production, grading, classing and marketing. Lec. 2, Lab. 2.

303. *Forage Crops.* (3) *The characteristics, cultural requirements, uses and distribution of the important forage crops. Lec. 2, Lab. 2.

311-12-13. *Technical Skills in Agronomy.* (3) The main purpose of the course is to develop and improve the technical skills necessary for the successful production of field, pasture, forage and soil improvement crops, and for the conservation and improvement of the soil resources. This course runs throughout the year. Lab. 4.

*May be approved for graduate credit.

321. *Agricultural Applications of Plant Science.* (3) Application of basic botanical principles to crop production, improvement, and utilization. Lec. 2, Lab. 2.

322. *Plant Pathology.* (3) Diseases of the most important agricultural plants of Tennessee and the South. Emphasis will be placed on the nature of the disease, recognition and control measures. Prerequisite: Agronomy 321. Lec. 2, Lab. 2.

323. *Economic Entomology.* (3) A brief review will be made of the structure, morphology, controls and the recognition of economic insects as related to Agriculture. Lec. 1, Lab. 4.

331. *Farm Weeds.* (3) A one-quarter course of laboratory and field work on the identification, eradication, and economic value of the important weeds of Fields and Pastures. Fall and Spring Quarters, Juniors or Seniors. Electives for any department.

333. *Plant Physiology.* (4) The course consists of a study of the physiology of seed and economic plants. Emphasis will be placed on respiration, transpiration, photosynthesis, absorption, and nutrition as related to agricultural practices. Prerequisites: Zoology 101-2, Botany 101, Chemistry 101-02-03, (General Chemistry) Agronomy 321. Lec. 2, Lab. 4.

341. *Applied Bacteriology.* (3) A review of the principles of Bacteriology with application to Agriculture as related to soil fertility, legumes, milk, water, diseases, and agricultural products. Prerequisites: Biology 101-2. Lec. 2, Lab. 2.

401. *Soil Conservation and Management.* (3) *A study of tillage, drainage, fertilization and rotation practices as they affect the productive capacity of field soil. Lab. 6.

402. *Soil Analysis.* (3) *Procedures and methods of soil analysis. Prerequisites: Agronomy 401, Chemistry 321, Biochemistry 312. Lab. 6.

403. *Legumes and Pastures.* (3) *Characteristics and use of the important pasture legumes. Permanent pastures, their fertilization and management, temporary and rotation pastures. Lec. 2, Lab. 2.

450. *Senior Project.* (3) Required of all Agronomy majors.

411-12-13. *Seminar.* (3) Current topics, lectures and demonstrations in Agronomy and related areas.

Graduate Courses

501. *Plant Breeding.* (3) A study of the methods, principles and results of plant improvement work; hereditary variation and the general principles of plant breeding. Prerequisites: 201 Agronomy, Biology 101. Lec. 3.

502. *Fiber* (other than Cotton) *Sugar and Root Crops.* (3) The distribution, characteristics and cultural requirements of flax, hemp, sugar cane and sugar beets. Prerequisites: Agronomy 202. Lec. 2, Lab. 2.

503. *Soil Classification.* (3) The basis of soil classification, genesis and morphology of zonal soils of the United States; the important series of Tennessee. Prerequisites: Agronomy 202, 401. Lec. 2, Lab. 2.

511-12. *Thesis.* (6) Graduate students only.

*May be approved for graduate credit.

521-22-23. *Seminar.* (3) Discussions of current problems in Agronomy. Prerequisites: 201-2 and permission of the instructor. One hour credit each quarter. Lec. 1.

531-32-33. *Agronomic Literature.* (3) An effort will be made to acquaint the student with the literature in the general field. Lab. 2.

541. *Plant Analysis.* (3) Adapted procedures and methods of plant analysis. Prerequisites: Agronomy 402, Chemistry 321, Biochemistry 312. Lab. 6.

542. *Special Problems.* (3) Seniors and Graduate Students.

Other courses may be required. These will be determined by the major advisor.

DEPARTMENT OF ANIMAL HUSBANDRY

WALLER C. HURLEY, *Head*

Instruction in Animal Husbandry is designed to train students for general or livestock farming, purebred livestock operators, dairy farm operators and herd managers, market milk producers, county agricultural agents, extension livestock specialists, and work with other educational agencies.

The undergraduate curriculum is designed to meet requirements for the Bachelor of Science degree. The graduate curriculum meets requirements for the Master of Science degree. Students who want to do graduate work are encouraged to take Agricultural Economics 401.

Students planning to major in Animal Husbandry are expected to select their sophomore electives from Physics 201 and 203.

Majors in this department are required to take thirty-nine credit hours of Animal Husbandry in the Junior and Senior years. Minors are required to take eighteen hours of Animal Husbandry in the Junior and Senior years. Core courses are as outlined in the curriculum, excluding Animal Husbandry courses.

Students are encouraged to acquire some knowledge of veterinary science, and those interested are given an opportunity to elect courses in this field.

CURRICULUM IN ANIMAL HUSBANDRY

Junior Year	Quarter Hours Credit		
Name of courses	I	II	III
Chemistry 321	4		
Biochemistry 302-3		4	4
Biology 311			4
Biology 241	4		
Agricultural Economics 302		3	
Animal Husbandry 301-3	3		3
Animal Husbandry 311-12-13; 321	3	6	3
Electives*	3	3	3
	17	16	17

Senior Year	Quarter Hours Credit		
Name of courses	I	II	III
English 322		3	
Agronomy 401-3	3		3
Agricultural Engineering 401	3		
Agricultural Economics 312		3	
Animal Husbandry 322		3	
Animal Husbandry 401-2-3	3	3	3
Animal Husbandry 421-22-23	1	1	1
Animal Husbandry 411	3		
Animal Husbandry 450			3
Electives*	3	6	6
	16	19	16

*All electives must be selected with the approval of the advisor.

COURSES IN ANIMAL HUSBANDRY

Undergraduate

102. *Introductory Animal Husbandry.* (3) This course is devoted to the adaptation of the different classes of farm livestock to varying farm conditions and to the relationship of each class to the other in different farm plans. A careful study is made of correct type in livestock in relationship to economical production and market demands. Two lectures and one laboratory period.

103. *Livestock Management.* (3) Care and management of farm livestock, including dehorning, castrating, vaccination, parasite control, preparation for show and sale, and general feeding practices. Two lectures and one laboratory period.

201. *Introduction to Dairying.* (3) A study of the place of dairying in agriculture, utilization of dairy products, breeds of dairy cattle, composition of milk, processes of dairy manufacturing, herd management and the relationship of the farm to dairy herd operation. Two lectures and one laboratory period.

301. *Horse and Sheep Production.* (3) A study of the origin, importance, distribution, methods of production, and economic values of horses and sheep. Practical work in training, judging and grading. Two lectures and one laboratory period.

302. *Beef Cattle and Swine Production.* (3) A study of the origin, development and status of beef cattle and swine industries, production, management practices and methods of marketing. Two lectures and one laboratory period.

303. *Animal Breeding.* (3) A study of the physiology of reproduction, heredity and environment, genetics of domestic animals, lethals, methods of selection with different classes of livestock and mating systems, and functions of the progeny test. Prerequisite: Biology 311. Three lectures.

311. *Feeds and Feeding.* (3) A study of the basic principles of feeding farm animals, feeding standards, balancing rations, composition and nutritive value of feeds. Prerequisites: Chemistry 111-2-3. Two lectures and one laboratory period.

312. *Livestock Fitting and Judging.* (3) This course is designed to teach the principles and provide practices in training, fitting and judging livestock. One lecture and two laboratory periods.

313. *Diseases and Parasites.* (3) A study of the causes, symptoms and treatment of general diseases and parasites of livestock with special emphasis on prevention. Prerequisite: Biology 241. Three lectures.

321. *Swine Production.* (3) A study of the breeding, management, feeding, and marketing of swine. Emphasis is placed on both purebred and commercial production. Two lectures and one laboratory period.

322. *Beef Cattle Production.* (3) A study of the methods of production, management, feeding, fitting and marketing beef cattle. Two lectures and one laboratory period.

401. *Market Milk**. (3) A study of the market milk industry, milk ordinances, city milk supply, milk procurement, transportation, grading, pasteurizing, cooling, bottling, and distribution, milk plant organization and equipment. Prerequisites: Animal Husbandry 201-311. Two lectures and one laboratory period.

402. *Meat and Meat Products.* (3) Study of and practices in butchering, cutting and processing farm meats. Two lectures and one laboratory period.

403. *Dairy Farm Operations*.* (3) A study of general dairy farm operation, adaptation of the herd to available facilities, factors affecting production, balancing rations for dairy cattle, disease control, principles of modern dairy cattle breeding, arrangement and development of dairy farm buildings. Prerequisites: Animal Husbandry 201-311. Two lectures and one laboratory period.

411. *Technical Skills in Animal Husbandry.* (3) The main purpose of this course is to develop and improve the technical skills necessary for the successful production of farm animals and animal products. Three laboratory periods.

421-22-23. *Seminar.* (3) Discussion of current Animal Husbandry literature. Required for Animal Husbandry seniors. One hour credit each quarter. One discussion period.

450. *Senior Project.* (3) Required for Animal Husbandry seniors.

Graduate Courses

501. *Advanced Animal Feeding.* (3) A study of recent developments in animal nutrition, experimental procedures and application in commercial feeding. Prerequisite: Animal Husbandry 311 or equivalent. Two lectures and one laboratory period.

502. *Animal Feeding Problems.* (3) The student is expected to conduct an original feeding trial with one class of farm animals for at least 60 days, record, interpret, and present results in written form. One lecture and two laboratory periods.

503. *Animal Health.* (3) A study of the health maintenance, sanitary practices, and research in livestock diseases and parasites. Two lectures and one laboratory period.

511-12. *Research and Thesis Writing.* (6)

513. *Advanced Livestock Management.* (3) A study of the care and management of purebred herds, and methods of developing purebred herds. Prerequisites: Animal Husbandry 103-303-311. Two lectures and one laboratory period.

521-22-23. *Animal Husbandry Seminar.* (3) Discussions of current Animal Husbandry literature as presented in scientific journals. One discussion period.

531. *Advanced Animal Breeding.* (3) A study of special problems in the field of animal genetics as applied to the breeding and improvement of farm animals. Two lectures and one laboratory period.

532. *Dairy Management.* (3) A study of the methods of management in commercial dairy plants, costs of operation, technical advances in processing and preserving dairy products. Two lectures and one laboratory period.

DEPARTMENT OF BIOCHEMISTRY

(Agricultural and Biological Chemistry)

ROBERT E. HURST, *Head*

The present purpose of the Department of Biochemistry is as follows: (1) to give foundation training in Biochemistry, designed to prepare students for further study in the field; (2) to conduct service courses that constitute a part

*Approved for graduate credit.

of the curricula and the elective subjects of students majoring in Animal Husbandry, Poultry Husbandry, Agronomy, Foods and Nutrition, and in the Biological and Physical Sciences; (3) to offer sufficient courses to constitute a minor for students majoring in related fields of Biochemistry; and (4) to give certain courses for graduate credit that are related to the fields of plant and animal nutrition and required as part of the program of study of graduate students in these fields.

To satisfy a minor in Biochemistry, a student must earn from 16 to 20 hours of credit with no grade less than C.

COURSES IN BIOCHEMISTRY

Undergraduate

301. *General Agricultural Biochemistry.* (4) An introductory course presenting the essentials of Organic and Biological Chemistry as applied to animal and crop production. Prerequisite: Chemistry 111-12-13, or the equivalent; a course in General Biology, or Zoology and Botany. Required of majors in Agricultural Education. Two lectures and two laboratory periods.

302. *Fundamentals of Biochemistry.** (4) An elementary course covering certain phases of physical biochemistry, the chemistry of carbohydrates, lipids, proteins, and enzymes. Required of majors in Animal Husbandry, Poultry Husbandry, and Foods and Nutrition. Prerequisite: Chemistry 321, or the equivalent. Three lectures and two laboratory periods.

303. *Introduction to Animal Biochemistry.** (4) An introductory course of the chemistry of the animal body including digestion, metabolism, urine, blood, bone and other tissues, and vitamins. Required of majors in Animal Husbandry and Poultry Husbandry. Prerequisite: Biochemistry 302. Three lectures and two laboratory periods.

312. *Quantitative Biochemistry.* (4) Aspects of quantitative chemistry with emphasis on its applications to the analysis of agricultural and food materials. Prerequisite: Chemistry 11-12-13, or the equivalent. Two lectures and three laboratory periods.

313. *Physiological Chemistry.* (4) An introductory course in human physiological chemistry. Primarily for majors in Foods and Nutrition. Prerequisite: Biochemistry 302. Two lectures and two laboratory periods.

Graduate Courses

501. *Biochemistry of Animal Nutrition.* (4) The biochemistry of animal nutrition, including the metabolism of carbohydrates, fats and proteins, energy relationships of the animal body, and nutritive requirements for optimum body functioning. The laboratory work involves chemical and biological methods used in nutrition studies. Prerequisite: Biochemistry 302, and 303 or 313. Offered at present as a service course for graduate students in the animal sciences. Two lectures and three laboratory periods.

511-12-13. *Seminar.* (3) Discussions of experimental data and research techniques in agricultural and biological chemistry, and nutrition. Prerequisite: Graduate standing. One meeting per week, one hour credit per quarter.

521-22-23. *Research.* (3-6) Investigation in agricultural and biological chemistry, and nutrition. Prerequisite: Graduate standing. One to two credit hours per quarter, according to work done.

*Approved for graduate credit.

DEPARTMENT OF OLERICULTURE AND POMOLOGY

HAZO W. CARTER, *Head*

A curriculum is offered leading to the degree of Bachelor of Science in Olericulture and Pomology. Certain courses in this curriculum function as minor and service courses for students in other departments. Sufficient minor courses are recommended to make a total of 18 quarter hours, which are required of minor students.

The curriculum prepares students for several vocations of life: (1) they may obtain positions as Farm Demonstration Agents under the U. S. Extension Service; (2) they may obtain positions as horticulturists with state and federal government; (3) they may enter graduate schools and pursue training for advanced degrees in order to prepare themselves for college teaching and research in Horticulture and related fields; (4) they may go into private commercial fruit and vegetable production.

CURRICULUM IN HORTICULTURE (1)

(OLERICULTURE AND POMOLOGY)

All Freshman and Sophomore students take courses outlined in the General Agricultural Curriculum for Freshman and Sophomore students.

Junior Year	Quarter Credit Hours		
Name of courses	I	II	III
Chemistry 321	4		
Biochemistry 312		4	
Agronomy 322-33		3	3
Horticulture (1) 301-2-3	3	3	3
Horticulture (1) 313			3
Horticulture (1) 321	3		
Horticulture (1) 331-2-3	2	2	2
Ag. Economics 302		3	
Ag. Economics 312		3	
Electives	6		6
	18	18	17

Senior Year	Quarter Credit Hours		
Name of courses	I	II	III
Horticulture (1) 401-2-3	3	3	3
Horticulture (1) 411-12	3	3	
Horticulture (1) 422-23		3	3
Horticulture (1) 431-32	3	3	
Horticulture (1) 450			3
Agronomy 401-2	3	3	
Ag. Economics 401	3		
Electives	3	3	9
	18	18	18

COURSES IN HORTICULTURE (1)

(OLERICULTURE AND POMOLOGY)

Undergraduate

101. *Principles of Fruit Growing.* (3) A study of the principles, practices and culture of orchard plants. Lec. 2, Lab. 2.

103. *Vegetable Gardening.* (3) A basic study of the principles and practices of vegetable production. Lec. 2, Lab. 2.

301-2-3. *Commercial Vegetable Production.* (9) A course dealing with the principles and practices of commercial vegetable production. A study will be made of varieties, cultural practices, insect and disease control, grading, packing, storing, and marketing. Lec. 2, Lab. 2.

313. *Fruit Varieties.* (3) A systematic study of the most important varieties of apples, pears, peaches, plums, grapes, and small fruits from the standpoint of their identification, growth characters, and special cultural requirements. At least one field trip is given. Lec. 2, Lab. 2.

321. *Growth and Development of Vegetable Crops.* (3) Factors affecting growth, development, and quality of vegetable crops. Lec. 2, Lab. 2.

331-32-33. *Technical Skills in Horticulture.* (6) This course continues throughout the year. It is required of all students majoring and minoring in Olericulture and Pomology. The main purpose is to develop technical skills necessary for production of fruits and vegetables. Lab. 6.

401. *Handling, Storage, and Utilization of Fruits.* (3) The important factors in harvesting and handling fruit that affect quality and marketability are studied. Lec. 2, Lab. 2.

402. *Orchard and Small Fruit Culture.* (3) Study and practice in propagating, planting, pruning, cultivating, fertilizing, spraying, and thinning orchard and small fruits. Lec. 2, Lab. 2.

403. *Processing of Fruits and Vegetables.* (3) A study of current practices in the processing of fruits and vegetables. In addition to laboratory work, the course will include visits to freezing and dehydrating plants, and canning factories. Lec. 1, Lab. 4.

411. *Special Topics in Experimental Pomology.* (3) In this course the student is expected to review critically and evaluate the more important original papers relating to various phases of pomological research. Recent experimental methods applicable to the field of pomology are fully considered. Lec. 3.

412. *Plant Nutrition.* (3) Soil conditions in relation to the growth of fruit trees and vegetable plants; soil and plant tissue tests, fertilizers and their use. Lec. 2, Lab. 2.

422. *Special Topics in Vegetable Crops.* (3) In this course the student is expected to review critically and evaluate the more important publications that deal with vegetable production, handling and storage problems. Lec. 3.

423. *Types and Varieties of Vegetables.* (3) This course deals with the taxonomy, origin, history, characteristics, adaptation, identification, classification, exhibition, and judging of kinds and varieties of vegetables. The value of the course depends to a great extent upon gaining an acquaintance with the plant material as it grows. Lec. 2, Lab. 2.

431. *Fruit Diseases.* (3) Symptomatology; Laboratory and field studies of representative diseases; control measures. Lec. 2, Lab. 2.

432. *Vegetable Diseases.* (3) Symptomatology; Laboratory and field studies of representative diseases; control measures. Lec. 2, Lab. 2.

450. *Senior Project in Olericulture and Pomology.* (3) Individual student research and presentation of a special topic or problem selected by the student and approved by the department. Prerequisite; senior standing. Three lectures per week.

DEPARTMENT OF ORNAMENTAL HORTICULTURE AND FLORICULTURE

NEAL MCALPIN, *Head*

The curriculum in Ornamental Horticulture and Floriculture is designed to prepare students for work in nursery management, ornamental plant culture, floral service including floral designs, breeding and improvement of horticultural plants, landscape and horticultural services.

Students may major or minor in this department. The requirements for the major consist of the courses outlined in the general curriculum for freshman and sophomore agriculture students and of those outlined in the junior and senior years of this department. This amounts to 212 quarter hours of credit. A minor is also offered to students majoring in other departments, consisting of

18 quarter hours of courses approved by the major and minor professors. The degree of Bachelor of Science is awarded upon satisfactory completion of the major requirements. Graduate work leading to the degree of Master of Science is also offered.

The courses offered are planned to create an appreciation and establish a background for professional practice in landscape architecture, to provide an understanding of design, and to offer training in the basic materials and skills necessary in the profession. The undergraduate study will qualify the student for certain aspects of landscape architecture and floriculture such as teaching, landscape construction, maintenance work, nursery work, and specific horticultural farming.

The complete curriculum encompasses training in landscape and architectural design, landscape engineering, plant materials, composition, graphic expression, and professional practice in both floral and landscape work.

CURRICULUM IN HORTICULTURE (2)

(Ornamental Horticulture and Floriculture)

Junior Year	Quarter Credit Hours		
Name of courses	I	II	III
Horticulture (2) 303			3
Horticulture (2) 311-12-13	3	3	3
Horticulture (2) 321-22-23	3	3	3
Horticulture (2) 332		3	
Horticulture (2) 341-2-3 ..	3	3	3
Civil Engineering 211	3		
Mathematics 162		3	
Horticulture (2) 351-52-53	1	1	1
Electives	3		3
	16	16	16

Senior Year	Quarter Credit Hours		
Name of courses	I	II	III
Horticulture (2) 402-3 ...		3	3
Horticulture (2) 413			3
Horticulture (2) 431-32-33	3	3	3
Horticulture (2) 441-42-43	3	3	3
Horticulture (2) 451-52-53	1	1	1
Agronomy 322		4	
Biology 311	4		
Horticulture (2) 450	1	1	1
Electives	6	3	3
	18	18	17

COURSES IN HORTICULTURE (2)

(Ornamental Horticulture and Floriculture)

Undergraduate

303. *Propagation of Horticultural Plants.* (3) A study of the methods of prapagating horticultural plants which includes seedage, cutting, grafting, of both economic and ornamental plants. One lecture, two laboratory periods.

311. *Floriculture.* (3) Commercial culture and marketing of bulbous crops such as gladioli, tulips, narcissi, lilies, and miscellaneous crops. One lecture, two laboratory periods.

312. *Floriculture.* (3) A study of methods of production of commercial potted plants. One lecture, two laboratory periods.

313. *Floriculture.* (3) A study of the culture of major cut flower crops. One lecture and two laboratory periods.

321. *Landscape Plants.* (3) A study of ornamental trees, their identification and use; planting plans. One lecture and two laboratory periods.

322. *Landscape Plants.* (3) A study of shrubs and vines in ornamental plantings; Planting plans. One lecture and two laboratory periods.

323. *Landscape Plants.* (3) A study of perennials and annuals for general ornamental planting; Planting plans. One lecture and two laboratory periods.

332-33. *Nursery Management.* (3) A course designed to acquaint the student with the principles and practices involved in production, management and marketing of nursery plants. One hour lecture and two laboratory periods.

341. *Landscape Design.* (3) A study of landscape composition. Three laboratory periods.

342. *Landscape Design.* (3) A study of designing small lots and city property. Three laboratory periods.

343. *Landscape Design.* (3) A study of public grounds and large estates. Three laboratory periods.

351-52-53. *Technical Skills.* (3) Required of all majors. Designed to develop and improve the technical skills necessary for successful production in horticulture. Two laboratory periods.

401. *Landscape Construction.* (3) A study of topographic map making, grading plans and model making. Two laboratory periods.

402. *Landscape Construction.* (3) A study of the underlying principles of landscape construction and the building of walks, roads, and ornaments. Three laboratory periods.

403. *Landscape Construction.* (3) A study of grading, drainage, and structures on private estates and public grounds. Three laboratory periods.

413. *Breeding of Horticultural Plants.* (3) A study of the principles and methods of genetics as applied to the breeding and improvement of horticultural crops. One lecture and two laboratory periods.

421. *Advanced Landscape Design.* (3) The economic and esthetic theory of design; taste, character, historical style and composition of the natural elements of design. Three laboratory periods.

422. *Advanced Landscape Design.* (3) Advanced course in designing of large parks, cemeteries, golf courses, and land subdivisions. Three laboratory periods.

431-32-33. *Floral Design.* (9) A study of the essentials of flower arrangement, the making of corsages, sprays, and decorating for special occasions. Three laboratory periods.

441. *Floriculture.* (3) Principles underlying the culture of greenhouse crops. One lecture and two laboratory periods.

442. *Floriculture.* (3) Greenhouse maintenance, heating, ventilation, soils, and watering. One lecture and two laboratory periods.

443. *Floriculture.* (3) Practice and problems in growing exotics, management of flower shop, flower handling and refrigeration. One lecture and two laboratory periods.

450. *Senior Project.* (3) Required of Seniors in Ornamental Horticulture and Floriculture.

451-52-53. *Technical Skills.* (3) Required of all majors and minors. The purpose of the course is to develop and improve the technical skills necessary for successful operation in horticulture. Two laboratory periods.

DEPARTMENT OF POULTRY HUSBANDRY

Erly J. Thornton, *Head*

The curriculum in poultry has been set up to prepare students for the successful operation of poultry enterprises, either as owners or managers; for high

school teaching; for extension and research work; and positions with the U. S. Department of Agriculture. Courses are offered leading to the bachelor of science and master of science degrees. Terminal courses designed for veterans and short courses for non-degree credits are offered also.

Students desiring a major in poultry are urged to pursue courses in bacteriology, organic chemistry, biochemistry, embryology, genetics, and physiology.

In the undergraduate school, a student is expected to complete 21 quarter hours of work in his major, and 18 quarter hours in a minor field of concentration, above the other specified courses. Guidance in determining courses to pursue will be provided by major and minor advisors, who may be selected by each student before entering upon the work of the junior year.

Requirements for the graduate students are given in the graduate school bulletin.

CURRICULUM IN POULTRY HUSBANDRY

Junior Year	Quarter Credit Hours		
Name of courses	I	II	III
Poultry Husbandry 302		3	
Poultry Husbandry 302			3
Poultry Husbandry 342		3	
Poultry Husbandry 343			3
Biology 431	4		
Chemistry 321	4		
Ag. Economics 312		3	
Biochemistry 302		4	
Biochemistry 303			4
Poultry Husbandry 321-22-23	1	1	1
Electives	9	4	7
	18	18	18

Senior Year	Quarter Credit Hours		
Name of courses	I	II	III
Poultry Husbandry 450			3
Poultry Husbandry 402		3	
Poultry Husbandry 403			3
Poultry Husbandry 422		3	
Poultry Husbandry 411-12-13	3	3	3
English 322		3	
Biology 311	4		
Biology 241	4		
Electives	7	6	9
	18	18	18

COURSES IN POULTRY HUSBANDRY

Undergraduate

101. *Principles of Poultry Production.* (3) The principles and practices underlying reproduction and growth of the domestic fowl. It includes the study of breeds, varieties, and types of poultry. For Agriculture majors. Two lectures and one laboratory period.

102. *Principles and Practices of Incubation and Brooding.* (3) The environmental factors affecting incubation, embryo development, operation of incubators, and methods of brooding. For majors in Agriculture. Two lectures and one laboratory period.

302. *Poultry Management.* (3) A detailed study of all phases of farm and commercial poultry, including buying chicks, incubation, brooding, managing the growing flock, and handling the layers. Includes cost of production. Two lectures and one laboratory period.

303. *Processing Poultry Products.* (3) A study of grades and classes of market poultry and eggs; methods of processing, storage, and preservation; and problems in produce plant operations. Two lectures and one laboratory period.

321-22-23. *Technical Skills in Poultry Husbandry.* (3) The course runs throughout the year and is required of all minors and majors in poultry husbandry. Its main purpose is to improve and develop the skills necessary for successful poultry production. Four laboratory hours.

342. *Hatchery Management.* (3) This course will include the history, development, and operation of incubators. Also egg supply, hatchery records, and accounts, and the sale of chicks. Two lectures and one laboratory period.

343. *Turkey Management.* (3) Turkey breeds and breeding, principles of incubation, and brooding poults and turkey meat production. Two lectures and one laboratory period.

402. *Poultry Breeding.* (3) Inheritance of viability, egg production, and other characteristics of economic importance, breeding records, and progeny testing. Three lecture periods.

403. *Poultry Hygiene and Sanitation.* (3) The principles underlying sanitation and disease prevention as applied to the poultry farm. Two lectures and one laboratory period.

411-12-13. *Special Problems in Poultry Husbandry.* (3-9) Each student will be required to make a study of some particular phase of poultry husbandry and write a report of his study and research. The work must comprise, in part, original investigation. A student must enroll in this course in order to do his senior project in the poultry department. Prerequisites: P. H. 302, 303, 342, 343.

422. *Poultry Nutrition and Feeding.* (3) The principles of poultry nutrition, including the nutrients required by poultry and means of supplying these nutrients under practical feeding conditions. Poultry feedstuffs, ration formulation, and feeding practices will be considered. Two lectures and one laboratory period.

450. *Poultry Husbandry.* (3) Senior Project. A junior research conducted, written, and bound in some phase of poultry.

GRADUATE

500. *Planning Poultry Enterprises for Rural Youth.* (3) Designed to assist agricultural leaders in developing poultry enterprises. Two lectures and one laboratory period.

501-2. *Advanced Genetics.* (6) A study of the principles of genetics with emphasis on their application to plants and animals. Three lecture periods.

532. *Poultry Problems.* (3) Any quarter by arrangement.

512. *Thesis Writing.* (3)

503. *Advanced Poultry Nutrition.* (3) History of nutrition. The chemistry and physiology of nutrition and the nutritive requirements for growth, production, and other body functions of the domestic fowl. Two lectures and one laboratory period.

511-12-13. *Poultry Seminar.* (3) Assigned reading and reports from scientific and technical literature on nutrition, disease, and breeding.

521-22-23. *Poultry Research.* (9) A research in some phase of poultry. Originality and thoroughness are emphasized.

531. *Advanced Poultry Management.* (3) Influence of recent investigations in poultry husbandry as they affect methods of feeding, housing, breeding, care, and management of poultry. Two lectures and one laboratory period.

TERMINAL COURSES IN POULTRY

The specialized course in poultry is given to serve the needs of those people who plan to go into poultry as operators, either for themselves or for others.

Attempts will be made to prepare a person for successful participation in the poultry industry.

Qualifications for Admission

1. The applicant must be a high school graduate, at least 21 years of age, and approved by the head of the department.
2. It is necessary that the applicant be interested in poultry, have good health, possess good character and judgment, and show willingness to work.

Curriculum

(1 year—4 seasons: Fall - Winter - Spring - Summer)

UNIT I. Fall (360 hours per quarter)

A. Housing the laying and breeding stock
   1. Preparing the houses for winter
   2. Placing the birds in the winter quarters
   3. Operating the laying house during fall and winter
   4. Constructing and repairing poultry houses
   5. Installing poultry house fixtures

B. Selecting hens for egg production
   1. Judging poultry for egg production
   2. The use of trapnest records in selection
   3. Culling the flock

C. Feeding Poultry
   1. Composition of feeding stuff
   2. Formulation of rations
   3. Feeding experiments

D. Preparing poultry and products for marketing
   1. Marketing turkeys
   2. Marketing eggs

UNIT II. Winter

A. Incubation
   1. Testing the breeding flock for pullorum
   2. Selecting eggs for incubation
   3. Caring for hatching eggs
   4. Preparing the small incubator
   5. Starting the hatch
   6. Operation of incubators
   7. Candling eggs
   8. Taking off the hatch
   9. Cleaning and disinfecting the incubator
   10. Pedigree hatching

B. Brooding
   1. Preparing brooder houses
   2. Operating the brooder houses
   3. Operating the battery brooders

C. Preparation of broilers and fryers for marketing
   1. Marketing broilers and fryers

UNIT III. Spring

A. Incubation and brooding
   1. Turkeys
   2. Ducks
   3. Geese

B. Caponizing

C. Planting crops for range and succulent

UNIT IV. Summer

A. Preparing the range for pullets

B. Selecting birds for range

C. Transferring birds to the range

D. Range management
   1. Vaccination for fowl pox
   2. Feeding and watering birds on range
   3. Keeping records
   4. Protecting the birds from enemies
   5. Checking pullets for first eggs
   6. Sanitation and disease control

AREA OF HOME ECONOMICS

General Information

The area of Home Economics aims to guide the student in (a) developing a sound and satisfying philosophy of life, (b) using intelligence in solving personal and family problems, (c) preparing for vocations of life, (d) developing wholesome social relationships and (e) enriching their general and cultural education.

The Area of Home Economics is located in the Women's Building and includes the following departments: Child development, Clothing and Textiles, Foods and Nutrition, Home Economics Education, and Home Management. A major curriculum is outlined for each department except Child Development. Students are amply advised at registration time in selecting their courses.

Students who transfer from other institutions and wish to complete requirements for the Bachelor of Science degree with major in any of the departments of Home Economics are expected to complete at Tennessee A. & I. State University the curricula of the upper divisions.

General Home Economics

Students interested in pursuing work leading to the B.S. degree in general home economics, with a view to becoming qualified to teach non-vocational home economics in secondary schools, will be given an opportunity to do so. Those wishing to pursue this major should declare their intentions at the beginning of the freshman year, or upon their first registration in the University.

An adviser for this major will be assigned at registration.

DEPARTMENT OF CHILD CARE AND DEVELOPMENT

RUTH A. MCDOWELL, *In Charge*

Courses in Child Development are designed to give students majoring in Home Economics a comprehensive understanding of the trend of development from pre-infancy through the 1st six years. In these courses theory and practice are emphasized. The nursery school being an important part of the curriculum with a program emphasizing—good health habits; providing an understanding knowledge of how to provide mental, social, moral and religious training for nursery school children; giving greater insight in the understanding of the personalities of others.

From courses in child development girls get a good background for further study; being able to be teachers in nursery school and other group work, and child development; research workers, government workers, social workers. Interested majors may establish nursery schools and become nursery school teachers and assistants on courses offered in the present curriculum.

COURSES IN CHILD DEVELOPMENT

Undergraduate

232. *Creative Arts for Young Children.* (3) A course concerned with the imporatnt materials in the child's environment, such as toys, blocks, books, pictures, music, plastic materials, paints, tools, and mature materials and the child's response to them. Principles underlying the selection, construction, use and care of these materials, and the evaluation and adjustment of them to meet the growing child. Three credit hours. Open to freshmen, sophomores, and non-majors.

323. *Child Development.* (3) A study of the child from the psychological, physiological and sociological points of view, with emphasis on care, guidance development, training, environment and habit formation. Special study and observation is made of training procedures in the Nursery School and each of the child's progress. Prerequisite: Psychology 253. Two hours and one laboratory period. Observation in the Nursery School two hours per week.

351. *The Young Child and His Family.* (3) In this course emphasis is placed upon the individual development of various family members. Consideration is made of family relations basic to an intelligent understanding of attitudes and behavior of children and young people. Observation of training procedures in the nursery school. Two hours and two laboratory periods.

452. *Child Practicum.* (3) Observation and participation in the directing and guiding of young children in the nursery school. Prerequisites: Child Psychology 253, Child Development 323, 351. One conference and three laboratory periods. Registration with consent of head of department.

453. *The Child's Play Environment.* (3) A course in the selection, care and use of play materials and equipment for young children. Toys are constructed in the laboratory. One hour and two laboratory periods.

461. *The Growth of Children as Related to Guidance.* (3) A study is made of physical growth of children. Interpretation is made of growth norms. Factors influencing growth, such as nutrition, health, and housing are included. Prerequisites: Psychology 211 and 253. Two hours and one laboratory period.

463. *Family Relationships.* (3) Problems in family life. A study of modern life giving special emphasis to the activities of the home as they relate to the development of the family and its individual members. Prerequisites: 323 Child Development and Economic Problems of the Household 422 or Sociology 322. Three hours.

DEPARTMENT OF CLOTHING AND TEXTILES

GERALDINE B. FORT, *Supervisor*

The Department of Clothing and Textiles offers courses designed to furnish a thorough knowledge of Clothing and Textiles from the standpoints of health, comfort and economy. It enables the student to understand the contribution which clothing makes to social and professional success; to select and enjoy clothes as an expression of beauty and to construct them for creative self-expression.

It opens many possibilities to students who wish to use clothing in a general sense for their personal and family development, to those who have a well-defined vocational aim, and to those who anticipate graduate study.

A bachelor of science degree is offered in undergraduate work. A student may minor in Clothing and Textiles while pursuing graduate work. 192 hours are required for an undergraduate major, 36 of which must be in Clothing and Textiles. (See the curriculum outline for specific requirements.)

For a minor in Clothing and Textiles, 18 hours of credit in courses approved by the major and minor professors are required.

CORE CURRICULUM IN CLOTHING AND TEXTILES

Name of course	*Quarter Credit Hours*
Orientation	3
Clothing and Textiles	36
Related Art	15
Foods and Nutrition	12
Home Management	10
Child Development	3
Chemistry	16
Biology	8
Physics	6
Mathematics	3
Economics	6
Psychology	6
Sociology	3
English	18
Physical Education	8

DEPARTMENT OF CLOTHING AND TEXTILES

Freshman Year	*Quarter Hours Credit*		
Name of course	I	II	III
English 101-2-3	3	3	3
Clothing & Textiles 102-11-12	3	2	3
Related Art 201-2		3	3
Foods 111-112		3	3
Chemistry 111-12-13	4	4	4
Mathematics 101	3		
Home Economics 101-2-3	1	1	1
Physical Ed. 101-2-3	1⅓	1⅓	1⅓
	15⅓	17⅓	18⅓

Sophomore Year	*Quarter Hours Credit*		
Name of course	I	II	III
English 211-12-13	3	3	3
Clothing & Textiles 211-12-13	3	3	2
Related Art 203-4		3	3
Foods 223			3
Nutrition 211			3
Economics 211-12	3	3	
Psychology 211-253	3		3
Physical Ed. 201-2-3	1⅓	1⅓	1⅓
Physics 201	3		
Electives		3	
	16⅓	16⅓	18⅓

Junior Year

Name of course	Quarter Hours Credit I	II	III
Chemistry 321	4		
Biology 302-3		4	4
Child Development 351	3		
Sociology 322		3	
Clothing & Textiles 320-21-23	2	3	3
Major Group Electives	3	5	5
General Electives			6
	16	15	16

Senior Year

Name of course	Quarter Hours Credit I	II	III
Clothing & Textiles 400	3		
Home Management 421-23	3		4
Home Management 433		3	
Related Art Electives	3		
Major Group Electives		3	3
Clothing & Textiles 450	3		
General Electives	3	9	9
	15	15	16

Courses in Clothing and Textiles

Undergraduate

100. *Clothing Clinic*: (with or without credit) (2) Required of Home Economics students deficient in clothing construction techniques. Also open to all students who desire close supervision for the purpose of personal improvement. Two laboratory periods a week.

102. *Principles of Clothing Selection.* (3) Art principles applied to dress selection. Laboratory experience in color harmony, individual color readings, figure analysis and wardrobe planning. Use and care of the sewing machine. Introduction to sewing skills. One recitation and two laboratory periods a week. Fee $1.00.

111. *Textiles: Clothing Fabrics.* (2) A study of methods used in testing and distinguishing different fibers and fabrics. Consideration is given to those properties of fabrics affecting wise selection, use and care of clothing by consumers. Fee $1.00. Two laboratory periods a week.

112. *Fundamentals of Clothing.* (3) Principles of clothing construction applied to cotton, linen and synthetic fabrics. Use and care of sewing machines. Sewing skills. Wardrobe inventory. One recitation and two laboratory periods a week. Open to all students. Fee $1.00.

201. *Clothing of the Family.* (2) Based on the needs of students interested in child development, family relationships, teaching or social work. The study of family clothing problems from the standpoint of income, occupation, and health as well as aesthetic and psychological factors. Construction included. Two laboratory periods a week. Open to all students.

203. *Household Textiles.* (2) This course deals with fundamental textile information and its application to the selection and maintenance of fabrics for household use. Emphasis is placed on understanding textile terms, interpreting labels, advertisements and consumer literature in the area of household textiles. Prerequisites: Clothing 102, 112. Two laboratory periods a week. Fee $1.00.

211. *Intermediate Clothing Construction.* (3) Principles of clothing Construction applied to synthetic and blended fabrics. Use of commercial patterns, principles of fitting. Use and care of sewing machine. Prerequisite: Clothing 102. One recitation and two laboratory periods a week. Fee $1.00.

212. *Children's Clothing.* (3) The study of the physiological, psychological and aesthetic aspects of children's clothing. Selection, construction and care of clothing for infants and small children. Prerequisite: Clothing 102. One recitation and two laboratory periods a week. Fee $1.00.

213. *Renovation.* (2) Restyling, reconstruction, reclaiming, and repairing outmoded and discarded clothing and accessories. Open to all students. Two laboratory periods a week.

220. *Applied Dress Design.* (3) The application of decorative design in clothing construction. Pattern adaptation and originality. Prerequisites: Related Art 203 and 300. One recitation and two laboratory periods a week. Fee $1.00.

301. *History of Costume.* * (2) The history of costume from ancient times to the present; the influence of social and economic conditions upon costume. Open to all students. One recitation and one laboratory period a week.

320. *Needle Craft.* (2) A course in advanced construction methods; Emphasis is placed on selection, construction and care of woolen garments. Prerequisites: Clothing 211, Related Art 201-2. One recitation and two laboratory periods a week. Juniors and seniors only. Fee $1.00.

321. *Advanced Clothing.* (3) A course in advanced Clothing Construction. Suit making and problems involving the treatment and care of woolens. Prerequisites: Clothing 211, Art 201 and 2.

322. *Flat Pattern Adaptation.** (3) The principles and techniques of flat pattern design with application of these principles to commercial pattern alteration. The development of original designs. One recitation and two laboratory periods a week. Fee $1.00.

323. *Textiles.* (3) Relation of raw materials, construction and finish to quality and cost. Identification of fibers, yarns, fabrics and weaves used for clothing and house furnishing; physical and chemical properties, manufacture, use and care. Prerequisite: Chemistry 111-2-3. Juniors and seniors only. One recitation and two laboratory periods a week.

400. *Home Furnishings and Decorating.** (3) The problems in this course provide an opportunity for the selection and construction of fabric furnishings and accessories in relation to color harmonies, textures, floor plan and furniture style. Experiences are provided for the application of practical rules and furniture arrangement and decorating principles to meet the needs and interests of the family. Prerequisites: 102, 111 or 205. Three laboratory periods a week.

401. *Problems in Clothing and Textiles.** (3) Special problems in the details of clothing construction, selection and textiles. Also problems met in student teaching. Newer trends in clothing construction. Prerequisites: Clothing 321, 23. One recitation and two laboratory periods a week.

402. *Textiles: Recent Developments.* (2) New developments affecting characteristic behavior of old and new fabrics as reported in current literature. Discussion and reports based on individual assignments. Prerequisite: at least one course in Textiles. Two recitations a week.

403. *Clothing Economics.* (2) Social and other legislation in relation to the consumer of textiles and clothing. Interaction of production, distribution, and consumption of consumer goods. Juniors and seniors only. Two recitations a week.

411. *Advanced Home Furnishings and Decorating.** (3) Fundamentals of the course are the same as in 400 with emphasis on special decorating prob-

*Approved for graduate credit.

lems and more elaborate details of fabric furnishings. Prerequisite: Home Furnishings 400. Three laboratory periods a week.

413. *Dress Design and Draping.** (3) A course in advanced dress design with emphasis on originality and draping. Opportunity is given to investigate sources of design ideas and to practice various methods of designing. Prerequisites: Clothing 301, 321, 323, Art 203, 204. One recitation and two laboratory periods a week. Fee $1.00.

422. *Illustrative Materials.** (2) Preparation of steps by step illustrative material on basic construction problems. Designed for prospective teachers. Seniors only. Prerequisites: Clothing 321-23. Two laboratory periods a week.

450. *Senior Project Writing.* (3).

Graduate Courses

501. *Clothing and Textile Seminar.* (1) Discussion of current developments in the field. One lecture a week.

502. *Research in Clothing and Textiles.* (3) Research in clothing or in textiles which may form the basis for the master's thesis. Three lectures a week.

503. *Methods of Clothing Construction for Teachers.* (3) A study of construction problems met by the clothing teacher, developing methods which hold to good standards and require minimum amount of time. The making of illustrative material on construction and finishes of cotton, wool, silk or rayon. Three laboratory periods a week.

514. *Historic Textile Design.* (3) A study of the origin of textiles designs and their development throughout the great art periods in history. Practical application is made using some form of applied textile design. Prerequisite: History of costume. One lecture and two laboratory periods a week. Fee $1.00.

521. *Draping.* (3) Designing and draping dresses with emphasis upon creative designs and the handling of different fabrics. Designs draped in muslin and completed in suitable material. Prerequisite: Costume design. Three laboratory periods a week. Fee $2.00.

522. *Dress Design.* (3) Designing, draping and making a daytime dress or original design in wool fabric, techniques suited to the construction and pressing of wool garments, are emphasized. Prerequisites: Costume Design and Draping. Three laboratory periods a week. Fee $2.00.

523. *Special Problems in Textiles and Clothing.* (3) Problems of particular interest to the student may be selected for advanced study with permission of major professor. Three laboratory periods a week.

Courses in Related Art

200. *Related Arts Clinic.* (0) Clarification of problems not clearly understood in regular classes, or personal problems concerning dress, home furnishing or house planning. Meetings will be held at students' and teachers' convenience. This course will be scheduled only upon the request of Home Economic teachers prior to registration.

201. *Color and Design.* (3) This is a course in good taste as it applies in personal grooming. It has to do with problems of color and design as they

*Approved for graduate credit.

are related to the person with the home as a background, i.e. the study of art principles and certain accepted rules governing their application to personal grooming with regard to size, complexion, personality, function, occasion and other areas of importance.

202. *Color and Design.* (3) This is a course in home furnishing. The aim is to guide the student in the application of art principles in appreciation for those things of aesthetic value already on hand, and further to apply these principles in the purchase of furniture, the care of furniture and its enhancing by stain removal, addition of stain or paint and the understanding of upholstering problems, so as to derive a high degree of satisfaction and comfort from the home environment regardless of economic status.

203. *Costume Design.* (3) This is a course in which students study historic costume as a background and inspiration for modern costume. The course does not emphasize original designing and draughting although individual ideas in keeping with good taste are encouraged. The emphasis is placed on the application of design principles to garment selection with reference to the figure: size, form, age, good points, points not so good, function occasion. Problems of dress of the average wage or below-average wage consumer with suggestions for ways to be well dressed on a limited budget. Prerequisite: Related Art 201.

204. *Costume Design.* (3) Continued experience in color with the use of pigments and colored cloth. Color schemes for various complexions. Experiment with complexion color charts. Guidance in appreciation for and understanding of design principles applied in the creation of the best commercial dress designs. Prerequisite: Related Art 201-203.

421. *House Planning.* (3) Usually offered in the spring and summer quarters. Brief study of American contribution in domestic architecture and interior decoration fixtures; panels, stairways, cornices, cabinets. Attention is given to planning the small house for comfort and convenience. Appreciation for aesthetic qualities in home planning through the understanding of art principles and how to apply them. Fundamentals of blue print reading.

300. *Applied Design.* (3) For graduate and undergraduate students. The aim is to apply the principles of design by the use of line, shape and color to the decoration of fabrics and other materials. Some of the crafts included will be: printing with the block, with sticks, and other improvisions, stenciling, leather crafts, gesso craft, raffia craft, straw craft, metal crafts, tie and dye craft, salvage crafts, pottery crafts, mask making, small sculpture carving and plastics.

DEPARTMENT OF FOODS AND NUTRITION

Norma P. Dillard, *Supervisor*

The objectives of the Department of Foods and Nutrition are three-fold: To develop in each student (1) a sound, basic, up-to-date knowledge in the fields of Foods and Nutrition, (2) the ability to interpret these basic facts and apply sound judgment to their translation to actual situations; and (3) the skills and techniques required to apply these basic principles to methods of preparation.

The Department of Foods and Nutrition offers the degrees of Bachelor of Science or Bachelor of Arts in Foods and Nutrition. The undergraduate major

consists of a minimum of 36 hours in Foods and Nutrition and the requisite related courses from other fields.

Foods and Institutional Management	18 hours
Nutrition	18 hours
Clothing	9 hours
Home Management	7 hours
Child Development	3 hours
Chemistry	16 hours
Inorganic—12	
Organic—4	
Human Physiology	8 hours
Biochemistry (& Physiological)	8 hours
Mathematics	6 hours
Bacteriology	4 hours
Physics	6 hours

Students desiring the degree of Bachelor of Arts must elect to take 3 additional hours of mathematics in their sophomore year, and two years of a modern foreign language in their junior and senior years.

Students desiring to meet the entrance requirements for post graduate in internship as set up by the American Dietetic Association must elect to take in addition to the requirements for a major in Foods and Nutrition 6 additional hours of Institutional Management and/or accounting and Education 341.

The student wishing also to qualify for teacher certification will elect sufficient hours in Education to meet the requirement for certification.

Graduate School Offerings

This department offers a minor in Foods and Nutrition consisting of 15 hours of graduate (500) courses in Foods and Nutrition. These courses must include the following:

Advanced Nutrition 521	3 hours
Food Service and Entertainment 503	3 hours
Review of Literature in Foods and Nutrition 533	3 hours
Research Methods in Foods and Nutrition 543	3 hours
Electives in Foods and Nutrition	3 hours
Total —	15 hours

Department of Foods and Nutrition

Lower Division

Freshman Year	Quarter Hours Credit		
Name of course	I	II	III
Foods 111-112	3	3	
Clothing and Textiles 102-112		3	3
English 101-2-3	3	3	3
Chemistry 111-12-13	4	4	4
History 121-22-23	3	3	3
Mathematics 101			3
Home Economics 101-2-3	1	1	1
Physical Education 101-102-103	1⅓	1⅓	1⅓
	15⅓	18⅓	18⅓

Sophomore Year	Quarter Hours Credit		
Name of course	I	II	III
Nutrition 211	3		
Foods 223			3
Clothing and Textiles 211	3		
English 211-12-13	3	3	3
Chemistry 321	4		
Biology 241		4	
Economics 211-12	3	3	
Psychology 211-243		3	3
Psychology 253			3
Physical Ed. (selected from 200 courses)	1⅓	1⅓	1⅓
Art 201-2	3	3	
Electives	—	—	3
	17⅓	17⅓	16⅓

Student desiring a bachelor of arts degree will elect to take three quarter hours of algebra in the sophomore year.

Upper Division

Junior Year	Quarter Hours Credit		
Name of courses	I	II	III
Foods 311 (310)	3		
Foods 312		3	
Nutrition 311	3		
Home Management 303			3
Child Development 223			3
Biology 302-3		4	4
Biochemistry 303 (Physiological Chemistry)			4
Sociology 322		3	
Mathematics 311	3		
Electives	6	6	3
	15	17	17

Senior Year	Quarter Hours Credit		
Name of courses	I	II	III
Nutrition 411	3		
Nutrition 432		3	
Nutrition 453 (451)			3
Foods 412		3	
Home Management 421	3		
Home Management 423			3
Nutrition Elective	3		
General Electives	3	9	6
Physics 201-3	3		3
	15	15	16

Students desiring the degree of bachelor of arts will elect to take 9 hours of a modern foreign language.

Courses in Foods and Nutrition
(Foods and Institutional Management)

Undergraduate

111-12. *Food Buying and Preparation.* (6) A course in the study of foods, including standards for selection, purchasing, preparing and serving foods of nutritive value and analyses of simple principles involved in food cookery. One hour and two laboratory periods. To be taken in sequence.

200. *Clinic for Food Study.* (0) This course is designed for students who desire or need special emphasis on improvement of techniques, development of speed, efficiency and independent work habits. After conference with instructor as to type of experience needed, students follow designated procedure to meet needs. Fee $5.00.

321 (formerly 221). *Food Preservation.* (3) Study is made in the planning and preserving of an adequate food supply for a year for the urban and farm family. Laboratory work is done in various methods of food preservation. One hour and two laboratory periods. Fee $5.00.

223. *Meal Planning and Table Service.* (3) This course includes meal preparation and table service for various occasions, market plans, cost of meals, the nutritive value of food, and the aesthetic aspect of meal planning. Open to majors in other divisions who can qualify in consultation with instructors. One hour and two laboratory periods. Fee $5.00.

311. (formerly 310). *Science Related to the Principles of Cookery.* (3) A study made of the principles underlying the theoretical and practical aspects in food preparation. One hour and two laboratory periods. Fee $5.00.

312. *Experimental Cookery.* (3) This course is designed to offer opportunity for independent laboratory work in the solving of practical problems in food preparation, a study of methods of scoring and standardizing experimental work. One hour and two laboratory periods. Fee $5.00.

333. *Catering.* (3) This course emphasizes food preparation and service for special occasions with attention to artistic arrangements. One hour and two laboratory periods. Fee $5.00.

352. (formerly 350). *Food Demonstration.* (3) A study is made of the principles and techniques involved in foods, nutrition and equipment as applied to the needs of extension, business, classroom and community teaching. Three hours. Fee $5.00.

412. *Quantity Cookery.* (3) This course deals with the problems of lunch rooms, cafeterias and tearooms for the general public, institutions and schools. Attention is given to methods of purchasing foods in quantity, organization of labor, standards of work materials, equipment and installation, meal planning and preparation in large quantities. One hour and two three-laboratory periods. Fee $5.00.

313. *Institutional Management.* (3) This course includes study of institutional food, food departments, professional ethics and qualifications for managers, employment procedures, personnel schedules and financial records. Three hours.

421. *Applied Accounting in Food Costs.* (3) This course includes training in the essentials of general and specific cost accounting and the development of skill. Three hours. Fee $2.00.

423. *Planning and Equipment for Institutions.* (3) A study of planned practical equipment for food service in cafeterias, school feeding centers, and hospital dietary departments. Consideration is given material, construction, operation, installation and use of equipment. Three hours.

431. *School Lunch.* (3) A course planned to prepare for the management of school lunchrooms in connection with teaching. A survey is made of the problems of lunchroom management through field trips to lunchrooms in various schools. Three hours.

452. (formerly 450). *Organization and Management Practice.* (3) Study includes menu analyses, the development of standardized recipes, schedules and standardized work procedures. One hour and two laboratory periods.

Nutrition

200. *Nutrition Clinic.* (0) A course which gives opportunity for guidance and help in food selection and health practices in the promotion of good nutrition. Conference periods will be given those interested in the work.

211. *Elementary Nutrition.* (3) This course includes the fundamentals of nutrition for health, a study of the essentials of an adequate diet, the food needs of persons of different ages and occupations and the nutritive values of common foods, with special emphasis on the relation of health to such knowledge. Three hours. Prerequisites: Foods 111 and 112.

212. *Nutrition for Elementary and Secondary Teachers.* (3) This course includes problems related to gross signs of good and poor nutrition, optimum diets for growing children, school luncheons to promote good growth and health, and methods and materials in teaching children good food habits. Open to majors in other fields requiring instruction in the fundamentals of nutrition. Three hours.

311. *Applied Dietetics.* (formerly Nutrition and Dietetics). (3) A course in the fundamental principles of human nutrition as related to the construction of practical dietaries and in the application of these principles to the feeding of individuals, families and groups. Prerequisites: Chemistry 321 or equivalent, Human Physiology 342, Nutrition 211. Three hours. Fee $3.00.

411. *Advanced Nutrition.* (3) A critical study of chemical and physiological factors in metabolism during prenatal life, infancy, childhood and normal adult life. Reports of recent research and their relation to problems of human nutrition. Prerequisites: Nutrition 211, Biochemistry 323. Three hours.

433. (formerly 431). *Child Nutrition.* (3) A study in the development of a health program for children as related to nutritive requirements and the planning of adequate dietaries. Prerequisite: Nutrition 211. Three hours.

432. *Community Nutrition.* (3) A program which deals with community problems in nutrition and various agencies through which field work can be promoted. Prerequisite: Nutrition 411, Sociology. Three hours. Fee $3.00.

453. (formerly 451). *Nutrition and Diet Therapy.* (3) A course designed to study the modifications of the normal diet in the treatment of disorders of digestion, metabolic disturbances and other pathological conditions of the body. Prerequisite: Nutrition 411. Two hours and one laboratory period. Fee $5.00.

452. *Special Problems in Foods and Nutrition.* (3) Independent student problems in the field of foods and nutrition. Prerequisite: Nutrition 411. Three hours. $3.00.

491. *Project Writing in Foods and Nutrition.* (3) A course in techniques of professional writing, literature searching and abstracting scientific material designed to assist each senior in the field of foods and nutrition in writing the required senior project. To be taken in the first quarter of the senior year.

Graduate Courses

501. *Experimental Cookery (Advanced).* (3) This field of study is needed in commercial foods work. The course permits the study of class problems, which are selected, planned and carried through under the direction and supervision of the instructor. Methods and procedures are outlined and records carefully kept. Prerequisite: Experimental Cookery outlined and records carefully kept. Prerequisite: Experimental Cooking 312 or equivalent. One hour and two laboratory periods. Fee $5.00.

502. *Demonstrations in Food.* (3) This course includes instruction in the technique of food demonstrations and in planning and giving demonstrations for different groups. One hour and two periods. Fee $5.00.

503. *Food Service and Entertainment.* (3) A course designed to offer instruction in preparation and service of food for various types of social occasions. Attention is given to table appointments, settings and decoration suitable for type of entertainment. One hour and two periods. Fee $5.00.

512. *Thesis Writing.* (3) This course in thesis writing is designed for survey of experimental problems in foods and nutrition research for graduate students who major in the Department.

521. *Advanced Nutrition.* (3) A study of the accepted methods used in Nutrition research and discussion of the effect of experimental diets upon growth, reproduction and general nutritional status. Prerequisites: Nutrition 411 or equivalent. Three hours.

522. *Experimental Methods in Nutrition.* (3) This study includes work with experimental animals. Registration by permission of teacher in charge. Prerequisite: Nutrition 521. Hours to be arranged. Three hours. Fee $5.00.

531. *Community Nutrition.* (3) A study of nutritional habits of individuals and methods of improving nutritional practices in a community. Supervised work in surrounding communities and centers. Prerequisite: Nutrition 411 or equivalent. Three hours. Spring.

532. (formerly 519). *A Survey Study in Frozen Foods.* (3) Principles behind the selection, preparation, processing, packaging, freezing rate and temperature control, equipment, storage, thawing and cooking of foods available for freezing. Fee $5.00.

533. (formerly 518). *Review of Literature in Foods and Nutrition.* (3) This course is designed to give the student the opportunity to become acquainted with the related literature in the fields of foods and nutrition.

543. *Research Methods in Foods and Nutrition.* (3) This course will review the various methods of conducting experimentation in foods and nutrition.

581. *Problems in Foods and Nutrition.* (3) Studies of the problems of foods to include marketing, research and food technology; and problems of nutrition to include investigation of the food nutrients and problems in human metabolism. Three hours. $3.00.

582. *Seminar in Methods of Evaluation of Foods and Nutrition Studies.* (3) Study and evaluation of existing research methods in foods and nutrition.

583. *Seminar in Foods and Nutrition.* (3) Seminar to be adapted to the requirements of students enrolled.

DEPARTMENT OF HOME ECONOMICS EDUCATION

ERNA B. JONES, *Head*

The curriculum of Home Economics Education aims towards making a worthy and significant contribution to the general education of the students through a sequence of courses including home economics core, humanities, and the physical, biological, and social sciences.

The curriculum is flexible enough to meet the needs of those who wish to become teachers, home demonstration agents, homemakers, and workers in other positions which require a broad background in home economics. This curriculum meets the requirements set up by the State Board of Education for a permanent professional high school certificate to teach home economics in Tennessee and qualifies graduates to teach in vocational schools under the requirements of the Federal Vocational Education Acts.

The home economics education curriculum is divided into two parts: (1) the freshman and sophomore years which constitute the lower division and (2) the junior and senior years which constitute the upper division.

All home economics education majors are expected to maintain an average of at least "C" in their junior and senior years. All seniors must have a "C" average or above before they are approved for practice teaching.

CURRICULUM IN HOME ECONOMICS EDUCATION

Freshman Year

Name of Course	Quarter Hours Credit I	II	III
English 101-2-3	3	3	3
Foods 111-112	3	3	3
Textiles & Clothing 102-112		3	3
Art 201-202	3	3	
Mathematics 101			3
History 112			3
Chemistry 101-2-3	4	4	4
Home Economics 101	2		
Physical Education 101-2-3	1⅓	1⅓	1⅓
	16⅓	17⅓	17⅓

Sophomore Year

Name of Course	Quarter Hours Credit I	II	III
English 201-2-3	3	3	3
Nutrition 211		3	
Foods 223			3
Clothing and Textiles 211-212	3	3	
Home Management 223 (322)			3
Economics 211-212	3	3	
Education 211-243	3		
Psychology 253		3	
Sociology 322			3
Biology 241	4		
Physical Education 201-2-3	1⅓	1⅓	1⅓
	17⅓	16⅓	16⅓

Junior Year

Name of courses	Quarter Hours Credit I	II	III
Education 341	3		
Psychology 263		3	
Clothing and Textiles 323			3
Child Development 351		3	
Chemistry 321	4		
Biology 302-3		4	4
Home Management 320	3		
Home Management 422			3
Home Management 303			3
Home Economics Education 311	3		
Nutrition 311		3	
Electives	3	3	3
	16	16	16

Senior Year

Name of courses	Quarter Hours Credit I	II	III
Child Development 463			3
Home Management 421-23	3	3	
Home Economics Education 431		3	
Home Economics Education 433	6		
Home Economics Education 442		3	
Foods 412 or 431			3
Electives	6	6	9
	15	15	15

COURSES IN HOME ECONOMICS EDUCATION

Undergraduate

201. *Personal Adjustments and Family Relationships.* (3) Attacks the problems that are most vital to the student's personal adjustment in college, and in her immediate adaptation to family life. Three lectures.

311. *Methods of Teaching Home Economics.* (3) A study of instructional methods and principles of teaching philosophies. Curricula development on basis of needs and relation of home economics to home, school and community. Prerequisite for Home Economics Education 433. Three lecture periods.

312. *Materials and Teaching Aids.* (3) Designed for students preparing to teach home economics in the public schools. Opportunity is provided for experimentation and operation of different teaching aids and procedures. Special attention is given to the use of films, recordings, bulletin board, radio and the place of demonstration, discussions, field trips, home experiences and club work in the teaching of home economics.

431. *Problems of Curriculum and Teaching.* (3) A study of practical methods of organizing the curriculum and adapting its contents to pupil and community needs. Consideration of the part the curriculum has in vitalizing the community and of the underlying principles involved.

432. *Vocational Home Economics Education.* (3) A course in the development of home economics in state and national programs of vocational education. The function performed in vocational guidance; federal aid to vocational education; trends in vocational home economics; annual plans and long-time programs for home economics in the public schools of Tennessee and steps to be taken in setting up service of vocational home economics.

433. *Supervised Teaching in Home Economics.* (6) Supervised observation and teaching in the public schools. Problems of organization and supervision basic to induction of teachers into their profession. Open only to seniors who have completed required work in technical courses. Requirements: Supervised teaching will be done in off-campus teaching centers for a minimum of six weeks. Room and board while in the center will be paid by the student.

441. *Family Relationships and Personality Development.* (3) The study of personal, family, and community relationships; how personality takes place in the family setting; social interaction among members of the family at different stages of the family cycle; selection of friends and how to keep them; courtship and engagement; marriage. Three lecture periods.

442. *Adult Education Methods in Home Economics.** (3) This course deals with a survey of the organization, administration and recent development in adult education with special emphasis upon the field of homemaking education. A study of teaching techniques and materials for adult classes in homemaking and an analysis of the programs in American communities through public school Smith-Lever extension, Smith-Hughes Vocational Education, churches and clubs. Three lecture periods. Laboratory practice will be arranged.

443. *Methods of Conducting Home Demonstration Work.** (3) A course in practical methods of conducting home demonstration work for students interested in that phase of home economics work. A study is made of social conditions which create problems within the community and influence the efforts of community work and of ways of meeting these problems. Three lecture periods. Laboratory practice to be arranged.

450. *Senior Project Writing.*

Graduate Courses

511-12. *Thesis Writing.* (6)

521. *Curriculum Development.* (3) A study of high school home economics curricula. Individual and group work on curricula revision and building, program planning.

522. *Supervision of Student Teaching in Home Economics.* (3) Organization, introduction of students into teaching responsibilities, conferences, planning evaluation of student teachers, relationship between teaching center and the college.

523. *Research in Home Economics Education.* (3) This course is designed for a critical study of research literature adapted to various interests and aspects in home economics.

*Approved for graduate credit.

531. *Home Experiences and Community Programs.* (3) Theory of home projects, guidance and evaluation in home economics summer programs.

533. *Newer Trends in Home Economics.* (3) This course is planned for teachers who have had experience in teaching home economics. Emphasis is placed on evaluation devices and methods for presenting home economics in the school program; organization of classes in adult education and out-of-school youth.

534. *Evaluation in Home Economics.* (3) The purpose of evaluation in the development of home economics programs. Various devices used in evaluation or progress in high school; grading,—test and reports.

561. *Administration in Home Economics.* (3) A course which offers experienced teachers the opportunity to prepare for supervisory or administrative work. Emphasis is placed on program planning and on problems of organization in home economics.

562. *Special Problems in Home Economics Education.* (3) A study of teaching methods for special groups as civic and business organizations and social service centers. Special emphasis is given demonstration methods and use of illustrative materials.

591-592. *Seminar in Home Economics Education.* (3) An integration of interest areas through discussion which aims to broaden the individual in studies which emphasize new trends and creative contributions to the field. Recent literature in field of home economics is reviewed.

DEPARTMENT OF HOME MANAGEMENT

CHRISTINE ALEXANDER, *Head*

The Department of Home Management offers courses in the study of the management of family resources which include time, energy and money management, improvement of personal qualities, the correct furnishing and equipment of the house; in the attainment of family goals and in the understanding of the effect of social and economic forces on the home and its management.

Students desiring to become advisers in home management houses, home management specialists in the extension field, teachers, demonstrators or those interested in work with utility and equipment companies in house planning institutes and consultant services are encouraged to select a curriculum in the Department.

The Department offers a bachelor of Science degree in Family Economics and Household Equipment. Each curriculum requires a minimum of 27 quarter hours of Home Management courses.

The core or required courses are those included in the curriculum outline other than Home Management.

CURRICULUM IN HOME MANAGEMENT

Freshman Year	Quarter Hours Credit		
Name of Course	I	II	III
English 101-2-3	3	3	3
Foods 111-2	3	3	
Art 201-2	3	3	
Clothing and Textiles 102-112		3	3
Chemistry 111-12-13	4	4	4
Physical Education 101-2-3	1⅓	1⅓	1⅓
Home Economics 101-2-3	1	1	1
Electives (approved)			6
	15⅓	18⅓	18⅓

Sophomore Year	Quarter Hours Credit		
Name of Course	I	II	III
English 211-2-3	3	3	3
Foods 223			3
Clothing and Textiles 201		3	
Nutrition 211	3		
Chemistry 321			4
Home Management 223			3
Economics 211-2	3	3	
Mathematics 161-2-3	3	3	3
Physical Education 201-2-3	1⅓	1⅓	1⅓
Biology 241	4		
Electives (approved)		3	
	17⅓	16⅓	17⅓

HOUSEHOLD EQUIPMENT

Junior Year	Quarter Hours Credit		
Name of course	I	II	III
Sociology 322		3	
Art 421			3
Home Management 320		3	
Home Management 323			3
Mathematics 311	3		
Nutrition 311	3		
Foods 312		3	
Home Management 303			3
Physics 221-2-3	4	4	4
Child Development 351	3		
Electives (approved)	3	3	3
	16	16	16

Senior Year	Quarter Hours Credit		
Name of course	I	II	III
Home Management 421	3		
Home Management 423	4		
Nutrition 411	3		
Clothing and Textiles 400			3
Home Management 433		3	
Home Management 434			3
Home Management 442		3	
Electives (approved)	3	3	3
Electives (general)	3	6	6
	16	15	15

FAMILY ECONOMICS

Junior Year	Quarter Hours Credit		
Name of course	I	II	III
Home Management 303	3		
Home Management 323			3
Sociology 322		3	
Clothing and Textiles 321			3
Art 421			3
Statistics 321 (Bus. Adm.)	3		
Home Management 320			3
Child Development 351	3		
Finance 311 (Bus. Adm.)		3	
Nutrition 311	3		
Home Management 422	3		
Home Management 442		3	
Foods 312		3	
Electives (approved)			3
	15	15	15

Senior Year	Quarter Hours Credit		
Name of course	I	II	III
Clothing and Textiles 400			3
Home Management 421	3		
Home Management 423		4	
Nutrition 411	3		
Home Management 433		3	
Electives (general)	3	6	6
Electives (approved)	6	3	6
	15	16	15

COURSES IN HOME MANAGEMENT

Undergraduate

111. *Health and Safety in the Home and Community.* (3) A course designed to contribute to the understanding of health and safety measures which should be set up in the home and community. Three hours.

121. *Home Management.* Household electrical appliances. (3) Fundamentals of electrical household appliances. History and elementary principles, theory of operations, assembling and and disassembling of units, testing, checking and repairing. Two lectures and one laboratory period.

211. *Personal Counseling and Personality Development.* (3) A study of the changes which take place in the social and economic welfare of individuals and families and the factors related to these changes. Three hours.

212. *Introduction to Household Equipment.* (3) A study of home upkeep problems and simple repairs for home equipment and appliances. Two hours, one laboratory period.

223. *Home Nursing.* (3) Special problems in the promotion of health of the family and home care of the sick. Two hours, one laboratory period.

311. *Techniques of Work Simplification.* (3) A study of the principles of the economy of motion in the performances of duties of the home to promote the use of time and energy more effectively. One hour, two laboratory periods.

320. *Advanced Household Equipment.* (3) This course deals with the various types of household equipment, standard brands, their selection and care and the study of problems concerned with the manufacturing, marketing and servicing of the equipment of the household. Two hours, one laboratory period.

322. *Marriage and Family Life Education.* (3) A study of problems before and after marriage and their effect on the ultimate success or failure of family life. Three hours.

323. *Financial Planning for the Individual and Family.* (3) A course which introduces the case method in financial planning. The student learns to interpret figures and to apply them in managing the income. Three hours.

401. *Kitchen Clinic.* (1-3) In this course consideration is made of problems encountered in planning new kitchen and improving the old ones; in the conservation of time and energy; the elimination of stress and strain of daily duties and the development of beautiful and convenient surroundings. Work with the community is stressed. One hour, two laboratory periods.

412. *Home Use of Electricity.* (3) This course deals with the selection, correct use and care of electrical equipment for the household. A comparative study is made of old models of electrical equipment and recent models; purchase and operating costs and expenses for repair.

421. *Problems in Home Management.* (3) This course is required parallel with Home Management 423. Three hours.

422. *Economic Problems of the Household.* (3) A course which introduces the student to the major social and economic problems that confront families. Those studied relate to the founding of the family, the stages of family life and the basic factors which determine the standards of living. Three hours.

423. *Home Management Residence.* (4) A course designed to study the principles of effective home management. It provides experience in family living with its attendant responsibilities in the various phases of homemaking. The residence period is six weeks and fees are based on cost of board at the University. A prerequisite: Senior standing. Admission on application submitted to Department office.

433. *Consumer Education.* (3) A study of problems of the consumer and the market, market practices, methods of intelligent buying of commodities and legislation governing labeling and branding. Three hours.

434. *Family Finance.* (3) A study of financial problems of family groups and plans for developing economic security. Considerations are made of budgeting; the operation costs of a home, legal aspects of the home, inheritance and investments. Prerequisites: Economics 211-12. Three hours.

441. *Advanced Consumer Buying.* (3) A course which deals with advanced study of marketing problems and consumer credit. Individual problems which concern the technology of buying a particular type of consumer goods is assigned each student and surveys are made of current legislation and consumer literature. Three hours.

442. *Housing for the Family.* (3) A study of housing requirements for families; the influence of interests, activities and socio-economic status and the principles affecting the planning of homes and communities. Three hours.

443. *Methods in Demonstration.* (3) A course designed to develop skill and ability by organizing material, and presenting it in a series of demonstrations. A study is made of methods of presentation by announcements, articles, radio and TV talks. Field experience available. Three hours.

Courses in Home Economics

Undergraduate

101-2-3. *Orientation.* (3) A course designed to orient the student into the entire field of home economics and to the life of the University. One lecture. One hour of credit per quarter.

303. *Agriculture for Home Economics Students.* (3) Same as Agriculture 303. Two lectures and one laboratory period.

HUMANITIES

DEPARTMENT OF ENGLISH

Crawford B. Lindsay, *Head*

The program of the Department of English is so arranged as to serve the needs of all of the students of the University, as well as to give a thorough foundation to those who desire to become specialists or teachers in the field. The Department also gives assistance to those who look forward to further study in the field of journalism.

Work leading to either undergraduate or graduate degrees may be pursued in the Department. The English major who entered as a freshman during or since September, 1950, is required to take the degree of Bachelor of Arts. The English major who entered the institution prior to September, 1950, or who transferred with advanced standing from another institution, may be permitted under certain conditions to take the degree of Bachelor of Science.

Graduate students in English may qualify for either the degree of Master of Arts in English or the degree of Master of Arts in the Teaching of English. The student who is preparing specifically for work in the public schools is encouraged to take the latter degree.

Candidates for both undergraduate degrees in English must present at least forty-five quarter hours of work in the field. Thirty-seven quarter hours of this work must be completed in courses beyond the eighteen hours (English 101-102-103; 221-222-223) required of freshmen and sophomores. Those who desire to elect English as a minor subject must complete thirty-six hours of work in the subject, including the eighteen hours of freshman and sophomore work in English. Candidates for the degree of Bachelor of Arts with a major in English are required to complete at least two years of work in one foreign language. They must also complete either two years of work in a laboratory science or one year of work in a laboratory science and one year of work in mathematics (Mathematics 131-132-133). Candidates for the degree of Bachelor of Science are not held to the requirement in foreign languages.

Majors in English are required to complete the following courses: English 101-102-103 (Freshman English); English 221-222-223 (Literature for Sophomore Majors); English 361-362-363 (American Literature); and English 451 (History of the English Language). Those who wish to become certified to teach are also encouraged to elect twenty-seven quarter hours of work in courses in Education approved by the State Department of Education and some work in American History. They are also required to so distribute their elections in English as to obtain some training in types, period, and individual authors courses and some instruction in dramatic literature, either ancient, Shakespearean, or modern.

CURRICULUM IN ENGLISH
(For A.B. Degree)

Freshman Year	Quarter Hours Credit		
Name of Course	I	II	III
English 101-2-3	3	3	3
[1]French, Spanish or German 101-2-3	3	3	3
History 121-2-3	3	3	3
Biology, Chemistry, Physics or Mathematics	4	4	4
Electives	3	3	3
Air Science I (men)	1	1	1
Physical Ed. 101-2-3 (men)	⅓	⅓	⅓
Physical Ed. 101-2-3 (women)	1⅓	1⅓	1⅓
	17⅓	17⅓	17⅓

Sophomore Year	Quarter Hours Credit		
Name of Course	I	II	III
English 221-2-3	3	3	3
[1]French, Spanish or German 201-2-3	3	3	3
Sociology or Political Science	3	3	3
Science or Major	4	4	4
Elective or Minor	3	3	3
Air Science II (men)	1	1	1
Physical Ed. 200's (men)	⅓	⅓	⅓
Physical Ed. 200's (women)	1⅓	1⅓	1⅓
	17⅓	17⅓	17⅓

[1]The language requirement for the degree may be satisfied by the continuation for two years in college of the language presented for entrance, if entrance credits are for two years; if credit for four years is presented for entrance, the requirement may be satisfied by the continuation of the same language for one year in college. If no credit in foreign language is presented for entrance, or if the language presented on entrance is not continued in college, only two years of one language will be required. Students who plan to do graduate work are advised to secure a reading knowledge of French or German.

Junior Year

Name of Course	Quarter Hours Credit I	II	III
A course in American History	3		
Major	6	6	6
Minor	3	3	3
Electives	6	9	9
	18	18	18

Senior Year

Name of Course	Quarter Hours Credit I	II	III
History 491 or 492	3		
Major	3	3	3
Minor	3	3	3
Electives	9	9	9
	18	15	15

Undergraduate Courses

100. *English Fundamentals.* A non-credit course designed for students who give evidence by entrance examination of their inability to meet the standards of English 101.

101. *English Composition.* (3) Fall. The principles of correct English with special attention directed to the mechanics of writing and the fundamentals of English grammar. Interpreting the printed page, use of the library, paragraphing, sentence building, word study, punctuation and other mechanical essentials of writing. Forms of composition include the class theme and essay.

102. *English Composition.* (3) Winter. Principles of correct English continued with attention directed to a more analytical study of the forms of composition. The research paper, the report, outlining, notetaking, paraphrasing, summarizing, and locating information are included during the quarter.

103. *English Composition.* (3) Spring. Writing based on literary types, both prose and poetry. Introduction to the study of literature. Techniques of writing, continued.

200. *Grammar Review.* (3) Spring. A thorough review of the principles of composition, primarily designed to offer continued practice in this area of instruction. Required of all students with "D" in two courses of the series, English 101, 102, 103; an elective for others.

211-2-3. *World Literature for Non-Majors.* (9) (Three credit hours each quarter.) Fall, Winter, Spring, respectively. A course which embraces the study of the principal works, by types, of World Literature from the Ancients to the contemporary American, British, French, German, Spanish, and Italian writers. Non-majors are encouraged to elect these courses rather than 221-222-223.

221. *World Literature for English Majors.* (3) Fall. A survey of some of the masterpieces of world literature in translation. Required of all majors in English.

222-3. *Survey of English Literature.* (6) (Three credit hours each quarter.) Winter and Spring respectively. Lectures, reports, readings, and classroom discussion of major English works from the Anglo-Saxon Period to the Twentieth Century. (These courses were offered as English 202-203 during 1949-1950, as English 201-202 prior to September, 1949, and as English 212-213 during 1950-1951.) Required of all majors in English.

261-2. *Children's Literature.* (6) (Three credit hours each quarter.) Winter and Spring respectively. (Offered also as Education.) This course offers prospective teachers of the primary grades an opportunity to become familiar with the field of literature suited to the tastes of children. Principles that underlie selection of children's literature will also be considered.

301-2-3. *Elementary Journalism.* (9) (Three credit hours each quarter.) Fall, Winter, Spring, respectively. A practical course in English composition, with emphasis upon the construction and function of daily and weekly newspapers, community publicity, school publications, and news stories.

311. *Literature of the Romantic Movement.* (3) Fall. Study of representative British selections from 1798 to 1832. Attention will be given to both poetry and prose.

312. *The Vistorian Era.* (3) Winter. Study of selections from the chief representatives of the Victorian Period in Great Britain, with emphasis upon the relation of the literature to the time in which it was written.

313. *Literature of the Twentieth Century.* (3) Spring. Study of representative British selections from the turn of the century to the present.

321. *Business English.* (3) Fall. A course in business correspondence and advertising.

322. *Expository Writing.* (3) Winter. Training in preparation of the research report and other types of expository writing, with emphasis on the collection of material, analysis, organization, and arrangement.

323. *Literary Criticism.* (3) Spring. Studies in the significance of critical traditions and in current practices in criticism. Individual interests will be followed in the preparation of critcal papers.

331. *Literature of the Sixteenth Century.* (3) Fall. Study of representative British selections from 1500 to 1600. A consideration of the dramatic and non-dramatic literature of the century: Lyly, Peele, Greene, Linacre, More, Colet, and others. The poetic types will also be included.

332. *Literature of the Seventeenth Century.* (3) Winter. Study of representative British selections from 1600 to 1700. The poetry and prose of the period will be studied in relation to streams of thought of the century as revealed in the writings of the metaphysical, Cavalier, Puritan, and Restoration authors.

333. *Literature of the Eighteenth Century.* (3) Spring. Study of representative British selections from the Ages of Pope (1700-1744) and Johnson (1744-1788).

341. *Introduction to Drama.* (3) Fall. Study of drama as a literary form. Selections studied will be some of the representative classical and modern plays.

342. *Modern Drama.* (3) Winter. Extensive study of selections from modern European drama, chiefly British. Readings and reports.

343. *American Drama.* (3) Spring. Continuation of English 342, using selections from chief American playwrights.

351. *Oral Interpretation of Literature.* (3) Fall. (Offered as Speech.) Principles of oral reading, intensive study of background and thought content of literary materials: memorization; individual drill.

361-2-3. *Survey of American Literature.* (9) (Three credit hours each quarter.) Fall, Winter, Spring, respectively. Fall Quarter: American Literature from Colonial times to the Civil War; Winter Quarter: American Literature from the Civil War till 1900; Spring Quarter: American Literature of the twentieth century. The more important Negro authors are integrated among the other authors in chronological order. This course is required of all majors in the junior year.

371. *Advanced Composition.* (3) Fall. This course is open to students beyond the freshman year who desire additional training in written communication.

393. *Literature of Negro Life.* (3) Spring. A study of American literature dealing primarily with Negro life.

401. *The Metaphysicals.* (3) Fall. Study of the works of John Donne, George Herbert, Richard Crashaw, and Henry Vaughn. Research papers will be required.

402. *Wordsworth and Coleridge.* (3) Winter. Study of some of the poetic and prose works of the two most famous English romantics. Research papers will be required.

403. *Tennyson and Browning.* (3) Spring. Study of some of the poetic works of the two great Victorian authors. Research papers will be required.

411. *Shakespeare.* (3) Fall. A study of the principal plays of Shakespeare.

412. *Shakespeare.* (3) Winter. A continuation of the study of Shakespeare, with emphasis upon the cultural background of the Elizabethan Period.

413. *Comparative Literature.* (3) Spring. Prerequisite: Thirty-six hours of English. An intensive study of some of the masterpieces of world literature in translation.

421. *The English Novel.* (3) Fall. A study of selected English novels, with attention to the social backgrounds in which they were written.

422. *The American Novel.* (3) Winter. A study of selected American novels, with attention to the social backgrounds in which they were written.

423. *The Continental Novel.* (3) Spring. A study of selected Continental novels with attention to the social backgrounds in which they were written.

431. *Milton and Bunyan.* (3) Fall. Study of Milton's *Paradise Lost, Samson Agonistes,* and the minor poems and of Bunyan's *Pilgrim's Progress.* Research papers will be required. (This course will alternate with English 401.)

432. *Byron, Shelley, and Keats.* (3) Winter. Study of the poetry of Byron, Shelley, and Keats, and research on some of the problems arising from this study. (This course will alternate with English 402.)

433. *Carlyle, Ruskin, and Arnold.* (3) Spring. Study of the prose works of Carlyle, Ruskin, and Arnold in the light of social, economic, and political trends of the Victorian Era. Research papers will be required. (This course will alternate with English 403.)

441. *Emerson and Thoreau.* (3) Fall. Study of special problems arising from a consideration of the poetic and prose works of two American Transcendentalists. Research papers will be required.

442. *Poe and Whitman.* (3) Winter. Study in the poetry, the short stories, and the criticism of Edgar Allan Poe and in the poetry of Walt Whitman. Research papers will be required.

443. *Sandburg, Frost, Masters, and Millay.* (3) Spring. Study of the poetry of four contemporary American authors. Research papers will be required.

451. *History of the English Language.* (3) Fall and Spring. Prerequisite: eighteen hours of English. A study of the development of the English language from the beginnings to modern times. Some attention is given to phoenetics and to the elementary principles of linguistics. (Required of all English majors.)

452. *Methods of Teaching High School English.* (3) Winter and Spring. (Offered also as Education.) Prerequisites: Thirty-six hours of English. A methods course in secondary school English. Required of majors. Must be taken during residence at this University.

453. *Current English.* (3) Spring. Prerequisite: Eighteen hours of English. Advanced grammar and modern usage. Some attention is given to semantics.

461. *Franklin, Paine, and Jefferson.* (3) Fall. Study of the prose of three of the founders of the American republic. Research papers will be required. (This course will alternate with English 441.)

462. *Whittier, Longfellow, and Lowell.* (3) Winter. Study of the poetry of three of the better known American authors of the nineteenth century. Research papers will be required. (This course will alternate with English 442.)

463. *DuBois, J. W. Johnson, Cullen, and Hughes.* (3) Spring. Study of the works of four of the most influential American Negro authors of the present century. Research papers will be required. (This course will alternate with English 443.)

Graduate Courses

Although it will be impossible to offer all of these courses each year, any of them may be offered and an instructor and a classroom assigned, where there is demand.

501. *Old English.* (3) Fall. A study of Anglo-Saxon grammar and readings. Prerequisite: Thirty-six hours of English.

502. *Old English.* (3) Winter. Continuation of English 501. Prerequisite: English 501.

503. *Beowulf.* (3) Spring. Prerequisites: English 501 and 502. A reading of *Beowulf* in Old English and an inquiry into some of the scholarly problems which the poem poses.

511-512. *The English Seminar.* (6) (Three credit hours each quarter.) English 511 will be a course in methods and materials for the study of English language and literature. English 512 will be the writing of the thesis itself.

521-2-3. *Studies in Nineteenth and Twentieth Century English Literature.* (9) (Three credit hours each quarter.) During the Fall and Winter Quarters a few of the contemporary British authors will be studied. Each student will be required to complete one or more papers of a scholarly nature.

531-2-3. *Studies in the Development of the Novel in the United States.* (9) (Three credit hours each quarter.) This course consists of research in some of the principal works of fiction of the United States.

541. *The English Drama I.* (3) Fall. The English Drama from its origin to 1642.

542. *The English Drama II.* (3) Winter. The English Drama from 1660 to 1800.

543. *The English Drama III.* (3) Spring. The English Drama from 1800 to the present.

551-2-3. *Studies in Language and Current Usage.* (9) (Three credit hours each quarter.)

561-2-3. *Studies in Restoration and Eighteenth Century Literature.* (9) (Three credit hours each quarter.) Research in British literature, 1660-1800. Topics will vary according to student interest.

571. *Problems in Shakespeare.* (3) A conference and research course devoted to an extensive study of Shakespeare in relation to critical movements. Prerequisites: English, 411, 412.

581-2-3. *Studies in American Literature.* (9) (Three credit hours each quarter.) Topics will vary according to student interest.

DEPARTMENT OF MODERN FOREIGN LANGUAGES

ALMA T. WATKINS, *Head*

The Department of Modern Foreign Languages offers the B.A. degree.

Students who select a foreign language major shall present 18 credit hours of course work in the lower division (Freshman and Sophomore years), and at least 27 credit hours of work in the upper division (Junior and Senior years) of their concentration group, i.e., courses bearing numbers above 300.

Students who select a foreign language minor shall present 18 credit hours of course work in the lower division (Freshman and Sophomore years) of their selected language, and at least 9 credit hours of course work in the upper division (Junior and Senior years) of their concentration group, i.e., courses bearing numbers above 300.

*Students who present entrance credit in a foreign language will begin at the appropriate level. Courses will be chosen by the student in consultation with his major adviser. Substitution for required courses must be approved by the department.

All majors must present for credit at least three hours of work in the upper division courses with each of two different instructors, and must have an acceptable pronunciation and an adequate reading command of the language.

CURRICULUM IN MODERN FOREIGN LANGUAGES

Freshman Year	*Quarter Hours Credit*		
Name of Course	I	II	III
French, German or Spanish 101-2-3	3	3	3
English 101-2-3	3	3	3
History 121-2-3	3	3	3
Biology, Chemistry, Physics or Math.	4	4	4
Electives	3	3	3
Physical Ed. 101-2-3	1	1	1
	17	17	17

Sophomore Year	*Quarter Hours Credit*		
Name of Course	I	II	III
French, German or Spanish 201-2-3	3	3	3
English 211-12-13	3	3	3
Sociology or Political Science	3	3	3
Biology, Chemistry, Physics or Math.	4	4	4
Minor	3	3	3
Physical Ed. 201-202-203	1	1	1
	17	17	17

*The language requirement for the B.A. degree in the School of Arts and Sciences may be satisfied by the continuation for two years in college of the language presented for entrance credit, if entrance credits are for two years; if credit for four years is presented for entrance, the requirement may be satisfied by the continuation of the same language for one more year in college. If no credit in foreign language is presented for entrance or if the language presented is not continued in college, three years of one language must be taken in college.

Junior Year	*Quarter Hours Credit*		
Name of Course	I	II	III
French, German or Spanish 311-12-13	3	3	3
Minor	3	3	3
Education	6	6	6
Elective or major	6	6	6
	18	18	18

Senior Year	*Quarter Hours Credit*		
Name of Course	I	II	III
French or Spanish 421-2-3	3	3	3
French or Spanish 341-2-3	3	3	3
History 411	3		
Minor	3	3	3
Education	3	3	6
Elective or major	3	3	
	18	15	15

COURSES IN GERMAN

Undergraduate

101-2-3. *Elementary German.* (9) Pronunciation, grammar, graded reading.

201-2-3. *Intermediate German.* (9) Grammar review, graded reading, collateral reading and reports. Prerequisite: German 101-2-3.

311-2-3. *Introduction to Classical and Modern Writers.* (9) Prerequisite: German 201-2-3.

COURSES IN FRENCH

Undergraduate

101-2-3. *Elementary French.* (9) Pronunciation, grammar, dictation, graded reading.

201-2-3. *Intermediate French.* (9) Grammar review, composition, extensive reading and reports, dictation, conversation. Prerequisite: One year of college French or two years of approved high school French. Course conducted partly in French.

221-2-3. *Conversational French.* (9) Elective for students who have completed French 103 or the equivalent. Recommended for students in French 201-2-3 or 311-2-3 and especially for those who plan to take French 441-2-3. Not to be used to satisfy any part of the language requirement.

311-2-3. *Aspects of French Literature.* (9) Selected readings intended to give students an acquaintance with some of the more important personalities, movements and ideas of French literature with emphasis placed on 17th, 18th, and 19th century literature.

341-2-3. *Intermediate Composition and Conversation.* (9) A grammatical analysis of modern French prose; application in oral and written composition with extensive conversational practice. Prerequisite: French 203.

381-2-3. *Survey of French Literature.* (9) From its beginnings to 1914.

411-2-3. *The Classical Age of French Literature.* (9)

433. *Main Ideas of the Eighteenth Century.* (3) To follow 411-12-13.

421-2-3. *Phonetics, Advanced Grammar and the Teaching of French.* (9) Analysis of the sounds of French and their articulation. Grammatical analysis and composition. A study of teaching methods, materials and texts. Prerequisite: French 203. Required of those wishing certification.

441-2-3. *French Civilization.* (9) The history of French civilization and culture. Conducted largely in French.

*451-2-3. *Modern French Literature.* (9) The nineteenth century in the novel, drama and poetry; romanticism; realism; the Parnassian reaction in poetry; naturalism; symbolism.

*461-2-3. *Readings in French Literature.* (9) Open to honor students, or those with a 3.0 average in all their university work.

*471-2-3. *French Literature of the Twentieth Century.* (9) Studies in the works of leading figures in the novel, drama, poetry, criticism and philosophy.

Graduate Courses in French

501-2-3. *Old French.* (9) Introduction to Medieval French. Readings, phonology and morphology.

511-2-3. *Research in Thesis Writing and the Thesis.* (9) Required of all candidates for the Master's degree in French.

521-2-3. *French Literature of the Sixteenth Century.* (9) Particular emphasis on the Pleiade, Rabelais and Montaigne.

541-2-3. *The French Novel.* (9) Origins and Development of the Novel to 1914.

551-2-3. *The French Drama.* (9) Origins and Development of the Drama to 1914.

561-2-3. *Readings in French Literature.* (9) Supervised readings arranged according to the needs of the students. Conferences and reports.

571-2-3. *History of the French Language.* (9) The development of French from Latin and Proto-Romance to the medieval language. The rise of the standard language; the Renaissance and Modern Language. Analyses of changes in sounds and forms. Lectures, discussion, reading and analyses of texts.

Italian

101-2-3. *Elementary Italian.* (9) Pronunciation, grammar, dictation and graded reading.

201-2-3. *Intermediate Italian.* (9) Grammar review and composition. More extensive reading and reports. Prerequisite: Italian 101-2-3.

Courses in Spanish

Undergraduate

101-2-3. *Elementary Spanish.* (9) Pronunciation, grammar, dictation, graded reading.

201-2-3. *Intermediate Spanish.* (9) Grammar review, composition, extensive reading and reports. Prerequisite: One year of college Spanish or two years of approved high school Spanish. Course conducted partly in Spanish.

221-2-3. *Conversational Spanish.* (9) Elective for students who have completed Spanish 103. Recommended for students in Spanish 201-2-3 or 311-2-3 and especially for those who plan to take Spanish 441-2-3. Not to be used to satisfy any of the language requirement.

311-2-3. *Aspects of Spanish Literature.* (9) Selected readings intended to give the students an acquaintance with some of the important personalities, movements and ideas of Spanish literature of the 18th and 19th centuries. Prerequisite: Spanish 203.

*Approved for graduate credit.

331-2-3. *Spanish American Literature.* (9) Selected readings to give the student an acquaintance with the important ideas, personalities and types of literature of the Colonial Period, the Revolutionary Period, The Gaucho Literature and Modernism.

341-2-3. *Intermediate Composition and Conversation.* (9) A study of Spanish grammar as exemplified by the best modern writers. Oral and written compositions. Prerequisite: Spanish 203.

381-2-3. *Survey of Spanish Literature.* (9) Spanish literature from its beginning to the present.

411-2-3. *Spanish Prose and Poetry of the Golden Age.* (9) The Pica resque Novel; Cervantes; The Comedia.

421-2-3. *Phonetics; Advanced Grammar and Composition; The Teaching of Spanish.* Analysis of the sounds of Spanish and articulation. Grammatical analysis and composition. A study of teaching methods, materials and texts. Required of all those wishing to be certified in the teaching of Spanish.

441-2-3. *Spanish and Spanish American Civilization.* (9) A course in the history of Spanish and Spanish American Civilization and culture. Conducted in Spanish.

*451-2-3. *Modern Spanish Literature.* (9) A survey of the 19th Century Novel, Drama and Poetry. Romanticism, Realism, Regionalism and Modernism.

*461-2-3. *Readings in Spanish and Spanish American Literature.* (9) Open to honor students only, or those with a 3.0 average in all of their college work.

Graduate Courses in Spanish

501-2-3. *Old Spanish.* (9) A study of old Spanish language and literature with readings from prose and poetry.

511-2-3. *Research in Thesis Writing and the Thesis.* (9) Required of all candidates for the Master's degree in Spanish.

521-2-3. *Origins and Development of the Spanish Novel.* (9) First Quarter: The Celestina, authorship, sources and influences. Second Quarter: The Quijote. Third Quarter: The Picaresque Novel.

531-2-3. *The Modern Spanish Novel.* (9) An intensive study of the modern Novel beginning with Fernan Caballero.

551-2-3. *The Spanish Drama from its Origins to the Present.* (9)

561-2-3. *Readings in Spanish and Spanish-American Literature.* (9) Literature selected according to the needs of the students.

571-2-3. *History of the Spanish Language.* (9) The development of Spanish from Latin and Proto-Romance to the Medieval language. The rise of the standard languages; the Renaissance and Modern Languages. Analyses of changes in sounds and forms. Lectures, discussions, reading and analyses of texts.

DEPARTMENT OF SPEECH AND DRAMA

Thomas E. Poag, *Head*

The departmental program in Speech and Drama is divided into three areas: (1) Dramatic Production; (2) Public Speaking and Discussion; (3) Phonetics

*Approved for graduate credit.

and Speech Training; and (4) Radio and Television. The purposes of the department are to train teachers in the areas of Speech and Drama for public schools and colleges; and technicians for the educational, community and professional theatres; and for radio and television. The department offers service courses for non-majors who are interested in speech improvement.

Courses in the field of Speech and Drama include all of the training required by the State Department of Education for a teaching certificate, and further to meet the needs of graduate students. Forty-eight hours of courses in Speech, Drama and related subjects are required for a major; and 18 hours for a minor. The basic requirements are the same for both the Bachelor of Arts and the Bachelor of Science degrees.

Major. A student registered in the department of Speech and Drama for the A.B. degree must complete 48 hours of course work in the areas of Speech and Drama, and the required courses in the lower and upper divisions. The required courses include: Eighteen hours of English; 9 hours of History; 18 hours of a Modern Foreign Language; 18-24 hours in the Sciences (Biology, Zoology, General Science, Mathematics or the Elements of Physics), and 18 hours in Sociology or Political Science. All Speech and Drama majors are encouraged to minor in Education, 27 hours; and English, 36 hours.

a. A student registered in the department of Speech and Drama for the B.S. degree must complete 48 hours of course work in the areas of Speech and Drama, and the required courses which include: Education, 36 hours; English, 18 hours; Sociology or Political Science, 18 hours; Science, 12 hours, (General Science or Mathematics) and History, 9 hours.

Minor. A student minoring in Speech and Drama must complete 18 hours in the following courses: Speech 201-202, 203, 301, 303 and 412 (413). Students are encouraged to take from 24-27 hours for the minor.

CURRICULUM IN SPEECH AND DRAMA

Freshman Year	*Quarter Hours Credit*		
Name of Course	I	II	III
Speech 111-12-13	1	1	1
Speech 201-2-3	3	3	3
English 101-2-3	3	3	3
French, Spanish or German 101-2-3	3	3	3
Biology, Zoology, Physics, Math. or General Science (111-12-13)	3	3	3
History 121-2-3	3	3	3
Physical Education (men) 101-2-3	⅓	⅓	⅓
Air Science I (men)	1	1	1
Physical Education (women) 101-2-3 ..	1⅓	1⅓	1⅓
	17⅓	17⅓	17⅓

Sophomore Year	*Quarter Hours Credit*		
Name of Course	I	II	III
Speech 211-12-13	3	3	3
English 211-12-13	3	3	3
Social or Political Science	3	3	3
Math., Physics, Zoology or Biology	4	4	4
French, Spanish, or German 201-2-3	3	3	3
Physical Education 200's (men)	⅓	⅓	⅓
Air Science II (men)	1	1	1
Physical Education 200's (women)	1⅓	1⅓	1⅓
	17⅓	17⅓	17⅓

Junior Year	*Quarter Hours Credit*		
Name of Course	I	II	III
Speech 201-2-3	3	3	3
Speech 341-2	3	3	
Electives			3
English	6	6	6
Education	6	6	6
	18	18	18

Senior Year	*Quarter Hours Credit*		
Name of Course	I	II	III
Speech 411-12-13	3	3	3
Speech 421-2-3	3	3	3
History 411		3	
Education	6	6	
Speech 451	3		
Electives		3	9
	15	15	15

Undergraduate

Speech

201. *Fundamentals of Speech.* (3) Fall. Emphasis will be placed on speaking as a thinking process. The student will have practical problems in voice improvement, voice control, vocal breathing, articulation and enunciation. Platforms manners and delivery will be stressed.

202. *Public Speaking.* (3) Winter. The practice of speech, composition and delivery will be stressed. The student will have practice in preparing and presenting short informative, entertaining and persuasive speeches. The methods in which the student is trained are applicable to social and business conversation as well as to public speaking.

203. *Argumentation and Debating.* (3) Spring. This course deals with such principles and practices of argumentation as analysis of propositions, evidence, brief making, and preparation and delivery of forensics, as well as participation in classroom discussions. Techniques governing round table, forum and panel discussions will be studied.

212. *American Pronunciation.* (3) Winter. Studies in regional phonetics.

213. *Speech Correction.* (3) Spring. The course is especially designed to meet the needs of the teacher of speech in public schools and colleges. This course will deal with actual clinical processes in the theory and practice of speech correction and training of visual hearing.

223. *Choral Speaking.* (3) Spring. Oral group interpretation of verse. Affords an opportunity for intensified and vital artistic expression through the formation of a speaking choir. Values for both elementary and adult group. Methods of conducting groups and selection of materials will be considered. (Class limited to 25).

*321. *Speech Correction.* (3) Fall. Functional speech defects and clinical practice. Prerequisite: Speech 213.

*322. *Speech Correction.* (3) Winter. Organic speech defects and clinical practice. Prerequisite: Speech 321.

*323. *Speech Correction.* (3) Spring. Methods of teaching speech correction. Prerequisite: 322.

*361. *Parliamentary Procedure.* (3) Fall. This course deals with a study of the laws and techniques of parliamentary practices.

450. *Senior Project.* (3)

*451. *History of English Language.* (3) Fall. Same as English 451. Prerequisite: Speech 201.

*452. *Advanced Public Speaking.* (3) Winter. The history of public address from the Greeks to modern times.

*Approved for graduate credit.

453. *Methods of Teaching High School Speech.* (3) Spring. A method's course in the teaching of speech and drama on the secondary level.

Drama

111-12-13. *Theatre Practice.* (3) An introduction to theatre organization and practices. One credit hour each quarter.

211. *Elements of Acting.* (3) This course deals with study and practice in the fundamentals of acting technique. The importance of voice, posture, gesture, and movement in theatrical expressiveness. Scenes from the world's best dramas will be analyzed and used as criteria for the course.

301. (401) *General Dramatics.* (3) Fall. This course deals with the basic principles of stage design, casting, acting technique, preliminary script analysis, and the technique of producing plays. The student will be required to make a prompt book and to apply his technical knowledge to the productions of the years.

302. *Play Interpretation and Direction.* (3) Winter. The fundamental principles of directing are taught through exercises and projects. Each student will be required to direct a one-act play, and to attend rehearsals of the Tennessee State Players Guild. Study and practice in the methods by which the values of the written drama are translated to the stage in terms of acting, stage composition, grouping, movement, tempo smoothness, and rhythm will be emphasized. Prerequisite: Speech 301.

303. (301) *Playwriting.* (3) Spring. This course deals with the general principles and techniques of playwriting. Practical laboratory work dealing with a study of the plot, characterization, and dialogue necessary for creative production for stage, radio and screen will be stressed. The student will have an opportunity to stage his original plays in the workshop theatre. Prerequisite: Speech 302.

322. *Theatre Practice.* (3) Practical experience in the theatre workshop and weekly reports. To be given each quarter.

341. *Introduction to Drama.* (3) Fall. Same as English 341.

342. *Modern Drama.* (3) Winter. Same as English 342.

343. *American Drama.* (3) Spring. Same as English 343.

411. *Shakespeare.* (3) Fall. Same as English 411.

412. *Community Drama.* (3) Spring. This course will take up the problems of the teacher, and community worker in the presentation of plays. Special emphasis will be placed upon directing and recreational activities in the rural communities. General techniques in organizaing and managing the Little Theatre in social centers, churches, and clubs will be stressed. The student will have an opportunity to make general equipment for the community theatre in the scenic workshop. Special problems in analysis and production of pageants, folk-songs, masque, and festivals in relation to community development are also studied.

*421. *Stage Design.* (3) Fall.

*422. *Stagecraft.* (3) Winter.

*423. *Stage Lighting.* (3) Spring.

431. *Costume Design.* (3) Fall.

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*Approved for graduate credit.

Radio

331. *Radio Production.* (3) An introductory course dealing with the basic principles of formulating and producing the radio program.

332. *Radio Acting.* (3) This course will deal with the methods and techniques involved in the presentation of radio plays. The students will present plays over radio station WSOK.

333. *Radio Writing.* (3) A study of the techniques and methods used in writing the radio script. The student will be required to write a number of scripts for various types of programs.

Graduate

501. *Phonetics and Speech Training.* (3) Fall. Principles of phonetics; study of English pronunciation, based chiefly on contemporary American usage; practice in phonetic analysis and, where necessary, drill for improvement of individual speech.

Speech

502. *Regional and Historical Phonetics.* (3) Winter.

503. *Voice Science.* (3) Spring.

511-12. *Research and Thesis Writing in Speech and Drama.* (6)

521-22. *History of Public Address.* (6).

523. *Advanced Public Speaking.* (3) Spring.

531-32-33. *Speech Correction.* (9).

Drama

541-42-43. *Dramatic Theory.* (9).

551-52-53. *Studies in Drama and Theatre.* (9).

561-62-63. *Play Interpretation and Direction.* , (9).

571-72-73. *Advanced Playwriting.* (9).

581-82-83. Same as English 541-42-43—English Drama I, II III, (9).

NATURAL SCIENCES

DEPARTMENT OF BIOLOGY

FREDERICK E. MAPP, *Supervisor*

The basic objective of the Department of Biology is to give the student a broad view of the whole of biology, based on first-hand practical experience with as wide a variety of phenomena of life as is feasible. The program centered around this objective constitutes a major in Biology leading toward the B.S. degree. The graduate program emphasizes specialization in a particular field of interest and leads toward the M.S. degree.

A major in the Department of Biology must include the following courses: Biology 111-2-3, 211-2-3, 311, 332-3, 431 and 442-3.

A minor in the Department must present the following courses: Biology 111-2-3, 211-2-3, 311 and 442-3.

The Department of Biology, in cooperation with other science departments, prepares students for entrance into the following fields: medicine, dentistry, pharmacy, nursing, medical technology, dental hygiene, professional biology and teaching.

Curriculum in Biology

Freshman Year

Course	I	II	III
Biology 111-2-3	4	4	4
Chemistry 111-2-3	4	4	4
Mathematics 161-2-3	5	5	5
English 101-2-3	3	3	3
Air Science I (Men)	1	1	1
Physical Education 101-2-3 (Men)	⅓	⅓	⅓
Physical Education 101-2-3 (Women)	1⅓	1⅓	1⅓
	17⅓	17⅓	17⅓

Sophomore Year

Course	I	II	III
Biology 211-2-3	4	4	4
Physics 211-2-3	4	4	4
English 211-2-3	3	3	3
*German or French 101-2-3 or 201-2-3 or History 201-2-3	3	3	3
Psychology 221-2-3	3	3	3
Air Science II (Men)	1	1	1
Physical Education 202 (Men)	⅓	⅓	⅓
Physical Education 202 (Women)	1⅓	1⅓	1⅓
	18⅓	18⅓	18⅓

Junior Year

Course	I	II	III
Biology 311	4		
Biology 332-3		4	4
Chemistry 311-2-3	4	4	4
History 201-2-3	3	3	3
Secondary Education or Electives	7	7	7
	18	18	18

Senior Year

Course	I	II	III
Biology 431	4		
Biology 442-3		4	4
Secondary Education or Electives	7	7	7
Electives	7	7	7
	18	18	18

*German is strongly recommended.

Undergraduate Courses

101-2-3. *Fundamentals of Biology.* (12) Studies of biological principles with special application to man. Other organisms are also studied. For non-majors who wish to satisfy laboratory science requirements. These courses may be taken out of sequence. Three lectures and two laboratory periods. Laboratory fee $3.00 each quarter.

111-2-3. *Invertebrate Zoology.* (12) (Formerly Zoology 401.) The anatomy, physiology, development and phylogeny of the invertebrates. These courses are for majors in Biology and must be taken in sequence. Three lectures and two laboratory periods. Laboratory fee $3.00 each quarter.

211-2-3. *Fundamentals of Botany.* (12) (Formerly Botany 111-2-3.) This course deals with the anatomy, physiology and taxonomy of plants. Three lectures and two laboratory periods. Laboratory fee $3.00 each quarter.

221. *Plant Anatomy.* (4) (Formerly Botany 322.) A study of the structure of higher plants. Prerequisites: Biology 211-2-3. Three lectures and two laboratory periods. Laboratory fee $3.00. (Not offered 1951-52.)

223. *Field Botany.* (4) (Formerly Botany 211.) A study of plant life in nature in which the student acquires practice in the use of keys to determine the names of plants collected in the field. Prerequisites: Biology 211-2-3. Three lectures and two laboratory periods. Laboratory fee $3.00. (Not offered 1951-52.)

233. *Ecology.* (4) (Formerly Botany 211 and Zoology 411.) This course deals with the relations of plants and animals to the chemico-physical and biotic factors of their environment as observed in the field. The dynamics of

population control will be treated. Prerequisites: Biology 111-2-3 and Chemistry 111-2-3. Three lectures and two laboratory periods. Laboratory fee $3.00. (Not offered 1951-52.)

241. *General Bacteriology.* (4) (Formerly Bacteriology 241.) Consideration of identification, culture, sterilization and disinfectant procedures employed in studying certain microorganisms. Open to majors in Home Economics. Prerequisite: Biology 101 or 111 or Chemistry 111. Three lectures and two laboratory periods. Laboratory fee $3.00.

311. *Principles of Genetics.** (4) (Formerly Zoology 211.) An introduction to genetics, including the laws of heredity, the role of hereditary factors in developmental physiology and the relation between heredity and evolution. Prerequisites: Biology 101-2-3 or 111-2-3 or equivalent. Three lectures and two laboratory periods. Laboratory fee $3.00.

323. *Plant Pathology.* (4) (Formerly Botany 323.) Diseases of common field crops; theory and practice in control measures. Prerequisites: Biology 211-2-3. Three lectures and two laboratory periods. Laboratory fee $3.00. (Not offered 1951-52.)

332-3. *Comparative Anatomy.* (8) (Formerly Zoology 232-3.) The comparative anatomy and evolution of the organ systems of chordate animals. These courses must be taken in sequence. Prerequisites: Biology 101-2-3 or 111-2-3 or equivalent. Three lectures and two laboratory periods. Laboratory fee $3.00 each quarter.

302-3. *Human Physiology.* (8) (Formerly Zoology 342-3.) The fundamentals of the structure, function and organization of the organ-systems of man. For majors in Home Economics and Health and Physical Education. Prerequisites: Biology 101 or 111 and Chemistry 111. Three lectures and two laboratory periods. Laboratory fee $3.00 each quarter.

401. *Applied Bacteriology.** (4) (Formerly Bacteriology 301.) The study of bacterial techniques in food, sanitation, soil and pathogenic bacteriology. Prerequisites: Biology 241, Chemistry 321 and consent of instructor. Three lectures and two laboratory periods. Laboratory fee $3.00.

422. *Plant Physiology.* (4) (Formerly Botany 321.) The physiology and biochemistry of nutrition, water relations, photosynthesis and growth processes, with special reference to higher plants. Prerequisites: Biology 211-2-3 and Chemistry 311-2-3. Three lectures and two laboratory periods. Laboratory fee $3.00. (Not offered 1951-52.)

431. *Animal Embryology.* (4) (Formerly Zoology 331.) The principles of animal embryology based on invertebrate and vertebrate forms and a study of the origin and development of organ-systems with special reference to the bird and mammal. Prerequisites: Biology 332-3. Three lectures and two laboratory periods. Laboratory fee $3.00.

432. *Animal Histology.* (4) (Formerly Zoology 422 and 423.) The fundamentals of microscopic anatomy. Identification and preparation of tissues. Prerequisites: Biology 332-3 and consent of instructor. Three lectures and two laboratory periods. Laboratory fee $3.00.

433. *General Entomology.* (4) (Formerly Zoology 433.) A fundamental course in the biology of insects. Structure, classification, activities, life histories

*Approved for graduate credit.

and economic importance are discussed. Prerequisites: Biology 111-2-3 or consent of instructor. Three lectures and two laboratory periods. Laboratory fee $3.00. (Not offered 1951-52.)

442-3. *Principles of Physiology.* (8) (Formerly Zoology 342-3.) This course will deal with the basic concepts of physiology as illustrated by the vertebrates. Primarily for majors in Biology. Prerequisites: Biology 111-2-3, Chemistry 311-2-3 and consent of instructor. Three lectures and two laboratory periods. Laboratory fee $3.00 each quarter.

450. *Senior Project.* (0 or 3).

Graduate Program in Biology

Graduate Courses

511-2-3. *Research in Biology.* (9) This course series is provided for individual research under the supervision of an adviser. The student must present a general statement of proposed research and obtain approval of his major adviser and the head of the department. Laboratory fee $3.00 each quarter.

521-2-3. *General Physiology.* (12) The basic aim of this course is to study the nature and mechanism of living matter. Some comparative aspects are also included. Prerequisite: consent of instructor. Three lectures and two laboratory periods. Laboratory fee $3.00 each quarter.

531. *Experimental Embryology.* (4) An outline of the principles and mechanisms of development. Fundamentals of experimental and comparative embryology. Prerequisite: consent of instructor. Three lectures and two laboratory periods. Laboratory fee $3.00.

532. *General Cytology.* (4) Problems of protoplasmic differentiation and organization of the animal cell; modern methods of studying living and fixed tissues. Prerequisite: consent of the instructor. Three lectures and two laboratory periods. Laboratory fee $3.00.

533. *Plant Cytology.* (4) Chromosomal behavior under normal and experimental conditions with special reference to genetics and taxonomy. Prerequisite: consent of the instructor. Three lectures and two laboratory periods. Laboratory fee $3.00.

541-2-3. *Parasitology.* (12) Studies on the parasites of animals, with special reference to those of man, and domestic and game animals. The helminths, protozoa and their relatives, and the insects and certain other arthropods, are studied respectively in the Fall, Winter, and Spring Quarters. Prerequisite: consent of instructor. Three two-hour periods and additional study-period assignments. Laboratory fee $3.00 each quarter.

581-2-3. *Entomology.* (12) Advanced studies on the morphology, taxonomy and economic significance of insects. Prerequisite: consent of instructor. Three lectures and two laboratory periods. Laboratory fee $3.00 each quarter. (Not offered 1951-52.)

Biology Seminar. No credit. Required of all graduate students in Biology.

DEPARTMENT OF CHEMISTRY

Myron B. Towns, *Head*

The Curriculum of the Department of Chemistry is designed to prepare students for:

1. Positions in high schools as teachers of chemistry.
2. Entrance to schools of medicine, dentistry, nursing, or technology.
3. Positions in industry or government.
4. Entrance to graduate study leading to chemical research or college teaching.
5. Meeting course requirements in applied fields, such as agriculture and Home Economics.

Students who do not desire to teach, but to pursue graduate studies in chemistry, or to seek industrial or government employment should elect physics 311-2-3 in his junior year, mathematics above the 200 level, and biology above the 100 level.

Students who major in chemistry and desire to teach chemistry should elect the courses in education required for certification in the state or states of their choice.

Students who are taking an undergraduate major or minor in Chemistry must begin their work in the freshman year. Students who are taking Chemistry to fulfill a course requirement should begin their study either in the freshman or sophomore year.

Undergraduate Program

Bachelor of Science Degree With a Major in Chemistry

An undergraduate major consists of a minimum of 57 quarter hours of chemistry accumulated through pursuing the following courses:

Chemistry 111-2-3 (General)	12 Quarter Hours
Chemistry 211-2-3 (Analytical)	12 Quarter Hours
Chemistry 311-2-3 (Organic)	12 Quarter Hours
Chemistry 481-2-3 (Physical)	12 Quarter Hours
Chemistry 404 (Chemical Bibliography)	3 Quarter Hours
Chemistry 462-3 (Organic Qualitative Analysis), Chemistry 442-3 (Inorganic Chemistry), or Chemistry 422-3 (Analytical Chemistry)	6 Quarter Hours
	57 Quarter Hours

An undergraduate minor in Chemistry consists of a minimum of 36 quarter hours. The required courses are:

Chemistry 111-2-3 (General)	12 Quarter Hours
Chemistry 211-2-3 (Analytical)	12 Quarter Hours
Chemistry 361 (Recommended for majors in Health and Home Economics)	4 Quarter Hours
or	
Chemistry 311-2-3	12 Quarter Hours

Curriculum in Chemistry

Freshman Year

Name of Course	Quarter Hours Credit I	II	III
Chemistry 111-2-3	4	4	4
English 101-2-3	3	3	3
Mathematics 161-2-3	5	5	5
Physical Education 101-2-3 (Men)	⅓	⅓	⅓
Air Science I (Men)	1	1	1
Physical Education 101-2-3 (Women)	1⅓	1⅓	1⅓
Biology 101-2-3	4	4	4
	17⅓	17⅓	17⅓

Sophomore Year

Name of Course	Quarter Hours Credit I	II	III
Chemistry 211-2-3	4	4	4
German 101-2-3	3	3	3
Mathematics 261-2-3	3	3	3
American History 201-2-3	3	3	3
Physical Education 200's (Men)	⅓	⅓	⅓
Air Science II (Men)	1	1	1
Physical Education 200's (Women)	1⅓	1⅓	1⅓
World Literature 211-212-213	3	3	3
	17⅓	17⅓	17⅓

Junior Year

Name of Course	Quarter Hours Credit I	II	III
Chemistry 311-2-3	4	4	4
German 201-2-3	3	3	3
Physics 221-2-3	4	4	4
Psychology 221-2-3	3	3	3
Elective I	3	3	3
	17	17	17

Senior Year

Name of Course	Quarter Hours Credit I	II	III
Chemistry 481-2-3	4	4	4
Chemistry 404	3		
Chemistry 422-3, 442-3, or 462-3		3	3
Chemistry 401 (Senior Project)		3	
Elective I	3		3
Elective II	7	7	7
	17	17	17

Electives I: education, philosophy, biological sciences, mathematics, English, health, physics, social sciences, language, psychology, and art appreciation.

Electives II: education, mathematics, biological sciences, physics, geology, health, social science, and art appreciation.

Description of Courses

Chemistry

111-2-3. *General Chemistry.* (12) This course is a study of the elementary fundamental laws and theories of chemistry. The third quarter is devoted to a systematic study of the metals and non-metals from the periodic classification. Two lectures, one recitation, and two two-hour laboratory periods per week. Required of majors in chemistry, biology, engineering, pre-medical, pre-dental, home economics, agriculture, health and nursing students. Laboratory Fee: $4.00.

211-2-3. *Elementary Analytical Chemistry.* (12) Chemistry 111-2-3 and Mathematics 161-2-3 are prerequisites: This course includes the theories and laboratory practice in both qualitative and quantitative analysis. The qualitative analysis of the course deals with the analysis for the several groups of cations and anions. The quantitative analysis includes both volumetric and gravimetric analysis, together with related stoichiometric problems. Two lectures and two three-hour laboratory periods per week. Laboratory fee: $4.00.

311-2-3. *Organic Chemistry.* (12) Chemistry 111-2-3 are prerequisites. A systematic study of the source, physical properties, and chemical behavior of

aliphatic, aromatic, and heterocyclic compounds of carbon. Three lectures and two three-hour laboratory periods. Laboratory fee: $4.00.

361. (321)* *Elementary Organic Chemistry.* (4) Chemistry 101-2-3 are prerequisites. Important classes of organic compounds are presented. Emphasis is placed upon the study of hydrocarbons and their principal derivatives, carbohydrates, proteins, fats and oils, vitamins, and dyes. Three lectures and two two-hour laboratory periods. Designed for majors in agriculture, home economics, and health. Laboratory fee: $4.00.

401. (450) *Senior Project.* (3) Experimentation and writing. This course is required of prospective graduating seniors. Students should enroll in this course at least two quarters prior to expected date of graduation. Other regulations pertaining to this subject found elsewhere in this catalog, should be observed. Minimum of eight hours per week. Laboratory fee: $4.00.

404. (451) *Chemical Bibliography.* (3) Chemistry 211-2-3 and 311-2-3 are prerequisites. A study of how to use the chemical journals, reference books, and other sources of chemical information. A systematic search in the chemical literature for information on several compounds and topics will be included. Two conferences a week.

422-3. (472-3) *Analytical Chemistry.* (6) Instrumental methods of analysis. Open to senior chemistry majors and graduate students. This course aims to train students in the theory and practice of (1) instrumental methods as applied to quantitative analysis, and (2) calibration of analytical apparatus. The several methods of analysis by use of pH meters, refractometers, colorimeters, spectrophotometers, polarimeters, and Geiger Counters will be performed. Two lectures and two three-hour laboratory periods each week. Seniors desiring senior project experimentation in analytical chemistry are advised to enroll in this course. Laboratory fee: $4.00.

442-3. (462-3) *Inorganic Chemistry.* (6) Prerequisites: Chemistry 111-2-3 and 211-2-3. A survey of the chemical elements according to the periodic classification. Theoretical study of chemical reactions; inorganic stereochemistry; molecular structure. Laboratory includes preparation and characterization of representative inorganic compounds and reactions in non-aqueous solutions; experimental study of ionic equilibria. Three lectures, two two-hour laboratory periods each week. Laboratory fee: $4.00.

462-3. (452-3) *Organic Qualitative Analysis.* (6) Chemistry 211-2-3, 311-2-3, and 404 are prerequisites. A systematic study of the solubility and class reactions of the principal classes or organic compounds. It includes also identification of pure organic compounds and mixtures. One lecture and two three-hour laboratory periods. Laboratory fee: $4.00.

481-2-3. (411-2-3) *Physical Chemistry.* (12) Prerequisites: Chemistry 111-2-3 and 211-2-3, Mathematics 261-2-3, and Physics 221-2-3. Physics 221-2-3, and Chemistry 411-2-3 may be taken concurrently. This course is devoted to a study of the fundamental theories and laws governing both physical and chemical changes and covers the properties of gases, liquids, solids, thermodynamics, solutions, chemical equilibria, reaction rates, and electrochemistry. Three lectures and two three-hour laboratory periods. Laboratory fee $4.00.

Graduate Courses

504-5. (580-1) *Glassblowing.* (3) Theory and practice in glass blowing. Laboratory fee: $4.00.

*Course numbers in parenthesis denote former catalog listing.

507-8. (590-1) *Machine Shop.* (6) Theory and practice in construction of specialized research apparatus. Laboratory fee: $4.00.

521-2-3. (511-2) *Advanced Analytical Chemistry.* (6) A theoretical discussion of and laboratory experiments on selected topics in qualitative and quantitative analysis, including sampling, indicators, potentiometric and conductometric titrations. Laboratory fee: $4.00.

541-2-3. (540-1-2) *Advanced Inorganic Chemistry.* (9) The chemical elements and their compounds are discussed as they appear on the several periodic arrangements. Special attention is given to the relationships between atomic structure and properties.

544-5. (543) *Inorganic Preparations.* (3) Advanced experimentation leading to preparation of several selected inorganic compounds is included. Laboratory fee: $4.00.

561-2-3. (520-1-2) *Advanced Organic Chemistry.* (9) A survey of the more important classes of organic compounds and their reactions; a discussion of selected topics, including tautomerism, electronic interpretation of organic reactions, mechanisms, molecular rearrangements, and stereo-chemistry.

571-2. (570-1) *Quantitative Organic Micro Analysis.* (4) A discussion of and laboratory in micro techniques involved in use of micro balance, carbon and hydrogen combustion analysis, molecular weight determinations, methoxy group analysis, Dumas and Kjeldahl nitrogen determination, and sulfur and halogen analyses. Laboratory fee: $4.00.

581-2-3. (530-1) *Advanced Physical Chemistry.* (9) A discussion of the thermodynamics and electrochemistry of dilute solutions, surface chemistry and colloids, and kinetics.

584-5-6. (533-4) *Advanced Physical Chemistry Laboratory.* (6) Experiments on selected topics. Laboratory fee: $4.00.

537-8-9; 557-8-9; 577-8-9; 597-8-9. (550-1-2) *Chemical Research.* Credit, conditioned by quality and quantity of research performed. This course is designed to provide chemical research required of candidates for the master of science degree. Laboratory fee: $4.00.

Chemistry Seminar. No credit. Required of all candidates for advanced degree. Seminar meets twice each month.

DEPARTMENT OF MATHEMATICS

THEODORE A. LOVE, *Head*

The purposes of the Department of Mathematics are (1) to provide programs of study for those who desire to pursue an undergraduate or graduate major or minor in mathematics, and (2) to provide courses designed to satisfy the Mathematics requirements of the other departments of the several Schools of the University.

The Department offers curricula leading toward two undergraduate degrees, namely: Bachelor of Arts and Bachelor of Science; and two graduate degrees, namely: Master of Arts and Master of Science.

Students who desire either of the two undergraduate degrees with a major in Mathematics must complete a minimum of forty-five quarter hours of prescribed courses in Mathematics with an average of 2.5 or above. An undergraduate minor in Mathematics consists of a minimum of twenty-seven quarter hours.

Students who desire either of the two graduate degrees with a major in Mathematics must complete a minimum of twenty-seven quarter hours of Mathematics and a minimum of eighteen quarter hours in a minor field. All courses presented for credit toward either of the two graduate degrees must be courses designated as graduate-credit courses by the respective Departments. A student offering Mathematics as a minor for the Master's degree is required to obtain a minimum of eighteen quarter hours of resident graduate credit in Mathematics.

THE MATHEMATICS CLUB

The purposes of the Mathematics Club are:

(1) to motivate in its members the use of logical reasoning, accurate thinking and careful observation;

(2) to create in them a sense of responsibility for achievement in scholarship;

(3) to encourage them to participate in various phases of a wholesome college life; and

(4) to provide opportunity for supplementary training in formal mathematics.

Membership in this organization is open to all majors and minors in Mathematics. Majors and minors in any area of science may become associate members.

Awards Offered by the Mathematics Department

The Mathematics Club awards annually a *key* to the junior or senior major or minor in the department who scores highest on a competitive standardized mathematics examination administered by the department in the Spring of each year. In presenting this annual award, the Mathematics Club seeks to stimulate interest in and to make official recognition of outstanding academic achievement in the field of mathematics. The presentation is made on Awards Day.

The Mathematics Club awards annually a "Certificate of Merit" to the freshman or sophomore major or minor in the department who scores highest on a standardized mathematics test administered by the department in the Spring of each year. In making this annual award, the Mathematics Club seeks to encourage high scholarship in mathematics. The presentation is made on Awards Day.

CURRICULUM FOR BACHELOR OF ARTS DEGREE

WITH A MAJOR IN MATHEMATICS

Freshman Year	*Quarter Hours Credit*		
Name and No. of Course	I	II	III
English 101-2-3	3	3	3
Mathematics 161-2-3	5	5	5
Biology 101-2-3 or Chemistry 111-2-3	4	4	4
History 121-2-3	3	3	3
Education 101-2-3	1	1	1
Phys. Ed. 101-2-3			
(For Women)	1⅓	1⅓	1⅓
(For Men)	⅓	⅓	⅓
Air Science I (Men)	1	1	1
	17⅓	17⅓	17⅓

Sophomore Year	*Quarter Hours Credit*		
Name and No. of Course	I	II	III
English 211-2-3	3	3	3
Mathematics 261-2-3	5	5	5
Physics 221-2-3	4	4	4
French 101-2-3 or German 101-2-3	3	3	3
Required Phys. Ed.			
200's (For Women)	1⅓	1⅓	1⅓
(For Men)	⅓	⅓	⅓
Air Science II (Men)	1	1	1
	16⅓	16⅓	16⅓

Junior Year	Quarter Hours Credit		
Name and No. of Course	I	II	III
Mathematics 371-2-3	3	3	3
Mathematics 462-3		3	3
Mathematics 321	3		
Psychology 263			3
Psychology 243		3	
Education 341-2	3	3	
French 201-2-3 or German 201-2-3	3	3	3
History 201-2	3	3	
Psychology 211	3		
Education 385			3
Biology 311, Physics 413 or Chemistry 211			3
	18	18	18

Senior Year	Quarter Hours Credit		
Name and No. of Course	I	II	III
Mathematics 331-2	3	3	
Mathematics 450	3		
Education 471-2	6		
Mathematics 422-3		3	3
Political Science 221-2		3	3
Economics 211-2	3	3	
Mathematics 322			3
History 491		3	
Geography 171-2		3	3
Electives			3
	15	18	15

Curriculum for Bachelor of Science Degree With a Major in Mathematics[1]

Freshman Year	Quarter Hours Credit		
Name and No. of Course	I	II	III
English 101-2-3	3	3	3
Mathematics 161-2-3	5	5	5
Biology 101-2-3 or Chemistry 111-2-3	4	4	4
History 121-2-3	3	3	3
Education 101-2-3	1	1	1
Phys. Ed. 101-2-3 (For Women)	1⅓	1⅓	1⅓
(For Men)	⅓	⅓	⅓
Air Science I (Men)	1	1	1
	17⅓	17⅓	17⅓

Sophomore Year	Quarter Hours Credit		
Name and No. of Course	I	II	III
English 211-2-3	3	3	3
Mathematics 261-2-3	5	5	5
Physics 221-2-3	4	4	4
Mathematics 101			3
History 201-2		3	3
Psychology 211	3		
Required Phys. Ed. (For Women)	1⅓	1⅓	1⅓
(For Men)	⅓	⅓	⅓
Air Science II (Men)	1	1	1
	16⅓	16⅓	16⅓

Junior Year	Quarter Hours Credit		
Name and No. of Course	I	II	III
Mathematics 371-2-3	3	3	3
Mathematics 462-3		3	3
Mathematics 321	3		
Mathematics 322			3
Psychology 243	3		
Education 341-2	3	3	
Education 231	3		
Psychology 253		3	
Biology 233, Physics 413 or Chemistry 211	3		
Geography 171-2		3	3
Economics 211-2		3	3
Education 385			3
	18	18	18

Senior Year	Quarter Hours Credit		
Name and No. of Course	I	II	III
Mathematics 331-2	3	3	
Mathematics 450	3		
Education 471-2	6		
Mathematics 422		3	
Political Science 221-2	3	3	
Electives		9	18[2]
	15	18	18

[1]This curriculum qualifies a major for a permanent professional high school certificate and a permanent professional elementary certificate in Tennessee. Only majors who maintain a high scholastic average are advised to attempt to qualify for both certificates in the time shown above.

[2]Majors are to pursue six courses leading to certification in elementary schools.

Courses in Mathematics

Undergraduate

100. *Fundamentals of Arithmetic and Algebra.* A non-credit course designed especially for students who desire to pursue courses offered by the Department but whose score on the Placement Test indicates probable failure in the regular courses. Students wishing to enroll in Mathematics 161 must first pass the Placement Test given during Freshman Week or pass this course. Five lectures per week.

101. *Arithmetic.* (3) Designed primarily for prospective teachers in the elementary schools. Study of number and its symbols, fundamental operations with whole numbers, fractions, decimals, denominate numbers, percentage, with problem solving. Will not be counted toward a major or minor in mathematics. Three lectures per week.

102. *Arithmetic.* (3) A continuation of Mathematics 101 with numerous everyday applications of the topics discussed. Prerequisite: Mathematics 101. Will not be counted toward a major or minor in mathematics. Three lectures per week.

131. *Algebra.* (3) The course pre-supposes a minimum of one unit of high school algebra. Review of elementary operations, factoring, fractions, linear equations, graphs, ratio, proportion, variation, exponents, and radicals. Three lectures per week.

132. *Algebra.* (3) A continuation of 131. Quadratic equations, graphs, binomial theorem, progressions, permutations and combinations. Prerequisite: Mathematics 131. Three lectures per week.

133. *Plane Trigonometry.* (3) Functions of angles, identities, equations, logarithms, solution of right and oblique triangles with application, graphs of functions. Prerequisite: Mathematics 132. Three lectures per week.

141. *Agricultural Mathematics I.* (3) For students of Agriculture. Review of the fundamental processes with whole numbers, common fractions and decimal fractions. Percentage, interest, practical applications. Three lectures per week.

142. *Agricultural Mathematics II.* (3) For students of agriculture. Elementary operations, linear equations, formulae, lengths, areas, volumes, ratio-proportion, practical applications. Prerequisite: Mathematics 141. Three lectures per week.

143. *Agricultural Mathematics III.* (3) For students of Agriculture. Functions of the acute angle, averages, graphs, practical applications. Prerequisite: Mathematics 142. Three lectures per week.

161. *Algebra.* (5) Discussion of topics in simple and quadratic equations, binomial theorem, progressions, theory of equations, partial fractions. Prerequisite: Passing of the Placement Test or of Mathematics 100. Five lectures per week.

162. *Trigonometry.* (5) Functions of the general angle, identities, equations, logarithms, the general triangle, and functions of two angles. Prerequisite: Mathematics 161. Five lectures per week.

163. *Analytic Geometry.* (5) Properties of the straight line, the circle, the conic sections in the plane, transformation of coordinates, polar equations of the conics, higher plane curves. Prerequisite: Mathematics 162. Five lectures per week.

231. *Analytic Geometry.* (3) An elementary course including rectangular coordinate system, properties of the straight line, special equations of the second degree. Prerequisite: Mathematics 133 or 162. Three lectures per week.

232. *Analytic Geometry.* (3) A continuation of Mathematics 231. General equation of the second degree, transformation of coordinates, polar equations of the conics, higher plane curves. Prerequisite: Mathematics 231. Three lectures per week.

251-2-3. *Calculus.* (9) Differential and integral calculus. Derivative of algebraic, trigonometric, exponential and logarithmic functions with application to problems rising in engineering and the physical sciences; the indefinite and definite integral with applications. Prerequisite: Mathematics 163 or 232. Three lectures per week.

261-2-3. *Calculus.* (15) Differential and integral calculus. Derivative of algebraic, trigonometric, exponential, and logarithmic functions with application to problems rising in engineering and the physical sciences; the indefinite and definite integral with applications; infinite series, approximate computation. Prerequisite: Mathematics 163 or 232. Five lectures per week.

311. *Fundamentals of Statistics.* (3) A basic course in general statistics, including tabulation of data, charts, a study of frequency distributions, measures of central tendency and dispersion, graphs, normal curve, linear correlation. It is advisable that a student take algebra before enrolling in this course. Three lectures per week.

321. *The Teaching of Mathematics in the Secondary Schools.* (3) Lectures, discussions and reports on problems connected with the content and methods of mathematical instruction in the junior and senior high schools. Emphasis is on effective techniques of developing basic concepts in mathematics. Prerequisite: Calculus and/or approval of the Department. Three lectures per week.

322. *History of Mathematics.* (3) For prospective teachers of mathematics. Great names in the development of mathematics, tracing the development of each of the subject matter fields. Three lectures per week.

331-2. *College Geometry.* (6) A study of the concepts of Euclidean geometry with special emphasis on the nature of proof and of the nature of a logical or mathematical system. Three lectures per week.

361-2. *Calculus.* (6) The indefinite and definite integral with applications; infinite series, approximate computation. Prerequisite: Mathematics 253. Three lectures per week.

371. *Advanced Algebra.* (3) A continuation of College Algebra. Aimed at broadening the concepts of algebra for students intending to study higher mathematics or to teach mathematics on the secondary level. Prerequisite: Mathematics 161. Three lectures per week.

*372-3. *Theory of Equations.* (6) Properties of polynomials, transformation of equations, elementary theorems on the roots of an equation, solution of equations by graphs, trigonometric solution of the cubic equation, Descartes' rules, Sturm's theorem, solutions of numerical equations, determinants, symmetric functions of the roots, ruler and compass constructions. Prerequisites: Mathematics 371 and Calculus, or the approval of the Department. Three lectures per week.

*421. *Advanced Calculus.* (3) Partial differentiations, multiple integrals;

*Approved for graduate credit.

line, surface and volume integrals; infinite series. Prerequisite: Mathematics 263 or 362. Three lectures per week.

422-3. *Analytic Geometry of Space.* (6) Planes and lines in space: polar, spherical, and cylindrical coordinates; forms, classification, and properties of quadric surfaces; quadric surfaces in tetrahedral coordinates; transformation of space. Prerequisite: consent of the Department. Three lectures per week.

450. *Senior Project Writing.* (3) Individual student research, study, compilation, and presentation of special mathematical topics and related problems selected by the student and approved by the Department. Required of all prospective graduating seniors in the Department. Prerequisite: senior standing. Conference hours arranged.

*451-2-3. *Introduction to Analysis.* (9) Basic properties of the real number system; theory of limits, continuous functions, uniform continuity, and convergence; integration, differentiation, functions of several real variables, implicit function theory. Prerequisite: Mathematics 263. Three lectures per week.

*462-463. *Differential Equations.* (6) Classification and solution of common types of elementary differential equations; application of ordinary differential equations to problems arising in engineering and the physical sciences; introduction to partial differential equations. Prerequisite: Mathematics 263 or 362. Three lectures per week.

*471. *Elementary Theory of Numbers.* (3) Number systems, divisibility, congruences, theorems of Fermat and Wilson, primitive roots, indices, quadratic reciprocity. Prerequisite: consent of the Department. Three lectures per week.

Graduate Courses

501-2-3. *Master's Thesis.* (9) Three hours each quarter.

511-2-3. *Functions of a Complex Variable.* (9) The Algebra of complex numbers and their geometric representation, conformal mapping, power series, properties of analytic series. Couchy's theorem; Taylor's series; Riemann surfaces. Prerequisite: Mathematics 451-2-3 or 421. Three lectures per week.

521. *The Teaching of Algebra.* (3) The course is designed for teachers of algebra. It will include lectures, discussions and reports on the following topics: the objectives of algebraic instruction, fundamental concepts in algebra, methods of presenting the subject, multi-sensory aids, relationship between algebra and other fields of knowledge, and topics in advanced algebra useful to teachers. Prerequisite: Consent of the Department. Three lectures per week.

522. *The Teaching of Geometry.* (3) The course is designed for teachers of geometry. It will include lectures, discussions and reports on the following topics: the objectives of instruction in geometry, the nature and types of geometric reasoning and its relations to reasoning in other fields, current trends in geometric instruction, the use of multi-sensory aids, and methods of improving the teaching of geometry. Prerequisite: consent of the Department. Three lectures per week.

551-2-3. *Introduction to Advanced Geometry.* (9) An elementary and essentially synthetic treatment of the fundamentals of projective geometry covering projectivity and perspectivity, homogeneous coordinates, cross ratios, and collineations. Prerequisite: Consent of the Department. Three lectures per week.

541-2-3. *Mathematical Statistics.* (9) The mathematical foundations of elementary statistical methods and their applications. Discrete and continuous distributions; probability; correlation, regression and statistical independence;

*Course approved for graduate credit.

foundations of sampling theory; significance tests. Prerequisite: consent of the Department. Three lectures per week.

551-2-3. *Introduction to Higher Algebra.* (9) A study of the fundamental concepts of modern algebra, symmetric functions, matrices, linear dependence, invariants, groups, rings, integral domains, fields. Prerequisite: Mathematics 371. Three lectures per week.

561. *Vector Analysis.* (3) The algebra and calculus of vectors; the integral theorems of Gauss, Green and Stokes; partial differential operators. Applications. Prerequisite: Mathematics 462-3. Three lectures per week.

DEPARTMENT OF PHYSICS

JAMES R. LAWSON, *Head*

The department of physics offers courses of study at the undergraduate and graduate level leading to the degrees of bachelor and master of science in Physics. In addition, a four-year curriculum in engineering physics has been established in collaboration with the School of Engineering.

The courses in physics have been designed to serve the needs of the following types of students: (1) those who wish to pursue the study of physics as a major; (2) those who require physics as a part of their pre-professional training; (3) those students majoring in the sciences or mathematics to whom the knowledge and techniques of physics are desirable adjuncts.

The major in physics consists of Physics 221-2-3, 311-2-3, 331-2-3, 412-3-4, and 450 and additional courses to make a total of 45 quarter hours. A minor in physics consists of Physics 211-2-3 or Physics 221-2-3 and additional credits to make a total of 27 quarter hours.

The curriculum in engineering physics is designed to prepare students to undertake investigative work in problems of engineering that require a thorough training in the fundamentals of physics, engineering, chemistry, and mathematics. Graduates of this curriculum will qualify for employment of a research or development character in industrial laboratories, institutions devoted to pure research, and in the various government laboratories.

CURRICULUM FOR A MAJOR IN PHYSICS

Freshman Year

Name of Course	*Quarter Hours Credit* I	II	III
English 101-2-3	3	3	3
Mathematics 161-2-3	5	5	5
Physical Ed. 101-2-3 (Men)	⅓	⅓	⅓
(Women)	1⅓	1⅓	1⅓
Chemistry 111-2-3	4	4	4
French 101-2-3	3	3	3
Air Science I (Men)	3	3	3
	16⅓	16⅓	16⅓

Junior Year

Name of Course	*Quarter Hours Credit* I	II	III
Physics 311-2-3	3	3	3
Physics 321-2-3	3	3	3
Physics 331-2-3	3	3	3
Mathematics 462-3	3	3	
Mathematics 421			3
Electives	6	6	6
	17	17	17

Sophomore Year

Name of Course	*Quarter Hours Credit* I	II	III
Physics 221-2-3	4	4	4
Mathematics 261-2-3	5	5	5
German 101-2-3	3	3	3
Physical Ed. 200's (Men)	⅓	⅓	⅓
(Women)	1⅓	1⅓	1⅓
English 201-2-3	3	3	3
Economics 211-2-3	3	3	3
Air Science II (Men)	1	1	1
	19⅓	19⅓	19⅓

Senior Year

Name of Course	*Quarter Hours Credit* I	II	III
Physics 412-3	3	3	
Physics 414			3
Physics 450	1	1	1
Electives	12	12	12
	16	16	16

CURRICULUM FOR MAJOR IN ENGINEERING PHYSICS

Freshman Year

Name of Course	*Quarter Hours Credit* I	II	III
Mathematics 161-2-3	5	5	5
English 101-2-3	3	3	3
Chemistry 111-2-3	4	4	4
Engineering Drawing 101-2-3	3	3	3
Technical Shop 101-2-3	3	3	3
B.C. Engr. 101-2-3	1	1	1
Physical Education 101-2-3 (Men)	⅓	⅓	⅓
Air Science II (Men)	1	1	1
	20⅓	20⅓	20⅓

Sophomore Year

Name of Course	*Quarter Hours Credit* I	II	III
Physics 221-2-3	4	4	4
Mathematics 261-2-3	3	3	3
Chemistry 311-2-3	4	4	4
Economics 211, 302	3	3	
Mechanics 203			3
English 201-2-3	3	3	3
Advanced Machine Shop	3	3	3
Physical Ed. 200's (Men)	⅓	⅓	⅓
Air Science II	1	1	1
	20⅓	20⅓	20⅓

Junior Year

Name of Course	*Quarter Hours Credit* I	II	III
Physics 311-2-3	3	3	3
Physics 331-2-3	2	2	2
Chemistry 411-2-3	4	4	4
English 321-2	3	3	
Physics 321-2-3	3	3	3
Mathematics 462-3	3	3	
Mathematics 421			3
Elective			3
	18	18	18

Senior Year

Name of Course	*Quarter Hours Credit* I	II	III
Physics 412-3-4	3	3	3
Physics 450			3
E. E. 301-2-3	3	3	3
Engr. 342-3	3	3	
C. E. 311			3
E. E. 361-2-3	3	3	3
Electives	6	6	3
	18	18	18

COURSES IN PHYSICS

Undergraduate

201-203. *Fundamentals of Physics.* (6) A course in general physics designed to meet the needs of students majoring in agriculture and home economics. Two lectures and one laboratory period. Laboratory fee $3.00 per quarter.

211-2-3. *College Physics.* (12) 211, Mechanics; 212, Electricity and Magnetism; 213, Heat, Sound, and Light. A course in which the basic principles are presented. Emphasis is placed upon biological applications. Required in biological and pre-medical curricula. Prerequisite: Mathematics 161-2-3. Three lectures and one laboratory period per week. Laboratory fee $3.00 per quarter.

221-2-3. *General Physics.* (12) 221, Mechanics; 222, Electricity and Magnetism; 223, Heat, Sound, and Light. This course is intended for engineers and students majoring in the physical sciences. Prerequisite: Mathematics 161-2-3. Three lectures and one laboratory period per week. Laboratory fee $3.00 per quarter.

Advanced Undergraduate Courses

311-2-3. *Electricity and Magnetism.* (9) This course presents the fundamentals of theoretical electricity and magnetism. Considerable emphasis is placed upon the solution of problems. Prerequisites: Calculus, Physics 222 or Physics 212. Three lectures per week.

314. *Optics.* (4) A brief review of geometrical optics and a study of physical optics including spectroscopy. Prerequisite: 311-2-3. Three lectures and one laboratory period per week. Laboratory fee $3.00.

321-2-3. *Mechanics.* (9) Statics and dynamics of particles and rigid bodies. Lagrange's and Hamilton's equations; fluid statics, and vibrations. Prerequisites: Physics 221-2-3; Mathematics 261-2-3. Three lectures per week.

324. *Heat and Thermodynamics.** (3) This course presents the fundamentals of heat and provides an introduction to thermodynamics with applications to chemistry. Prerequisites: Physics 221-2-3; Mathematics 261-2-3. Three lectures per week.

331-2-3. *Electrical Measurements.** (6) In this course the theory of electrical circuits is studied and discussed. The laboratory work is intended to give experience and facility in the handling of electrical measuring instruments. A comprehensive list of experiments is required, covering modern methods of measuring current, resistance, electromotive force and power, and the calibration of instruments employed, together with measurements of capacity, inductance, and ferro-magnetism. Prerequisites: Physics 221-2-3 or Physics 211-2-3; Mathematics 261-2-3. Two laboratory periods per week. Laboratory fee $3.00.

412-3. *Atomic and Molecular Structure.** (6) The classical and modern concepts of the atom and radiation are developed; introduction to molecular structure and the chemical bond. Prerequisite: Physics 221-2-3 or Physics 211-2-3; Mathematics 261-2-3. Three lectures.

414. *Radioactivity and Nuclear Physics.** (3) An extensive survey of the phenomena and methods of nuclear physics; fission; isotopic tracers; medical radiology; cosmic rays. Prerequisites: Physics 221-2-3 or Physics 211-2-3; Mathematics 261-2-3. Three lectures.

450. *Senior Thesis.* (3).

Graduate Courses

501-2-3. *Introduction to Theoretical Physics.* (15) A broad survey of the entire field of theoretical physics including application of methods of mathematical physics to special problems; Fourier series; potential theory; vector analysis; Laplace transforms; linear algebraic equations; spherical harmonics; Bessel functions. Prerequisites: Physics 311-2-3, 321-2-3, Mathematics 421, 462-3. Five lectures.

521-2-3. *Advanced Laboratory.* (9) Required of all graduate students. The purpose of this course is to prepare the student to undertake independent investigations. Experiments are chosen from spectroscopy, electronics, modern experimental physics, optics, X-rays, and radioactivity. Prerequisites: Physics 311-2-3, Physics 412-3-4. Three laboratory periods per week. Laboratory fee $3.00 per quarter.

511. *Methods of Rereach.* (3)

512. *Research for Master's Thesis.* (3) Laboratory fee $6.00.

531-2-3. *Improved Spectroscopy and Molecular Structure.* (9) Laboratory fee $6.00 per quarter.

571-2-3. *Physics Seminar.* (3) Weekly meetings to review current literature in physics. Reports on selected topics.

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*Approved for graduate credit.

DEPARTMENT OF SCIENCE EDUCATION

WILLIAM F. GOINS, JR., *Head*

The department's program is designed to meet the needs of three groups of students:

1. Those who wish to qualify for secondary school science teaching with certification in several science fields;
2. Those who desire a four-year general curriculum built around a core of natural sciences, which might be used to fulfill the entrance requirements of schools which prepare technicians for the several areas of medicine, health, and allied professions, and the scientific branches of government service;
3. Those from other curricula of the university who wish to take service courses in the area of science education.

To serve these needs, the department offers two undergraduate curricula leading to the following degrees: Bachelor of Science with a major in Science Education, and Bachelor of Arts with a major in Natural Science. The curriculum leading to the Bachelor of Science degree is designed for prospective teachers of science while that leading to the Bachelor of Arts degree is planned for those persons who do not intend to teach. A graduate program culminating in the Master of Science degree in Science Education is offered for science teachers.

The basic science courses required for Science Education majors in the Bachelor of Science curriculum include: Chemistry 111-2-3, Chemistry 211-2, 321; Mathematics 161-2-3; Physics 211-2-3; Biology 101-2-3, Biology 442-3, and four other hours of advanced biology. Preparation for teaching general science is bolstered by the additional requirement of Geography 181-2, 261.

Students who complete the Bachelor of Science program with a minimum of seventy-five hours in science and mathematics, as outlined, will meet certification requirements for teaching general science, biology, and chemistry in secondary schools. The election of an additional nine hours in physics and an additional three hours in mathematics will permit certification in these subjects also.

A student who enrolls in the Bachelor of Arts program is expected to complete eighty-seven quarter hours in science and mathematics, or the equivalent of a double major in science. Required courses in this sequence are: Biology 101-2-3, Biology 241, 442-3; Chemistry 111-2-3, Chemistry 211-2-3, Chemistry 311-2-3; Mathematics 161-2-3; and Physics 211-2-3. In addition to this science core, the program includes eighteen hours each of English and Foreign Language and thirty-six hours of social science: namely, psychology, history, economics, and sociology. Upon completion of this curriculum, the student will be qualified: (1) for employment as a junior technician in industrial and government laboratories, (2) for entrance into the professional training programs of medical and allied professions, or (3) for entrance into graduate study if the proper selection of electives to give sufficient concentration in one science has been made.

The Freshman year is identical in both curricula. Each student in the department is expected to execute a written statement of his curriculum choice by the end of the freshman year. A minimum grade of *C* in each required

course of the major sequence is necessary for maintenance of good standing in the selected curriculum.

Curriculum for Bachelor of Science in Science Education

Freshman Year

	I	II	III
Biology 101-2-3	4	4	4
Mathematics 161-2-3	5	5	5
Chemistry 111-2-3	4	4	4
English 101-2-3	3	3	3
Air Science I (Men)	1	1	1
Phys. Ed. 101-2-3			
(Men)	⅓	⅓	⅓
(Women)	1⅓	1⅓	1⅓
	17⅓	17⅓	17⅓

Sophomore Year

	I	II	III
Physics 211-2-3	4	4	4
Chemistry 211-2, 321	4	4	4
English 211-2-3	3	3	3
History 201-2-3	3	3	3
Psychology 221, 243, 263	3	3	3
Air Science II (Men)	1	1	1
Phys. Ed. 200's			
(Men)	⅓	⅓	⅓
(Women)	1⅓	1⅓	1⅓
	18⅓	18⅓	18⅓

Junior Year

	I	II	III
Biology elective	4		
Biology 442-3		4	4
Sociology 211-2-3	3	3	3
Education 341-2, 385	3	3	3
Geography 181-2, 261	3	3	3
General electives	3	3	3
	16	16	16

Senior Year

	I	II	III
Science Education 421	3		
Science Education 425		3	
Science Education 427			3
Education 471-2			6
Science Education 450	3		
Electives	9	12	6
	15	15	15

TOTAL.....200 quarter hours

Suggested electives: Additional courses in physics, chemistry, biology, mathematics, English, social science, or foreign language.

Curriculum for Bachelor of Arts in Natural Science

Freshman Year

	I	II	III
Biology 101-2-3	4	4	4
Mathematics 161-2-3	5	5	5
Chemistry 111-2-3	4	4	4
English 101-2-3	3	3	3
Air Science I (Men)	1	1	1
Phys. Ed. 101-2-3			
(Men)	⅓	⅓	⅓
(Women)	1⅓	1⅓	1⅓
	17⅓	17⅓	17⅓

Sophomore Year

	I	II	III
Physics 211-2-3	4	4	4
Chemistry 211-2-3	4	4	4
English 211-2-3	3	3	3
Psychology 221-2-3	3	3	3
For. Language 101-2-3*	3	3	3
Air Science II (Men)	1	1	1
Phys. Ed. 200's			
(Men)	⅓	⅓	⅓
(Women)	1⅓	1⅓	1⅓
	18⅓	18⅓	18⅓

Junior Year

	I	II	III
Chemistry 311-2-3	4	4	4
Foreign Language 201-2-3	3	3	3
Biology 241, 442-3	4	4	4
Sociology 211-2-3	3	3	3
History 201-2-3	3	3	3
	17	17	17

Senior Year

	I	II	III
Science electives	4	4	4
Economics 211-2-3	3	3	3
Science Education 450	3		
Science Education 427			3
General electives	6	9	6
	16	16	16

TOTAL.....206 quarter hours

*A student who has had two units of the foreign language in high school will take Language 201-2-3.

Courses in Science Education

Undergraduate

111-2-3. *Introduction to Physical Science.* (9) The earth and man's relationship to the universe, the physical make-up of the earth, and the utilization of matter and energy are among the topics which will be intensively studied in the course. Experience in the field and laboratory requiring the use of quantitative data and their manipulation are provided. Recommended for majors in Business or other areas where science is desired for general education purposes. Two lecture-discussion periods and one two-hour laboratory period each week. Laboratory fee $2.00.

301-2-3. *Science for Elementary Teachers.* (9) A three-quarter course which combines a survey of the science subject matter suitable for elementary schools with the methods of teaching this science. Prerequisites: Psychology 253 and Geography 171-2-3. Three class periods each week. (Formerly Science 101-2-3.)

421. *Teaching of the Sciences in Secondary Schools.* (3) A course for science majors who plan to teach in secondary schools. Materials and methods suitable for use in junior and senior high schools are stressed. Prerequisites: Psychology 243, Education 341, 385, and completion of at least 75% of the major work in science. Three class periods each week.

425. *Laboratory Practicum for Science Teachers.** (3) A laboratory course especially designed for science teachers. Students will have experience in developing techniques to be used in caring for apparatus, tools, and materials, as well as for assembling and constructing demonstration and laboratory devices for science courses. Prerequisites: Sci. Ed. 421 and a major or minor in a natural science. Six laboratory hours each week. Laboratory fee $2.00.

427. *Philosophy of Science.** (3) Discussions and problems of the course will consider the evidence and logic upon which contemporary scientific concepts rest, and the interplay of ideas, stresses, and new vistas that have caused continuous changes. The course assumes that the student possesses a broad background in the fundamental science subjects. Recommended for senior science majors and graduate students in the sciences. The course may be taken for elective credit in science or secondary education. Three class periods each week. (Formerly Sci. Educ. 422.)

450. *Senior Project in Science Education.* (3) Individual student research and presentation of a special topic or problem selected by the student with the approval of the department. Required of all candidates for the Bachelor's degree. Prerequisite: Completion of 75 per cent of the major work in science and senior standing in the department.

Graduate Courses

500. *Seminar: Current Problems in Science Teaching.* (No credit) Required of all graduate students in the department. Meets twice monthly throughout the year.

501. *Problems in the Teaching and Supervision of Science in Secondary Schools.* (3) The place of science in the school will be considered. Objectives, curricula, recent trends, concept formation, and sequences will be inves-

*Course approved for graduate credit.

tigated for clues as to desirable organization and supervision of a curriculum in science. Prerequisite: Teaching or supervising experience. Three class periods each week.

502. *Materials for Teaching Science.* (3) An advanced course treating the location, collection, and use of curriculum materials in science teaching. Prerequisite: Sci. Educ. 421. Three class periods each week.

511-2-3. *Research and Thesis in Science Education.* (9) The course is divided into three parts:

511—Principles of Research

512—Collection and Analysis of Data

513—Preparation of Research Report.

The first part will be taken in Education 511. The other two parts will be completed on an individual basis with the assistance of the adviser.

SOCIAL SCIENCES

DEPARTMENT OF HISTORY AND GEOGRAPHY

MERL R. EPPSE, *Head*

Instruction in the Department of History is designed to present the main aspects of the rise and development of civilization. The department emphasizes the social, economic, and political phases of History but it also deals with the institutional, cultural, diplomatic and religious phases. The aim of the Department is to enable students to read historical literature critically and to acquaint students with the facts in the development of man and of civilization.

A student who makes history his major will be expected to have covered the survey courses in American and European history, specifically, History 201-2-3 and History 301-2-3. In addition, each student is expected to fulfill all college requirements. Those students who desire the Bachelor's degree in History must fulfill, in addition to the requirements of the College, the following Divisional requirements: History 121-2-3, 201-2-3; 211-12-13; 301-2-3 and History 491 or 492.

Instruction in history is designed to give to the student within the first two years a knowledge of the important events, characters and developments in the past of mankind. To achieve this aim, the Department requires that all majors have a general understanding of certain related fields.

A student who makes History his minor will be expected to complete the same amount of prerequisite work as that indicated in the preceding paragraphs. In addition, each minor must complete nine hours of history in a prescribed area. Hence, a student with a minor in history must have a minimum of 18 hours.

All majors in history are required to select their advanced courses in the senior college from one of the following three areas; namely, (1) American History—United States (Colonial, Middle, Recent and Regional History), (2) European History and (3) World Civilization and Culture.

A major in history shall include History 121-2-3; 201-2-3; 211-12-13; 301-2-3, and 491 or 492; nine additional hours in junior-senior courses in history; Economics 211-12-13; or Sociology 211-12-13; and Political Science 211-12-13.

BACHELOR OF ARTS CURRICULUM

Freshman Year	*Quarter Hours Credit*		
Name of Course	I	II	III
English 101-2-3	3	3	3
Foreign Language	3	3	3
History 121-2-3	3	3	3
Science (Biology, Chemistry, Physics or Mathematics)	4	4	4
Electives	3	3	3
Physical Ed. 101-2-3 (men)	⅓	⅓	⅓
(women)	1⅓	1⅓	1⅓
Air Science I (men)	1	1	1
	17⅓	17⅓	17⅓

Sophomore Year	*Quarter Hours Credit*		
Name of Course	I	II	III
English 211-12-13	3	3	3
Foreign Language	3	3	3
Social Studies	3	3	3
Major	3	3	3
Minor	3	3	3
Physical Ed. 200's (women)	1	1	1
(men)	⅓	⅓	⅓
Air Science II (men)	⅓	⅓	⅓
	16⅓	16⅓	16⅓

Junior Year	*Quarter Hours Credit*		
Name of Course	I	II	III
Political Science 313	3		
Major	6	6	6
Minor	3	3	3
Electives	6	6	6
	18	15	15

Senior Year	*Quarter Hours Credit*		
Name of Course	I	II	III
History 491-2	3	3	
Major	3	3	3
Minor	3	3	3
Electives	9	9	9
	18	18	15

BACHELOR OF SCIENCE CURRICULUM

Freshman Year	*Quarter Hours Credit*		
Name of Course	I	II	III
English 101-2-3	3	3	3
Education 101-2-3	1	1	1
History 121-2-3	3	3	3
Science (Biology, Chemistry, Physics or Mathematics)	4	4	4
Geography 171-2-3	3	3	3
Physical Education 101-2-3	1	1	1
	15	15	15

Sophomore Year	*Quarter Hours Credit*		
Name of Course	I	II	III
English 211-12-13	3	3	3
Psychology 221-22-23	3	3	3
Social Studies	3	3	3
Science or Health	3	3	3
Major	3	3	3
Physical Education 201-202-203	1	1	1
	16	16	16

Junior Year	*Quarter Hours Credit*		
Name of Course	I	II	III
Psychology 243	3		
Education 341		3	
Education	3	3	6
Major	3	3	3
Minor	3	3	3
Electives	3	3	3
	15	15	15

Senior Year	*Quarter Hours Credit*		
Name of Course	I	II	III
Education 471-2		6	
History 471	3		
Education	3	3	
History 491 or 492			3
Major	3	6	6
Minor	3	3	3
Electives	6		6
	18	18	18

DESCRIPTION OF COURSES

NOTE: Course numbers shown in parentheses are numbers in the catalogues of previous years. Asterisks indicates that the course may be considered for graduate credit.

121-2-3. *The Growth of Civilization.* (9) A study of the contributions that all races and nations have made to our present civilization. Assigned read-

ings, discussions, reports and quizzes will comprise the type of work in this course. (Required of all Freshmen.)

201-2-3. *American History.* (9) European background of the beginnings and establishment of the United States in 1789. The beginning of our National State from 1789-1877. The development and significance of Jeffersonian Democracy; the war of 1812, and the growth of Nationalism; the Westward Movement; the Controversy over the Negro and his place in a democracy; the Civil War and Reconstruction. The emergency of the industrial life and the influence of the machine on American civilization; the problem of rapidly changing environment; industrial consolidation; rise of organized labor; rural trends and the Negro; the flight of the Negro to the city; American imperialism; education and religion; the plight of a democracy in a collectivistic society; the Second World War.

211-12-13. *History of England.* (9) Not open to freshmen. History of England to 1588; History of England, 1588-1763; History of England since 1763.

301. *Foundations of Modern Europe.* (3) This course deals with the important phases of the Protestant Revolt; the economic, political, and religious background; the Lutheran and Reform Movements, with special reference to their political and theological trends; the early expansion of Europe.

302. *Foundations of Modern Europe.* (3) A study of the rise of Russia, Prussian and Austria; the decline of Sweden and Poland; the Intellectual Revolution; the continued expansion of Europe. Most emphasis will be placed upon the French Revolution; upon its causes, personalities and its constructive features; the career of Napoleon.

303. *Foundations of Modern Europe.* (3) A study of European History from 1815-1870. The beginning of the Industrial and Social Revolution of the nineteenth century; Vienna Peace Settlement; political reaction and revolution; the creation of Germany and Italy; the struggle for democracy and social reform in various European countries.

331. **American Colonial History.* (3) The economic, social, religious, cultural, and political development of America from 1607-1789.

332-3. **The Ancient Regime and French Revolution.* (6) A study of the impact of unrestrained powers and the work of Napoleon; the conditions of the French people before and after the revolution.

341-2. *History of Tennessee.* (6) A course in the cultural, economic, and political development of the State of Tennessee. Emphasis will be placed on the part the Negro has played.

361. (333) **Constitutional History of the United States to 1787.* (3) The origin, development and operation of the Constitution of the United States with attention to the factors which have influenced constitutional changes and the historic cases in which the provisions and principles of the Constitution have been interpreted and applied by the courts. Prerequisite: History 201-2-3 or Political Science 221-2-3.

362. **Constitutional History of the United States 1787-1816* (3) Continuation of History 361.

363. **Constitutional History of the United States 1816-Present.* (3) Continuation of History 362.

*Course approved for graduate credit.

371. *(403). *Economic History of the United States 1603-1860.* (3) A study of the Economic development of the United States from the colonial period to the present with particular emphasis on the influence of economic forces in the shaping of social and political growth and change. Prerequisite: History 201-2-3.

372. **Economic History of the United States 1865-Present.* (3) Continuation of History 371.

381-2. (312) **Civil War and Reconstruction.* (6) The study of the factors leading to the secession and an analysis of the problems of reconstruction. Three quarter hours each.

385-6-7. *Vital Topics.* (6) The study, analysis, and interpretation of Vital Topics in the changing world of today. The vital current economic, social, religious, and political problems that confront the world and the United States will be presented, analyzed, discussed, and interpreted. Representatives from each Division may participate jointly in the conduct of the course. Two hours credit each quarter. A student may earn a maximum of six credits. He may repeat the course without credit at his option.

391-92-93. **Russian History.* (9) The background, causes and events deals with the emergence of Russia from barbarism to a National State and her attempts to become a Westernized nation. A study of Russia's political development will be made from Alexander I to the Present day. The many changes incident to her rise from a feudal state to a dynamic revolutionary state will be considered. Special emphasis will be laid upon the impact of successive revolutionary precursor of Marxian Socialism. Russia's historic mission in foreign affairs will be employed as a guide toward an understanding of her present-day aims.

401-2-3. **Contemporary World History.* (9) The background, causes and events of the First World War; the Paris Peace Conference and its later problems; the League of Nations; the rise of Communism, Fascism, Nazism; development in education, art, Literature and music and religion; the East in Revolt; the new totalitarian states; and finally the Second World War.

412-13. (412) **History of the South.* (6) A survey of the political, economic, social and religious history of the South and its relationships to the pattern of American history.

421-2-3. (422) **Diplomatic History of the United States.* (9) A survey of the foreign relations of the United States, with special reference to the es tablishment and development of those major policies which have determined American international action.

431-2. **History of the West.* (6) A survey of the westward expansion of the American Nation. Special emphasis will be given to the movement of population, the occupation of successive frontiers, and the influence of the frontier experience upon national and international developments.

433-4. **The British Empire.* (6) A study of the rise and expansion of the British Empire and its influence on world history of 1783. Topics: The establishment of colonies in the East and West Indies; India, Africa, and North America under the Stuarts; the struggles with Spain, Holland, and France for world dominion; Mercantilism and Colonial Administration; the American revo-

*Course approved for graduate credit.

lution since 1783; the lapse and revival of imperial spirit in Egypt, Australia, New Zealand, and Canada; Protectorates, Mandidates, crown colonies, and "Spheres of influence," the world importance of the British Empire; and the recent developments in British Dominion Government.

442-3. **Renaissance and Reformation.* (6) The first quarter of this course will be a survey of Europe between 1250-and 1600. Special attention will be given to the Renaissance, the artistic, literary, political, and commercial growth. During the second quarter special emphasis will be given the Protestant Reformation and the Catholic Counter Reformation.

450. *History.* (3) The writing of senior projects for history.

451-2-3. **Latin American History.* (9) A general study of this history of Mexico Central and South America. (1) The Colonial Period, wars for independence. (2) Recent political history with the economic resources and trade relations emphasized. (3) The development of foreign relations as well as the Western Hemisphere ideology of solidarity and mutual aid.

461-2-3. **The Middle Ages.* (9) A study of the dominant ideas, beliefs, customs, and institutions of Medieval European society together with the religious, intellectual, economic, and social forces which produced or influenced them. Prerequisite: Consent of the instructor.

471. *The Teaching of History.* (3) The theory materials for the teaching of history will be reviewed. Open to majors in the Department who plan to teach. Assigned readings, personal investigations, field work and demonstrations in class.

481-2-3. **World Civilizations.* (9) The study of the political, economics, social and international relations of the Far East, Near East, India, and Africa. The relation of these countries and the role each played in the expansion of Western people will be emphasized.

491. (411) **The Negro in American History.* (3) A study of the role and impact of the Negro in the exploration, discovery and early period, and the growth of American life to 1865.

492. (411) **The Negro in American History.* (3) The part played by the Negro since 1865 in the Economic, political, and cultural development of the United States.

GRADUATE CURRICULUM DEPARTMENT OF HISTORY

501-2-3. *Seminar in American History.* (9) An intensive study of selected problems in the history of the United States from 1606 to 1900.

511. *Historical Method.* (3) The principles and techniques of research as applied to the study of History; Illustrative problems in the preparation of a monograph. Required of all candidates for the advanced degree.

512. *Master's Thesis.* (3) Credit for the approved Master's Thesis.

521-22-23. *Regional American History.* (9) The study of problems of regions or sections of the United States with special emphasis on the South and West.

531-32. *Recent United States History.* (6) The study of contemporary problems in the United States with emphasis on the Social, economic, and political phases of American life.

*Course approved for graduate credit.

533. *American Historiography.* (3) A course designed to introduce students to historical literature through an analysis of American historians and their writings. Required of all candidates for the Advanced degree who have selected the area of American History for specialization.

534. *European Historiography.* (3) A course like History 533 in the European field. Required of all candidates for the advanced degree who have selected the area of European History for specialization.

541-42-43. *Seminar in European History.* (9) The study of Europe in the nineteenth century with emphasis on the cultural developments of Western Europe. Prerequisites: History 301-02-03.

551-52-53. *Problems in American Constitutional History.* (9) An intensive study of selected problems relating to the origin and evolution of the principles, institutions, and concepts which are embodied in the American Constitutional system. Prerequisites: History 361-62-63.

561-62-63. *Seminar in English Constitutional History.* (9) A study of the beginnings and evolution of the institutions, principles, practices and common law of England. Prerequisites: History 211-12-13 and nine additional hours in European History.

571-72-73. *Seminar in World Civilization and Culture.* (9) The intensive study of selected social, economic, political and international problems of the nations of the Near East, Far East, Africa and Latin American. Prerequisites: Twenty-seven hours in History of which nine must be in American History.

The objectives of Geography are (1) to give the student a clear realization of the relation of the field of geography to other fields of knowledge, (2) to emphasize instruction in geography as an essential part of a liberal education, and (3) to point out the growing opportunities and necessity for geographers in the modern world.

BACHELOR OF ARTS CURRICULUM

Freshman Year

Name of Course	Quarter Hours Credit I	II	III
English 101-2-3	3	3	3
Foreign Language	3	3	3
Geography 171-172-173	3	3	3
Science, (Biology, Chemistry, Physics or Mathematics)	4	4	4
History 121-2-3	3	3	3
Physical Ed. 101-102-103 (men)	⅓	⅓	⅓
(women)	1⅓	1⅓	1⅓
Air Science I (men)	1⅓	1⅓	1⅓
	17⅓	17⅓	17⅓

Sophomore Year

Name of Course	Quarter Hours Credit I	II	III
English 201-2-3	3	3	3
Foreign Language	3	3	3
Economics 211-12-13	3	3	3
Geography	3	3	3
Minor	3	3	3
Physical Ed. 200's (men)	⅓	⅓	⅓
(women)	1⅓	1⅓	1⅓
Air Science II (men)	1	1	1
	16⅓	16⅓	16⅓

Junior Year

Name of Course	Quarter Hours Credit I	II	III
American History 201-202-203	3	3	3
Geography	6	6	6
Minor	3	3	3
Political Science 221-22-23	3	3	3
Electives	3	3	3
	18	18	18

Senior Year

Name of Course	Quarter Hours Credit I	II	III
Geography 450		3	3
Political Science	3		
Minor	3	3	3
Electives	9	9	9
History 450			3
	15	15	18

BACHELOR OF SCIENCE CURRICULUM

Freshman Year

Name of Course	Quarter Hours Credit I	II	III
English 101-2-3	3	3	3
History 121-2-3	3	3	3
Science (Biology, Chemistry Physics or Mathematics)	4	4	4
Geography 171-2-3	3	3	3
Physical Ed. 101-102-103	1	1	1
Electives	3	3	3
	17	17	17

Sophomore Year

Name of Course	Quarter Hours Credit I	II	III
English 201-2-3	3	3	3
History 201-2-3	3	3	3
Psychology 221-222-223	3	3	3
Education			3
Health	3	3	3
Physical Ed. 201-2-3	1	1	1
Geography 371-2-3	3	3	3
	16	16	19

Junior Year

Name of Course	Quarter Hours Credit I	II	III
Education 341	3		
Geography 471		3	
Education 343			3
Education	3		
Geography	3		3
Art		3	
Social Science	3	3	3
Elective	3	6	6
	15	15	15

Senior Year

Name of Course	Quarter Hours Credit I	II	III
Education 471-2		6	
Education 385	3		
Geography 450	3	6	3
Social Science	3		3
Minor	3	3	3
Electives	3		6
	15	15	15

Geography

A major in geography consists of 45 quarter hours. A student who selects geography as a major is required to take Geography 171, 172, 173, 181, 182, 371, 372, 373, 463 and is advised to take Geography 201, 261, and 451.

A minor in geography consists of 27 hours, which must include Geography 171, 172, 173, 371, 372, 373.

Geography 171, 172, 173 are prerequisites to all courses in geography except 261, 262.

171, 172, 173. *Elements of Geography.* (9) This is a course in the fundamentals of physical and human geography. A survey of regional patterns of settlement interpretative of lands and other basic resources is the culmination of this course.

181-182. *Geology.* (6) This course deals with the origin of the surface features of the earth; the structural features of the earth's crust and how they were formed. It also includes a study of common minerals and rocks.

201. *Economic Geography.* (3) This course emphasizes the distribution of economic products. Communications, domestic and foreign are an integral part of the course.

261. *Elements of Weather.* (3) A critical study of the atmosphere. This course will consider weather elements, weather observation, airmasses and their importance to weather.

451. *Cartography.* (3) Drawing of projections. The study of types of projections and the best use of each is included. Some attention is given to graphs.

271-2-3. *Fundamental of Economic Geography.* (9) A survey of the elements of the human habitat with emphasis on major world resources. A consideration of the geographic facts which are important to the development of the major world industry and industrial areas. (For Business Students only).

371. *United States and Canada.* (3) Recognition, analysis and interpretation of basic physiographic features, resources and human adjustments within its several unit areas.

372. *Caribbean America.* (3) The northern countries of Latin America and the West Indies; their patterns of land occupance; their commercial relation to the U. S.

373. *South America.* (3) Regions and resources of South America beyond the Caribbean area with a special study of the distinctive role of each country according to its geographic significance.

381. *Europe.* (3) Regions and resources of Europe, and their relation to the development of the basic culture in different areas.

382. *Cities.* (3) Geographic factors in the origin and growth of urban centers. Analysis and synthesis of the economic and physical structure; function of trade centers in the light of their geographic setting; areal expansion; intra and inter-trade relations; integration with avenues of communication and city planning.

391. *Political Geography.* (3) A study of political relations, territorial aims and aspirations, boundaries and raw materials.

401. *Asia.* (3) Resources and economic activities in their regional setting; aggressive policies in territorial expansion.

402-403. *Geography of the South.* (6) A regional study of the South generally during the first quarter. Emphasis is on the sequence of land occupation. During the second quarter, a detailed study of Tennessee, The Tennessee Valley Authority (TVA), and adjoining areas is given.

411. *Australasia.* (3) Australia and the East Indies. A study of the physical, economic and cultural elements visible as earth features.

412. *Africa.* (3) Resources and regions of Africa. Some consideration will be given the French, British and other colonial policies in Africa.

413. *World Resources.* (3) A study of the natural conditions and resources in the major areas of international concern. Special emphasis will be given resources needed by the United States.

421. *China.* (3) Regions and resources of China, with special emphasis on differences and similarities of each cultural and physical region. The placing of China as a whole in its proper continental and world framework is the final objective.

422. *The U.S.S.R.* (3) A geographical analysis of the terrain, resources and economic development of Russia and those areas in Europe and Asia largely under Russian influence.

450. *Geography.* (3) Senior Projects. The writing of a special paper or the preparation of some special project in Geography. Required of all graduating seniors.

451. *Cartography.* (3) Drawing of projections. The study of types of projections and the best use of each is included. Some attention is given to the preparation of graphs.

462. *World Climates.* (3) A course designed to effect a concept of the distribution of climates over the world and the reasons for this distribution. Of major importance in this course will be: controls of climate, a climatic

classification by Koppen, and the relationships of man's activities and world climates.

463. *Physiography.* (3) Study of the land features of the earth and their development. Additional prerequisite: Geography 181-182.

471. *Teaching of Geography.* (3) Principles of organizing and presenting geographic materials for teaching purposes in secondary schools.

Graduate Courses

(A minor is offered in Geography in the Graduate School)

511. *Geographical Research.* Three hours.

512. *History and Theory of Geography.* A comparative study of the various geographic concepts and their development. Three hours.

513. *Historical Geography.* The influence of geography upon historical events. Three hours.

521-522. *Seminar in Political Geography.* Problems in political geography with emphasis on their relation to current history. Six hours.

523. *Seminar in Advanced Economic Geography of the United States.* Three hours.

531-532. *Regional Climatology.* A study of the differences in climate over the world and the preparation of maps from selected data. Six hours.

533. *Mountain Climate.* A study of the climates of the highland areas at different latitudes and elevations. Man's adaptation to the elevated areas will be studied. Three hours.

DEPARTMENT OF POLITICAL SCIENCE

SUSIE O. BRYANT, *Head*

The general objectives of the Department of Political Science are: (1) to provide a broad and basic background for understanding and evaluating functions and problems of states, their governments, citizenship and human relationships; (2) to provide a broad over-all picture of the economical, social and psychological factors which underlie political phenomena; (3) to prepare teachers and investigators for instructional and research positions and government service; and (4) to provide the background for students who intend to specialize in social sciences or in professions such as law or journalism.

The Department of Political Science offers courses of study at the undergraduate and graduate levels leading to the degrees of Bachelor and Master of Arts in Political Science.

Students desiring to qualify for certification may do so by electing courses in Education prescribed by the State Board of Certification. In such cases additional hours will be required for graduation.

Students in the Department are required to take a minimum of one major and one minor.

Students who major in political science must complete a minimum of thirty-six quarter hours in the Department, excluding Political Science 221-2-3 and 313. Selection of other courses within the thirty-six hours depends on the students' objectives. All courses listed in the curriculum pattern, unless otherwise designated, are required for majors in political science.

Students who minor in the Department must complete a minimum of eighteen quarter hours in addition to the basic courses, Political Science 221-2-3.

CURRICULUM IN POLITICAL SCIENCE

Freshman Year	*Quarter Hours Credit*		
Name of Course	I	II	III
English 101-2-3	3	3	3
Foreign Language	3	3	3
History 121-2-3	3	3	3
Science (Chemistry, Biology or Physics)	4	4	4
Mathematics	3	3	3
Physical Education (women)	1⅓	1⅓	1⅓
Physical Education (men)	⅓	⅓	⅓
Fresh. Orientation	1	1	1
Air Science I (men)	1	1	1
	19⅓	19⅓	19⅓

Sophomore Year	*Quarter Hours Credit*		
Name of Course	I	II	III
English 211-2-3	3	3	3
Foreign Language	3	3	3
Political Science 221-2-3	3	3	3
Sociology 211-2-3	3	3	3
History 201-2-3	3	3	3
Psychology 221-2-3	3	3	3
Physical Education (women)	1⅓	1⅓	1⅓
Physical Education (men)	⅓	⅓	⅓
Air Science II (men)	1	1	1
	19⅓	19⅓	19⅓

Junior Year	*Quarter Hours Credit*		
Name of Course	I	II	III
Economics 211-2-3	3	3	3
Speech 202		3	
Political Science 313			3
Geography 171-2	3	3	
Major	6	9	9
Minor	3		
	15	18	15

Senior Year	*Quarter Hours Credit*		
Name of Course	I	II	III
History 491	3		
Geography 391	3		
Major	3	6	3
Minor	3	6	6
Electives	3	3	3
	15	15	12

COURSES IN POLITICAL SCIENCE

Undergraduate

Political Science 221-2-3 are prerequisites to all other courses in the Department.

Unless otherwise designated all courses meet three one-hour periods per week.

101-2-3. *Freshman Orientation.* (3) Identical with Sociology 101-2-3.

221. *American Government; National.* (3) An introductory course dealing with the foundation, organization, and principles of the national government. Emphasis upon the relations of the citizens to the government and upon the rights, duties, and obligations of citizens.

222. *American Government; National.* (3) The structure, function and operation of the national government. Prerequisite: Political Science 221.

223. *American Government, State and Local.* (3) An analysis of the structure, principles and operations of the state and local units of government. Illustrative materials will be drawn largely from Tennessee. Prerequisite: Political Science 222.

312. *The Legislative Process.* (3) An examination of the structure and methods of transacting business in the American Congress and state legislature.

313. *Tennessee State Government.* (3) The study of Tennessee government from the functional point of view, emphasizing political activities, taxation, education, social welfare and economic services of the government.

321-2-3. *Comparative European Government.* (9) An analysis of the governments of selected European countries with special attention given to the de-

velopment of the political systems both in theory and practice. Comparison with American institutions will be emphasized.

331-2. *Latin American Government.* (6) An analysis of the political and constitutional development of the Latin American states with emphasis on political concepts, policies, and international relations.

333. *Far Eastern Government.* (3) Special attention is devoted to constitutional and political development in China and Japan. Consideration is given to policies and international relations.

341-2-3. *International Relations.* (9) A study of the present day relations and problems among states of the world and the major factors which underlie and influence these relations. Prerequisites: Political Science 321-2-3.

351. *Government of the British Commonwealth of Nations.* (3) An examination of the government of the United Kingdom and the organization of that government as it bears upon the Commonwealth; an analysis of the problems of the Dominions and dependent areas with special attention given to the problems of imperial strategy and their bearings on international policies.

353. *Government of Russia.* (3) A course dealing with the theory, structure, functions, operations, powers, problems and trends of the Russian government under Soviet rule. Prerequisite: Political Science 321-2-3.

362. *American Political Parties and Policies.* (3) An analysis of the dynamics of American politics, with emphasis upon the factors influencing the formation of public opinion and the role of pressure groups. Prerequisite: History 201-2-3.

363. *American Political Parties and Policies.* (3) A study of the formation of political parties; nominations and elections; methods of representation and voting; and the importance of parties in American government. Prerequisite: Political Science 362.

373. *Propaganda and Public Opinion.* (3) An analysis of the purposes and techniques of propaganda and the foundation and expression of public opinion.

421-2-3. *Public Administration.** (9) An examination of the principles of public administration; structure and organization; financial management; administrative responsibility, and the relation between the administration and other branches of government in the United States. Prerequisite: Political Science 312.

431-2-3. *American Constitutional Law.** (9) A study of the sources, principles, and powers of government in the United States as embodied in the Constitution and judicial decisions in leading cases.

441-2. *International Law.** (6) A study of the rights and duties of states in their normal relations; war; neutrality; intervention and blockade. Prerequisites: 341-2-3.

450. *Senior Project Writing.* (3).

453. *American Diplomacy.** (3) An examination of the more important principles of American diplomacy and their applications as bases for the understanding of the foundation of American foreign policy. Prerequisites: Political Science 341-2-3.

*Approved for graduate credit.

461. *Western Political Thought.** (3) The origin and evolution of the major political concepts of the Western World.

462-3. *American Political Thought.** (6) An intensive study of main currents in American political thought from the Colonial Period to the present.

465. *Contemporary Political Thought.** (3) An examination of the changing political ideas since the late eighteenth century revolutions as basis for contemporary systems of Democracy, Communism and Fascism.

Graduate Courses

General Prerequisites: Courses are offered only to graduate students who have thirty-six quarter hours in the Department of which a minimum of fifteen quarter hours must be in one field.

511. *Methods of Research in Political Science.* (3) Required of majors in political science.

512. *Thesis Writing.* (3) Required of majors in political science.

521-2-3. *American Constitutional Development.* (9) An analysis of the origin, structure, development, and operation of the American Constitutional system with special emphasis upon the role of the legislative, executive, and judicial branches of government in constitutional change.

526-7. *Government and the Economic Order.* (6) This course deals with constitutional principles as they apply to the regulation of business. Emphasis is placed on Federal and state regulation of public utilities, labor, securities, communication, transportation, housing, commerce, and social security.

531-2-3. *Seminar in Comparative Government.* (9) A critical examination and appraisal of selected democratic and totalitarian states in the family of nations.

535. *Government and Policies of the Soviet Union.* (3) An intensive study of the basic political and governmental institutions; the Communist Party; economic policies; and civil rights.

537-8. *The Government and Politics of the Far East.* (6) An analysis of the political and governmental institutions, domestic policies, foreign relations and basic philosophy of China, Japan, Korea, Manchuria, Siberia and India.

541. *Seminar in International Relations.* (9) A study of the major theories underlying interstate relations; the sovereign state as a member of the family of nations; nationalism in international relations; and theories and practices of imperialism.

551-2. *Administration of Justice.* (6) An inquiry into the development, organization, and procedure of our judicial system; the nature, objectives and limitations of law as administered through courts; the recognition of new powers; and the development of new doctrines in legal thinking.

561-2-3. *Seminar in Political Thought.* (9) An examination, comparison and evaluation of the major schools of political thought, or selected historical periods of political movements with particular reference to the social and cultural setting in which they evolved.

571-2-3. *Seminar in Public Law.* (9) Reading and research in the field of public law. Selected problems and topics in the student's field of concentration.

*Approved for graduate credit.

581-2-3. *Seminar in Political Science.* (9) An intensive oral and written study of contemporary problems. This course presents an opportunity for advanced research in the field or fields of interest to the individual student.

DEPARTMENT OF SOCIAL ADMINISTRATION

J. H. Holland, *Head*

The pre-professional Social Work curriculum is designed to provide the student with an introductory knowledge of the generic principles, skills, and understanding of human behavior which is necessary for graduate study in Social Work and essential to the practice of social work as a junior worker in private and public Social Welfare Agencies.

Students are also required to do seventy-two hours of Field Work in selected social agencies. This is a requirement of the American Association of Schools of Social Administration, which is the accrediting body and of which we are a member. The purpose of field work is to provide the student with the opportunity of applying theory to actual practice in a controlled setting under the supervision and guidance of a qualified practitioner. He is then evaluated upon the basis of his growth and development on the job.

The Department of Social Administration offers the Bachelor of Science and the Bachelor of Arts Degrees.

The Department provides one year of advanced study towards a Master's Degree in Professional Social Work Training on the graduate level.

A major in the Department consists of forty-five quarter hours in Social Administration courses. All courses in the Curriculum Pattern are required unless otherwise designated. A minor in Social Administration consists of the following courses: 421, 463, 471 and fifteen additional hours in 300's and 400's courses.

CURRICULUM OF SOCIAL ADMINISTRATION

Bachelor of Science

Freshman Year

Name of Course	*Quarter Hours Credit* I	II	III
English 101-2-3	3	3	3
History 121-2-3	3	3	3
Biology 111-2-3	4	4	4
Mathematics 131-2-3	3	3	3
Physical Education (women)	1⅓	1⅓	1⅓
Physical Education (men)	⅓	⅓	⅓
Air Science I (men)	1	1	1
Fresh. Orientation	1	1	1
Electives	3	3	3
	18⅓	18⅓	18⅓

Sophomore Year

Name of Course	*Quarter Hours Credit* I	II	III
English 211-2-3	3	3	3
Sociology 211-2-3	3	3	3
Political Science 221-2-3	3	3	3
Psychology 221-2-3	3	3	3
Economics 221-2-3	3	3	3
Biology 211	4		
Psychology 243			3
Political Science 313		3	
Physical Education (women)	1⅓	1⅓	1⅓
Physical Education (men)	1⅓	1⅓	1⅓
Air Science II	1	1	1
	20⅓	19⅓	19⅓

Junior Year

Name of Course	*Quarter Hours Credit* I	II	III
History 201-2-3	3	3	3
Sociology 322		3	
Education 341	3		
Education 342		3	
Psychology 253			3
Psychology 263			3
Sociology 351	3		
Social Adm. 322		3	
Social Adm. 332		3	
Social Adm. 341	3		
Social Adm. 412		3	
Social Adm. 451			3
Social Adm. 463	3		3
Electives	3		3
	18	18	18

Senior Year

Name of Course	*Quarter Hours Credit* I	II	III
Math. 311 or Soc. 411	3		
Sociology 461	3		
Education 385			3
Education 471-2		6	
Social Adms. 421-2	3	3	
Social Adm. 425			3
Social Adm. 433			3
Social Adm. 471-2-3	3	3	3
Social Adm. 482		3	
Psychology 323			3
Electives	6		
	18	15	15

Bachelor of Arts

Freshman Year

Name of Course	*Quarter Hours Credit* I	II	III
English 101-2-3	3	3	3
Foreign Language	3	3	3
History 121-2-3	3	3	3
Biology 111-2-3	4	4	4
Mathematics 131-2-3	3	3	3
Physical Education (women)	1⅓	1⅓	1⅓
Physical Education (men)	⅓	⅓	⅓
Air Science I (men)	1	1	1
Fresh. Orientation	1	1	1
	18⅓	18⅓	18⅓

Sophomore Year

Name of Course	*Quarter Hours Credit* I	II	III
English 211-2-3	3	3	3
Foreign Language	3	3	3
Sociology 221-2-3	3	3	3
Biology 211	4		
Political Science 221-2-3	3	3	3
Psychology 221-2-3	3	3	3
Ed. Psy. 243			3
Political Science 313		3	
Physical Education (women)	1⅓	1⅓	1⅓
Physical Education (men)	⅓	⅓	⅓
Air Science II	1	1	1
	20⅓	19⅓	19⅓

Junior Year

Name of Course	*Quarter Hours Credit* I	II	III
History 201-2-3	3	3	3
Economics 211-2-3	3	3	3
Psychology 253			3
Psychology 263			3
Sociology 322		3	
Sociology Adm. 322		3	
Social Adm. 332		3	
Social Adm. 341	3		
Social Adm. 412		3	
Social Adm. 451	3		
Social Adm. 463			3
Electives	6		
	18	18	15

Senior Year

Name of Course	*Quarter Hours Credit* I	II	III
Math. 311 or Sociology 411	3		
Sociology 461	3		
Psychology 323			3
Social Adm. 421-2	3	3	
Social Adm. 425			3
Social Adm. 433			3
Social Adm. 442		3	
Social Adm. 471-2-3	3	3	3
Social Adm. 482		3	
Electives	3	6	3
	15	18	15

Courses in Social Administration

Undergraduate

322. *Social Recreation I.* (3) Designed to develop skill in quiet and active games, play party games, and singing games with emphasis on the dynamics of play leadership and program planning.

331. *Leisure and Recreation.* (3) The study of the historical development of recreation and its relationship to modern society.

332. *Recreational Agencies in the Field of Group.* (3) A study of those social agencies focusing on the group and their relationship to the group work method.

333. *Social Recreation II.* (3) Designed to develop skills in the use of dramatics, folk rhythms and square dancing.

341. *Survey of the Field of Social Work.* (3) A survey of contemporary social work by functional groupings such as Case Work, Group Work, and Community Organization. The emphasis is on objectives, process, and historical development of the Social Work idea.

412. *Criminology.* (3) The course will include the problem of crime and criminals; the making of the criminal, the theories of crime and punishment, machinery employed in dealing with the criminals, penal and correctional institutions and programs of correction.

421. *Introduction to Social Casework.* (3) A limited beginning in Social Case Work and an introductory consideration of the basic skills in working with people. Emphasis is placed on meeting needs of individuals and families, individualizing people, understanding attitudes and using community resources. Prerequisite: 341.

422. *The Interview and Case Recording.* (3) A course designed to develop skills in the techniques and methods of interviewing and recording. Special emphasis upon the understanding of one's self and generic human behavior and office procedures as it relates to the welfare office.

425. (423) *Field Work.* (Group) (3) Supervised practice in selected Social Agencies which provides an opportunity for students to apply theory to actual practice. Emphasizing placement in a Group Work Agency and professional growth on the job. Prerequisites: 341, 421, 422, 463, and 471.

433. *Social Work and Health Problems.** (3) Elementary medical information for social workers. The course revolves around the symptoms, and etiology of common diseases; the responsibility of the social worker to detect, report, and to organize medical care as resources in treatment. It also includes the public health agencies.

442. *Personality Development.* (3) This course deals with the various forces at work in the development of personality. This includes the role of heredity, constitutional factors, psychological and physical. Emphasis is placed upon the influences of social experiences during childhood and adolescence on personality development and effect of personality traits upon social and occupational success.

451. *Juvenile Delinquency.* (3) A survey of the causation, prevention and treatment of juvenile delinquency, including the system of probation, use of clinics, juvenile courts, correctional institutional institutions, child placement, and recreational programs.

*Course approved for graduate credit.

463. *Community Organizations.* (3) This course deals with the methods and principles involved in analyzing community needs, developing programs to meet these needs in terms of community resources and securing community interests, leadership and support.

471. *Introduction to Group Work.** (3) The course examines the process of Social Group Work as a basic approach and method in Social Work and acquaints the student with some of the principles, methods, and techniques of Group Work.

472. *Handicraft Skills.* (3) Designed to develop skills in simple crafts which require inexpensive materials and equipment and may be adapted to practically any interest or age group.

473. *Field Work* (Case) Supervised practice in Social Agencies emphasizing case work skills within the limitations of the agencies functioning. Prerequisites: 322, 333, 341, 421, 422, 471, and 472.

482. *Introduction to Group Leadership.** (3) Analysis of leadership as to types and purpose, with emphasis on its application to activities, age range, sex and program development.

Graduate Courses

Courses listed are open only to graduate students who have a minimum of thirty-six quarter hours of which fifteen or more quarter hours must be in one field.

501-2-3. *Case Work.* (9) The principles and methods of analysis and treatment common to all forms of social case work.

511. *Methods of Research in Social Work.* (3).

521-2-3. *Field Work I, II, III.* (9) Field Work placements are made in either a public or private agency. Continued correlation is made between field and class instruction.

531. *Child Welfare Problems.* (3) This course is planned to give an understanding of the methods and standards of care of dependent, defective and delinquent children in their homes, institutions and foster homes.

532. *Treatment of the Juvenile Delinquent.* (3) A study of the causes and methods of treatment of juvenile delinquency with special reference to current procedures used in dealing with the problems.

533. *Community Organization.* (3) Understanding the community, methods of analyzing community needs and developing programs to meet those needs, securing community interest, leadership, and support.

543. *Advance Leadership.* (3) The course will deal with leadership methods and techniques as they relate to various group types and program building. Prerequisites: 322, 331, 332, 333, 471, 472, and 482.

DEPARTMENT OF SOCIOLOGY

S. O. Bryant, *Acting Head*

The general design of the Department of Sociology embraces a fourfold objectives: (1) to provide a broad systematic framework for understanding the nature of human relationships; (2) to train students for employment in civil service, teaching and community organization; (3) to prepare students for

*Approved for graduate credit.

advanced specialized study in Sociology; and (4) to train students to conduct research in the fundamental problems of social science.

The Department offers the Bachelor of Arts Degree and the Master of Arts Degree for majors satisfactorily fulfilling the requirements of the Department.

Students wishing to qualify for certification (Teacher's Certificate) may do so by electing courses in Education as prescribed by the State Board of Certification, in which case additional hours will be required for graduation.

A major in Sociology consists of Sociology 211-2-3 and thirty-six additional hours. All courses listed in the curriculum pattern are required for majors. Substitutions must be approved by the Department Head.

A minor in Sociology consists of Sociology 211-2-3 and a minimum of eighteen quarter hours in 300 or 400 courses.

Curriculum in Sociology

Freshman Year

	I	II	III
English 101-2-3	3	3	3
French or German	3	3	3
History 121-2-3	3	3	3
Biology, Chemistry or Physics	4	4	4
Mathematics 131-2-3	3	3	3
Physical Education (women)	1⅓	1⅓	1⅓
Physical Education (men)	⅓	⅓	⅓
Freshman Orient.	1	1	1
Air Science I (men)	1	1	1
	18⅓	18⅓	18⅓

Sophomore Year

	I	II	III
English 211-2-3	3	3	3
French or German	3	3	3
Sociology 211-12-13	3	3	3
Economics 211-2-3	3	3	3
Psychology 221-2-2	3	3	3
Psychology 243			3
Physical Education (women)	1⅓	1⅓	1⅓
Physical Education (men)	⅓	⅓	⅓
Air Science II (men)	1	1	1
Electives	3	3	
	19⅓	19⅓	19⅓

Junior Year

	I	II	III
History 221-2-3	3	3	3
Political Science 221-2-3	3	3	3
Sociology 221	3		
Sociology 322		3	
Sociology 351	3		
Sociology 393			3
Political Science 313			3
Sociology 411 (Math. 311)	3		
Sociology 303			3
Electives	3	6	3
	18	18	18

Senior Year

Sociology 491	3		
Sociology 461	3		
History 300's or 400's			3
Sociology 462		3	
Sociology 442		3	
Sociology 450			3
Electives	12	12	12
	18	18	18

Courses in Sociology

Undergraduate

All classes carrying three hours credit will meet three one-hour periods per week unless otherwise designated.

Sociology 211-2-3 are prerequisites for all other Sociology courses.

101-2-3. *Freshman Orientation.* (3) This course is designed to orient the new student in the college community. It presents the aims and objectives of the University and the Department; facilities available; suggestions for an academic and social adjustment; and vocational guidance.

211-2-3. *Introduction to Sociology.* (9) The relationship of people to their physical and cultural surroundings and to each other are emphasized. A systematic conceptual framework is developed that will permit the student to view the social world and its major problems in terms other than common sense.

221. *Anthropology.* (3) The study of human and social origin with emphasis on the development of races and languages; the origin, nature and diffusion of cultures; and a comparison of the principal cultures of the world.

301. *Labor Problems.** (3) Problems of employment and labor considered from the standpoint of the employee, the employer, and the sociocultural environment.

303. *Introduction to Field Study.* (3) This course presents a study of the theory and methods of social research including the questionnaire, the schedule, the interview, case histories, sociograms, sampling, etc.

312. *Recent Labor Legislation.** (3) A study of labor legislation from the Sherman Anti-Trust Law to the present with emphasis on the sociological aspects of the legislation.

313. *Problems of Personnel Management.** (3) A consideration of human relations in industry; the formal and informal structure of industry seen as a social system with its attendant problems of upgrading, absenteeism, foremanship, accidents, unionism, and morals.

322. *The Family.* (3) Principles and problems associated with the organization, disorganization and reorganization of the family to the American and other societies.

323. *Problems of Courtship and Marriage.* (3) A critical approach to problems of courtship, marriage and the family with emphasis on marital choice and adjustment; biological and economic problems; women and the family; child-parent relationships; war and the family.

332. *Social Pathology.* (3) An analysis of the various aspects of personal and social disorganization as they are expressed, not only through abnormal activities, but also through socially approved cultural patterns. This analysis is made in terms of a consistent framework, the central notion of which stresses the unitary nature of the process through which both the normal and abnormal come into being.

351. *Introduction to Social Psychology.* (3) A study of the biological and social basis of human behavior with emphasis on the development of personality and an analysis of the general social setting in which personality development occurs.

393. *Racial and Cultural Relations.* (3) An examination of the problems, relationships and adjustments of racial, cultural and ethnic minorities. Emphasis is placed on the nature of these phenomena as they occur in the American social setting.

400. *Methods of Teaching Social Studies in High Schools.* (3) This course is designed to acquaint the prospective teacher with the most recent trends in the teaching of the social studies in regard to objectives, the selection

*Course approved for graduate credit.

and organization of curricular materials; the selection and utilization of equipment and resources; methods of teaching; and appraisal of the results of teaching.

411. *Statistics.* (3) Identical with Mathematics 311. Measures of central tendency and dispersion, linear and non-linear time series analysis, linear and multiple correlation of attributes, sampling. Prerequisite: Mathematics 131-32-33 or consent of instructor.

412. *Criminology.* (3) Identical with Social Administration 412. The course will include the problems of crime and criminals; the making of the criminal, the theories of crime and punishment; machinery employed in dealing with the criminal, penal and correctional institutions and programs of correction. Case studies and visits to institutions serve as aids in enriching understanding.

421. *Population Problems.** (3) Theories and trends in population growth, the political and economic implication of these trends at regional, national, and international levels.

441. *Problems of Rural Life.** (3) A study of social problems in the rural community. Special emphasis will be placed on the southern area of the country. Programs of social actions relative to community reorganization will be studied.

442-3. *Rural Sociology.* (6) The structure and dynamics of rural life; technology and social changes in the rural community. A study of rural life.

450. *Senior Project Writing.* (3).

451. *Juvenile Delinquency.** (3) Identical with Social Administration 451.

452-3. *Sociology of Child Development.* (6) A study of the development of the child with emphasis upon a distinct sociological approach to behavior in relation to the family, play groups, school situations, the community and larger social institutions. The course is designed to acquaint prospective teachers and majors in sociology with the influences of social institutions upon the child's total development. Registration limited. Admission only with the approval of the instructor.

461. *Urban Sociology.* (3) A study of the growth of urbanism, its spatial and communicative extension into rural areas, and its impact upon the economy, the values, and the social organization of communities. The spatial structure and land use patterns of urban and fringe areas and their implications for social service and police administration.

462. *Social Institutions.* (3) A presentation of the theories relating to the development of the major social institutions, their values and changes in satisfying the basic needs of man.

463. *Community Organization.** (3) Identical with Social Administration 463.

471. *Sociology of Latin America.** (3) A study of the population, social institution, culture and social life in Latin America.

*Course approved for graduate credit.

472. *Advanced Social Psychology.** (3) An examination of the major points of view in social psychology including those of Mead, Dewey and Cooley; Gestalt Psychology, Behaviorism and Psychoanalysis. Prerequisite: 353 and consent of instructor.

473. *Theory and Methods of Personality Study.** (3) This course is designed to survey the field of Experimental Social Psychology. Methods in psychiatric therapy, projective methods (Rorschach and Thematic Apperception Tests), factor analysis, rating scales, frustration theory and techniques, levels or aspiration and techniques are emphasized. Prerequisite: 353 and consent of instructor.

482. *Collective Behavior.** (3) This course treats a wide variety of collective groupings and movements; their origin, organization, membership, leadership and dissolution. It includes an analysis of such social phenomena as institutions, formalized and congenial groupings, audiences, publics, crowds, mobs, fads, and fashions, and mass movements, such as social unrest and reform.

491. *History of Sociological Theory.* (3) This course presents the major sociological theories as represented by Comte, Spencer, Durkheim, Weber, Simmel, Sumner, et al, including those of the contemporary period.

Graduate Courses

Regulations governing graduate study in the Department of Sociology are identical with those of the University. In addition the Department reserves the right to give a candidate both the oral and written examination.

511. *Methods in Social Research.* (3) This course is designed to acquaint the student with the basic principles of social research such as those concerned with the scientific measurement of attitudes; social survey, case study and conference methods; the statistical, and the historical and the comparative methods of scientific investigation.

512. *Thesis Writing.* (3).

521-2-3. *Principles of Sociology.* (9) A course designed to acquaint the student with general sociological principles such as: human nature, social forces, social processes, social products, social control and social change.

531. *Social Organizations.* (3) A consideration of the development and functions of our major forms of social organizations, their interrelationships and sociological importance.

532. *Social Disorganization.* (3) An analysis of changing aspects of our social life and the problems created for the individual. Special emphasis upon the disorganizing effects of rapid and uncorrelated cultural changes.

533. *Problems of Minority Groups.* (3) The problems of World and American minority groups; survey of contemporary race ethmic conflicts; international post-war immigration policies and minority problems.

541. *History of Sociological Theory.* (3) A course devoted to the critical analysis of sociological theories from primitive times down to the present day; particular attention to the social contributions made by Comte, Spencer, Ward, Giddings, and others.

542. *Social Psychology.* (3) A study of the psychological processes in Collective Behavior; group solidarity and disintegration, public opinion, race prejudice, class conflict, nationalism and war.

*Approved for graduate credit.

543. *Contemporary Social Problems.* (3) A study of the social problems prevalent in urban and rural life which are of such a nature that they become the concern of the general public.

551. *Population and Society.* (3) Theories of population; rates of population growth; factors which control the growth of population such as: food supply, standards of living, birth control, war and modern industry and existing conditions in different countries.

552. *Rural Sociology.* (3) A study of rural society with special emphasis upon the dynamic and functional aspects of rural life.

553. *The Community.* (3) A study of rural and small communities; structure and functions, processes of organization and changes.

SCHOOL OF EDUCATION

HILLIARD A. BOWEN, *Chairman*

FACULTY

HILLIARD A. BOWEN, *Professor of Education and Chairman of the School of Education.*

LUA S. BARTLEY, *Professor of Health and Physical Education.*

MONTRAVILLE I. CLAIBORNE, *Professor of Psychology and Head of the Department of Psychology.*

OLIVER W. CRUMP, *Professor of Education and Consultant on In-Service Teacher Education.*

WILLIAM L. CRUMP, *Professor of Business Administration and Education and Coordinator of the Area of Business.*

LOIS H. DANIEL, *Professor of Library Service and Head of the Department.*

HENRY A. KEAN, *Professor and Head of the Department of Health and Physical Education.*

EUNICE S. MATTHEW, *Professor of Supervision and Consultant on In-Service Teacher Education.*

F. J. D. MCKINNEY, *Professor of Education and Chairman of Admissions.*

HERBERT F. MELLS, *Professor of Music and Head of the Department.*

ROBERTA PEDDY, *Professor of Education.*

FRANCES A. SANDERS, *Professor of Elementary Education and Head of the Department.*

FRANCES E. THOMPSON, *Professor of Art and Head of the Department.*

NATHANIEL CRIPPENS, *Associate Professor of Administration and Consultant on In-service Teacher Education.*

FRANK GREER, *Associate Professor of Instrumental Music and Band Director.*

JOHNN FULLMORE, *Associate Professor of Business Administration.*

LEWIS R. HOLLAND, *Associate Professor and Head of the Department of Business Administration.*

THOMAS H. HUGHES, *Associate Professor of Health and Physical Education.*

CHARITY MANCE, *Associate Professor of Education and Psychology and Consultant on In-service Teacher Education.*

M. CLAY PINKSTON, *Associate Professor and Head of the Department of Business Education.*

COLLYE L. RILEY, *Associate Professor of Library Service.*

ADOLPH T. SCOTT, JR., *Associate Professor and Head of the Department of Economics.*

JOHN H. SHARPE, *Associate Professor of Music.*

DERRYCK WEAVER, *Associate Professor of Business Administration and Business Manager.*

CLARENCE CASH, *Assistant Professor of Health and Physical Education.*
JORDAN D. CHAVIS, *Assistant Professor of Music.*
J. C. COFFEE, *Assistant Professor of Health and Physical Education.*
CLINTON D. CROOKS, *Assistant Professor of Health and Physical Education.*
CECILLE CRUMP, *Assistant Professor of Business Education.*
HOWARD GENTRY, *Assistant Professor of Health and Physical Education.*
EDDIE T. GOINS, *Assistant Professor of Voice.*
CALLIE LENTZ, *Assistant Professor of Office Administration.*
MARIE STRANGE, *Assistant Professor of Music.*
CASS F. L. TEAGUE, *Assistant Professor of Business Administration and Executive Aide to the President.*
CHARLIE F. TILLMAN, *Assistant Professor of Education.*
LEONA B. WILKINS, *Assistant Professor of Music.*

BARBARA BRYANT, *Instructor in Health and Physical Education.*
MILDRED CATER, *Instructor in Office Administration.*
INEZ M. CRUTCHFIELD, *Instructor in Health and Physical Education.*
MILDRED K. GAINES, *Instructor in Business Administration.*
CARRIE M. GENTRY, *Instructor in Health and Physical Education.*
IRA GENTRY, *Instructor in Secondary Education.*
MATTIE GORDON, *Instructor in Office Administration.*
LAURA M. HOLLAND, *Instructor in Psychology.*
MILDRED S. HURLEY, *Instructor in Elementary Education.*

MARY L. JACKSON, *Instructor in Office Administration.*
VELMA S. LOWE, *Instructor in Library Service.*
PATRICIA RAE MARSHALL, *Instructor o fPiano.*
MARK MCCANN, *Instructor in Economics.*
DOROTHY C. NASH, *Instructor in Psychology.*
JASPER W. PATTON, *Instructor of Piano.*
CAMILLE ROBINSON, *Instructor of Office Administration.*
WILLIAM STINSON, *Instructor of Office Administration.*
MAURINE STOVALL, *Instructor of Violin and Theory.*
WILHELMENA TAYLOR, *Instructor of Music Appreciation.*
HELEN TEAGUE, *Instructor in Secondary Education.*
PEGGY WILLIAMS, *Instructor in Health and Physical Education.*

ELLIOTT CALDWELL, *Laboratory Assistant in Art.*
HIRAM V. GORDON, *Laboratory Assistant in Art.*
LOUISTINE F. CROCKETT, *Laboratory Technician in Physical Education.*

OBJECTIVES AND FACILITIES

The School of Education has as its principal objective the training of teachers, supervisors and administrators for the public schools of Tennessee. It also has the responsibility for research in the problems of education and for field work for teachers and administrators in cooperation with the Division of Negro Education of the State Department of Education.

The School is organized with nine departments: (1) Art; (2) Elementary Education; (3) Health and Physical Education; (4) Music; (5) Library Service; (6) Psychology; (7) Business Education; (8) Business Administration; (9) Economics, and offers several curricula leading to the degree of bachelor of science in education. In addition special curricula or programs of training are provided in agricultural education, home economics education, and industrial education in cooperation with the School in which students in these subjects are enrolled.

The School of Education uses all facilities available on the university campus. It depends upon the several departments for the basic subject matter necessary as a background for professional courses in education.

In addition, the School of Education has cooperative agreements with the county schools of Davidson County and the city schools of Nashville under which certain schools are made available for teacher training.

STUDENT TEACHING

I. That students enrolling for student teaching must be classified as seniors, i.e. having 144 or more quarter hours.

A. Scholastic average in professional courses and major and minor subjects of 2.5.

B. Candidates for student teaching should be required to show an acceptable degree of proficiency on reading and writing tests devised or selected by the elementary and secondary committees, a quarter-preceding the practice-teaching courses.

C. That no student classified on *probation* be admitted to method and practice teaching courses.

D. Sequence of courses prerequisite to practice teaching:
   1. On the secondary level
      a. Three hours of general psychology
      b. Educational psychology
      c. Principles of secondary education
      d. The high school curriculum
   2. On the elementary level
      a. Three hours of general psychology
      b. Three hours of tests and measurements
      c. Three hours of educational psychology
      d. Education 231, 232, 233 and 481

E. That all majors in elementary education *must* do practice teaching (actual performance) under supervision. This applies to "in" and pre-service teachers.

DEPARTMENT OF ART

FRANCES E. THOMPSON, *Head*

The Department of Art with emphasis on Art Education has as its objectives to guide students in the understanding of art as it appears in everyday living, and its effect upon them; to stimulate students to express themselves in various media as a part of their cultural growth; and further, to understand the relationship of art to other fields of learning; to recognize and understand its place and its function in the school curriculum.

The department offers a major in Art Education leading to the degree of Bachelor of Science in Art Education.

A major in Art Education for teaching on the elementary school level: Art 101-2-3; Art Education 201-2-3; Art Crafts 241, 300, 301; Stage Crafts 422; Art 121-2-3; Art History 401-2—a total of 45 hours.

A major in Art Education for teaching on the secondary level: The same as the foregoing except Art Education 201, 202 and 203 may be omitted with the addition of Art History 403—Painting 221, 222, 223.

A minor in Art consists of 27 hours in Art. Art 101-2-3; Art Education 201, 202; Art 121-2-3 and an elective.

Courses are offered in design and the application of design to crafts, and in related arts serviceable to Home Economics students.

The curriculum has for its primary purpose the education and training of teachers, supervisors, and directors of Art Education in elementary and secondary schools and in higher education. Further, it has as its purpose to discover students who find the arts most interesting to them and guide them to a program which will prepare them for professional study in the graphic and plastic arts. Required basic training in educational methods is provided through courses offered by a considerable number of the other departments of the School of Education.

CURRICULUM FOR ART EDUCATION MAJORS

Freshman

	Credits		
	I	II	III
English 101, 102, 103	3	3	3
Mathematics 101		3	
Music, Intro to 101, 102		3	3
Introduction to Education	3		3
Genl. Sci. 111, 112, 113	3	3	3
Art Educ. 101, 102, 103	3	3	3
History 101, 102, 103	3	3	3
Phy. Ed. 101, 102, 103 (men)	⅓	⅓	⅓
Phy. Ed. 101, 102, 103 (women)	1⅓	1⅓	1⅓
Air Science 151, 152, 153	1	1	1
	19⅓	19⅓	19⅓

Sophomore

	Credits		
	I	II	III
English 201, 202, 203	3	3	3
Psychology 211, 243, 263 (General)	3	3	3
Sociology 211, 212, 213	3	3	3
American History 201, 202, 203	3	3	3
Art Education 201, 202, 203	3	3	3
Spanish or French 101-2-3	3	3	3
Phy. Ed. 201, 202, 203 (men)	⅓	⅓	⅓
Phy. Ed. 201, 202, 203 (women)	1⅓	1⅓	1⅓
Air Science 251, 252, 253	1	1	1
	19⅓	19⅓	19⅓

Junior

	Credits		
	I	II	III
English 203, 312	3	3	
Economics 211, 212	3	3	
Education 341			3
Sociology 322	3		
Stage Design 421		3	
Stage Lighting 423			3
Design 131			3
Psychology 253, 311	3		3
Pottery crafts 301			3
Art 121, 122, 123	3	3	3
Stagecraft 422		3	
Art Crafts 241, 300	3	3	
	18	18	18

Senior

	Credits		
	I	II	III
Art History 401, 402, 403	3	3	3
Education 481, 342 Childhood Education Prin. of Secondary Educ.	3	3	
Art Education 411, 412 (Methods)		3	3
Painting 221, 222, 223	3	3	3
Typing 211, 212, 213	3	3	3
Project Performance	3		
Electives	3	3	3
	18	18	18

COURSES IN ART

101-2-3. *Introduction to Public School Art.* (9) An overview of art expression. Art in everyday living: home, school and community. Handcrafts: clay modeling, pottery, paper and cardboard construction, hand weaving, small metal projects, leather construction and tooling, work with salvaged materials.

131. *Design.* (3) A course in principles of structural and decorative design with creative application: printing with blocks, sticks and other devices; stenciling; carving; modeling; casting; leather construction; tooling, carving; staining; metal projects, raffia projects, etc. Prerequisite: Art 101.

201-2. *Art Education.* (6) Manuscript Writing and Representation. Cultivation of appreciation for children's representation performance both two and three dimensional at each level of growth. Experience with devices used to aid in the release of creative impulses of elementary school children. Experiences which will aid in the evaluation of children's art performance. Prerequisite: Art 101.

203. *Art Education.* (3) Lettering, poster design, representation. Free brush work, block printing, spatter work, cut paper form. Wire construction, paper sculpture, clay modeling, papier mache.

241. *Hobbycrafts.* (3) A craft program suitable for recreation centers, summer camps, scouts, vacation bible schools, and individuals seeking a hobby. Principles of design and color are applied in construction of usable articles made from salvaged materials such as leather from old handbags, plastics umbrella handles, stockings, cardboard boxes, string, grass sacks, etc., and acorns, nuts, grasses, cotton, seeds, shucks, shells.

301. *Pottery Crafts.* (3) A beginner's course in hand built clay construction: piece and coil methods. Decoration in low relief and intaglio.

302-3. *Clay Modeling.* (6) Projects in the round with emphasis on creative design and pleasing form.

411-12. *Art Education.* Modern Philosophy and Practices. Materials, organization and development of the Art Education Program.

401. *Art History.* (3) A survey course from primitive man to fall of Roman Empire.

402. *Art History.* (3) A survey course of Christian Art and the Art of the Renaissance. Prerequisite: Art History 401.

403. *Art History.* (3) The transition from the Art of the Renaissance to the art of the modern world.

121. *Fundamentals of Drawing.* (3) Form, composition, color. Experience in charcoal, chalks, water colors. Laboratory.

122. *Drawing and Painting.* (3) Special relationships shown by means of line, form, color and value according to basic principles of composition. Laboratory.

123. *Drawing and Painting.* (3) Continuation of drawing and painting with emphasis on good form, light and shade. Laboratory.

221-2-3. *Painting in Oils.* (9) Still life composition, outdoor composition. For Department offerings in related arts, see Home Economics Program.

DEPARTMENT OF BUSINESS ADMINISTRATION

LEWIS R. HOLLAND, *Head*

The curricula in this Department are offered to those students who are planning for careers in accounting, insurance, labor relations, marketing, retailing, real estate, salesmanship, the teaching of business subjects and other fields of business. These courses are designed to prepare students for leadership in the area of their choice.

REQUIREMENTS FOR THE DEGREES

The department offers both the bachelor of arts and the bachelor of science degrees. The bachelors degree is awarded for the attainment of knowledge and skills in the fields of business and related fields demonstrated to the satisfaction of the university.

A minimum of three full quarters of residence must be completed in the Department.

A department program of study must be followed. The nature and extent of this program, in general, depends upon the student's previous training and experience. Normally, one third must be in the field of concentration, one third in the related fields, and one third electives.

Evidence of satisfactory completion of at least forty-five quarter hours in the field of Business Administration with a major emphasis in accounting, finance, or marketing, twenty-seven hours of which must be completed in courses on the 300 and 400 level.

Satisfactory completion of a minor with at least 18 hours in one of the following fields: Business Education, Geography, History, Economics, Sociology, or Political Science.

UNDERGRADUATE MINOR IN BUSINESS ADMINISTRATION

Undergraduate minors are required to complete 18 hours on the 300 and 400 level in addition to Accounting 211, 212, 213.

Students who intend to teach take note of the requirements for teacher certification as listed under the Department of Secondary Education.

GRADUATE WORK IN BUSINESS ADMINISTRATION

A student may obtain the M.S. degree in Business Administration upon the satisfactory completion of forty-five quarter hours, composed of not less than twenty-seven hours in a major subject, and not less than nine nor more than eighteen in a minor subject. The prerequisite for a graduate major in Business

Administration usually amounts to an undergraduate major or its equivalent. See the Graduate Division Catalog.

Graduate students may obtain a minor in Business Administration under the requirements conforming to the regulations of the Graduate School which include: (1) The successful completion of eighteen quarter hours of graduate work, or (2) a double minor may be obtained with nine hours of graduate work in Business Administration and nine hours in a related field.

GENERAL CURRICULUM FOR FRESHMEN AND SOPHOMORES BUSINESS ADMINISTRATION STUDENTS

Bachelor of Science Degree

Freshman Year

Name of Course	*Quarter Hours of Credit* I	II	III
English 101-2-3	3	3	3
Science 111-12-13	3	3	3
Math. 171-72-73	3	3	3
History 121-22-23	3	3	3
O A Typing 211-12-13	2	2	2
Bus. Orient. 101-2-3	1	1	1
Phy. Educ. 101-2-3			
(Men)	⅓	⅓	⅓
(Women)	1⅓	1⅓	1⅓
Air Science 151-2-3	1	1	1
	16⅓	16⅓	16⅓

Sophomore Year

Name of Course	*Quarter Hours of Credit* I	II	III
English 201-2-3	3	3	3
Economics 211-12-13	3	3	3
Accounting 211-12-13	3	3	3
Sociology 211-12-13			
or			
Pol. Sci. 221-22-23	3	3	3
Eco. Geog. 271-72-73	3	3	3
Phy. Educ. 201-2-3			
(Men)	⅓	⅓	⅓
(Women)	1⅓	1⅓	1⅓
Air Science 251-2-3	1	1	1
	16⅓	16⅓	16⅓

Bachelor of Arts Degree

Freshman Year

Name of Course	*Quarter Hours of Credit* I	II	III
English 101-2-3	3	3	3
Science (Biol.			
Chem. or Phys.)	4	4	4
Math. 131-32-33	3	3	3
History 121-22-23	3	3	3
French or German			
101-2-3	3	3	3
Bus. Orient. 101-2-3	1	1	1
Phy. Educ. 101-2-3			
(Men)	⅓	⅓	⅓
(Women)	1⅓	1⅓	1⅓
Air Science 151-2-3	1	1	1
	18⅓	18⅓	18⅓

Sophomore Year

Name of Course	*Quarter Hours of Credit* I	II	III
English 201-2-3	3	3	3
Economics 211-12-13	3	3	3
Accounting 211-12-13	3	3	3
French or German			
201-2-3	3	3	3
Sociology 211-12-13			
or			
Pol. Sci. 221-22-23	3	3	3
Phy. Educ. 201-2-3			
(Men)	⅓	⅓	⅓
(Women)	1⅓	1⅓	1⅓
Air Science 251-2-3	1	1	1
	16⅓	16⅓	16⅓

Curriculum for Majors in Business Administration

Junior Year

Name of Course	Quarter Hours of Credit I	II	III
Accounting 311-12-13	3	3	3
Psychology 221-22-23	3	3	3
Statistics 311-21-22	3	3	3
English 321			3
Bus. Law 311-12-13	3	3	3
Finance 331-2	3	3	
Marketing 311-12	3	3	
	18	18	15

Senior Year

Name of Course	Quarter Hours of Credit I	II	III
Finance 312-13		3	3
Marketing 321-22-23	3	3	3
Sociology 301-2		3	3
Senior Proj. 450	3		
Personnel Adm. 424-5	3	3	
Finance 422-3	3		3
Electives	3	3	3
	15	15	15

Curriculum for Majors in Accounting

Junior Year

Name of Course	Quarter Hours of Credit I	II	III
Statistics 311-21-22	3	3	3
Business Law 311-12-13	3	3	3
Accounting 311-12-13	3	3	3
English 321		3	
Accounting 323	3		
Psychology 221-22-23	3	3	3
Marketing 311-12	3		3
Finance 331-32		3	3
	18	18	18

Senior Year

Name of Course	Quarter Hours of Credit I	II	III
Accounting 421-2-3	3	3	3
Accounting 411-12	3	3	
Accounting 462			3
Statistics 413			3
Finance 422		3	
Marketing 421-22	3	3	
Accounting 461 (Systems)			3
Senior Proj. 450	3		
Personnel Adm. 424-25	3	3	
Electives	3	3	6
	18	18	18

Curriculum for Majors in Marketing

Junior Year

Name of Course	Quarter Hours of Credit I	II	III
Economics 311	3		
Marketing 321-22		3	3
Salesmanship 313			3
Retailing 321-22-23	3	3	3
Psychology 221-22-23	3	3	3
Economics 312		3	
Finance 331-32	3	3	
Statistics 311-21-22	3	3	3
English 321	3		
Sociology 301			3
	18	18	18

Senior Year

Name of Course	Quarter Hours of Credit I	II	III
Market Res. & Anal. 413		3	
Advertising 411-12	3	3	
Marketing 421-22		3	3
Real Estate 422		3	
Personnel Adm. 424-25	3	3	
Sociology 312	3		
Statistics 413			3
Insurance (Finance) 423	3		
Senior Prj. 450	3		
Accounting 462 or Industrial Mktg. 411			3
Electives	3	3	6
	18	18	18

Accounting

211-12-13. *Elements of Accounting.* (9) A basic course in bookkeeping, accounting theory and practice. A prerequisite to all other courses in accounting. Two one-hour laboratory periods.

241-2. *Accounting for Engineers.* (6) A course in fundamentals of accounting used in engineering work. A course in elementary economics or registration therein is a prerequisite.

311-12-3. *Intermediate Accounting.* (9) Theory and practice relating to the theory of the various balance sheet accounts, working papers, and statements. Two one-hour laboratory periods. Prerequisite: Accounting 213.

323. *Advanced Accounting Problems.* (3) Theory and problems in advanced topics, including partnership problems, insolvency, estates and trusts and consolidated statements. Prerequisite: Accounting 312.

421-2. *Cost Accounting.* (6) Principles of factory and distributive cost accounting. Procedures and contracts are emphasized through the medium of a wide variety of laboratory problems. Two one-hour laboratory periods. Prerequisite: Accounting 323.

423. *Auditing Procedures.* (3) A course in the principles of auditing which includes a critical examination of financial statements. The text materials are amplified by special problems. Only advanced students in accounting are admitted.

411-12. *Federal Tax Accounting.* (6) A course designed to provide a comprehensive explanation of the Federal tax structure and to provide training in the application of tax principles to specific problems. Prerequisite: Accounting 323.

461. *Accounting Systems.* (3) A study of the problems involved in the design and installation of accounting systems, including systematizing the clerical department of a business. Prerequisite: Accounting 323.

462. *Comptrollership.* (3) A study of the fiscal functions assigned the comptroller in a large enterprise in connection with construction, control, and interpretation of accounts for internal use. Prerequisite: Accounting 323.

Marketing

Nine quarter hours in general economics are prerequisite to all courses in marketing.

311-12. *Principles of Marketing.* (6) A general survey of the marketing structure as it exists and functions. Problems involving marketing procedures, policies, and techniques are considered.

313. *Salesmanship.* (3) A study of the basic principles underlying the sales process and their application to the problems of salesmen. Prerequisites: Psychology 221-22.

321. *Principles of Retailing.* (3) A basic survey course for students interested in retailing. Special consideration is given to store organization, operation, and current distribution problems.

322. *Retail Buying and Merchandise Control.* (3) A detailed study of all aspects of buying for retail stores including such factors as economics of buying, determination of needs, sources of supply, selection of merchandise and trade techniques.

323. *Retail Selling.* (3) Special application of the principles of selling to the field of retailing. Opportunity is provided for demonstration sales and study of practical selling problems.

411-12. *Advertising Principles.* (6) A study of the economics of advertising, the use of research in advertising, analysis of current advertising policy, and methods and procedures in selecting appeals and media, writing copy, and constructing layouts. Prerequisites: Marketing 311-12.

413. *Market Research and Analysis.* (3) A study of research method and procedures, analysis of published sources of data, preparation of questionnaires, and the collection, tabulation, and interpretation of data. Prerequisites: Marketing 311-12, and Statistics 321-22.

421-22. *The Small Business Enterprise.* (6) A course designed to give the student the basic principles and practical experience in the organization and operation of retail enterprises of various sizes and in various lines. Prerequisites: Marketing 311-12.

424. *Industrial Marketing.* (3) A comprehensive study of the methods and principles involved in the economic distribution of raw materials, semi-manufactured goods, installations, equipment, manufactured parts, and supplies. Prerequisites: Senior standing and consent of the instructor.

423. *Retail Store Management.* (3) A consideration of the location, organization, and operation of retail enterprises of various sizes and in various lines. Prerequisites: Marketing 311-12.

Business Law

311-12-13. *Business Law.* (9) Fundamental principles of law most frequently involved in business transactions, including contracts, sales, partnerships, master and servant, principal and agent, corporations, negotiable instruments, property, bailments, and common carriers, with the view of enabling businessmen to avoid litigation.

Finance

311. *Banking.* (3) A general survey of credit and credit instruments and the activities and policies of financial institutions, such as commercial and savings banks, the Federal Reserve System, investment banks, and stock exchanges.

331-32. *Business Organization and Finance.* (6) A study of the various types of business organizations and management with special emphasis on their financing by means of stocks, bonds, and other instruments of finance. The work of promotion, underwriting securities, internal financial management, reorganization and receivership are also treated.

422. *Real Estate.* (3) A study of land economics, real estate contracts, deeds, and mortgages, values of leases and leaseholds; valuation of real estate; questions of title and title insurance, brokerage, and Tennessee Law.

423. *Life, Accident and Health Insurance.* (3) This course consists of a study of forms and kinds of policies, rate making, keeping of reserves and surpluses, methods of settlement, and government regulations.

Statistics

321. *Elementary Business Statistics.* (3) This course consists of a study of statistical sources and collection of data, the presentation of data in tables, charts, and reports; the computation of ratios and percentages, averages, dispersion, and sampling errors. Prerequisite: Statistics 311.

322. *Business Statistics.* (3) This course covers statistical theory and methods directly applicable to the solution of business and economic problems. Major topics: index numbers; analysis of time series; simple correlation. Prerequisite: Statistics 321.

413. *Statistical Analysis.* (Business Trends and Business Cycles.) (3) Methods of measuring business trends and the length and intensity of cyclical change in business activity. Analysis of the factors determining business fluctuations and methods of forecasting such changes. Interpretation of statistical indices of current business conditions. One laboratory period, two hours. Prequisite: Statistics 321-22.

Personnel Administration

423-4. *Personnel Administration.* (6) An examination of the principles and methods of efficient labor management in the maintenance of harmonious relationships between management and employees, personnel organization and procedures, employee relationships.

Graduate Courses

BA 511. *Research Methods and Techniques.* (3) A survey of research methods in the field of business, including a study of source materials and evolution of typical research studies. Required of all students working for the master's degree in the Department of Business Administration.

BA 512. *Research and Thesis.* (3) A continuation of BA 511, and completion of thesis.

Accounting

BA 521. *Seminar in Accounting Theory.* (3) A study of accounting concepts in the light of present conditions. Bases underlying accounting policy, types of economic society, statutory requirements, objectives of accounting, and unsettled problems. Prerequisite: Graduate standing.

BA 522. *Seminar in Accounting Theory.* (3) A continuation of Accounting 511 with emphasis on current problems and contemporary developments of accounting theory as exemplified by the accounting research bulletins of the American Institute of Accountants, recent monographs, statements of the American Accounting Association, and other current periodicals and materials. Prerequisite: Graduate standing.

BA 523. *Seminar in Accounting Theory.* (3) A continuation of Accounting 512 with emphasis on individual projects assigned to each student. Such projects will be assigned in field wherein it is deemed the student's accounting background needs the most strengthening. Projects may be assigned in any of the specialized fields of accounting. Prerequisite: Graduate standing.

BA 524. *The Development of Accounting Theory and Practice.* (3) The evolution and development of record keeping from early times to the present. A study of the growth of accounting theory and practice in response to changing trends in business organization and practice. Prerequisite: Graduate standing.

Marketing

Prerequisites for a major: Twenty-seven hours in the social sciences including Economics 211-12-13, or equivalent and Marketing 311-12.

BA 531-32-33. *Seminar in Marketing.* (9) Methods of research and critical analysis as applied to selected problems in the field of distribution.

BA 534. *Research in Retailing.* (3) This course permits students majoring in marketing to undertake special research problems in their particular field of specialization. Includes consideration of basic research principles and their practical application to retailing.

Finance

BA 541-42-43. *Finance Seminar.* (3) This course will be adapted to the needs and interests of the students in the fields of corporation finance, banking, insurance, and real estate. Particular emphasis will be given to current developments in these fields.

DEPARTMENT OF BUSINESS EDUCATION

MARY CLAY PINKSTON, *Head*

The program of instruction in the Department of Business Education prepares teachers of business subjects and professional secretaries. Two curricula of instruction are offered: program of work leading to the B.S. degree in teacher education; and program of work leading to the B.S. degree in office administration (Secretarial Science).

REQUIREMENTS FOR DEGREE

A total of forty-five quarter hours in Business Education and Office Administration courses, over and above the beginning courses in typewriting and Business Orientation, are required for majors in the Department of Business Education, leading toward the B.S. degree. Students following the program of study for office administration will also have a minor in English and Business Administration. Students following the program of study for teacher education may obtain certification in business subjects and two other teaching areas of their choice through their electives.

MINOR

The Department of Business Education offers a minor to students in other divisions, requiring 27 quarter hours in Business Education and Office Administration courses, over and above beginning typewriting. The minor may be in secretarial training or teacher education. Advisers in the Department should be consulted early in the four-year college period concerning a course of study.

SHORT PROGRAMS OF TRAINING

Short programs of training, not leading to a degree, may be followed by those unable to remain at the University for the twelve quarters needed for graduation. No academic credit will be given for the courses. This training is designed on two-year terminal basis leading to a certificate of proficiency in the chosen curricula: Curriculum A—Secretarial Science; Curriculum B—General Clerical and Office Machines; and Curriculum C—Clerk-typist.

PROGRAM OF STUDY

B.S. DEGREE IN BUSINESS EDUCATION

(Teacher Education)

Freshman Year

Name of Courses	Quarter Hours Credit I	II	III
English 101-2-3	3	3	3
Science 111-12-13	3	3	3
Math 171-2-3	3	3	3
History 121-2-3	3	3	3
OA 211-2-3 Typing	3	3	3
BE 101-2-3 Bus. Orientation	2	2	2
Military Science 151-2-3	1	1	1
Physical Educ. 101-2-3 (Men)	⅓	⅓	⅓
Physical Educ. 101-2-3 (Women)	1⅓	1⅓	1⅓
	18⅓	18⅓	18⅓

Sophomore Year

Name of Courses	Quarter Hours Credit I	II	III
English 211, 371, 321	3	3	3
Economics 211-12-13	3	3	3
Geog. 271-72-73	3	3	3
OA 204-5-6 Shorthand	3	3	3
OA 221-201-301	3	3	3
Psych 211-243 263	3	3	3
Physical Educ. 200's (Women)	1⅓	1⅓	1⅓
Military Science 251-2-3	1	1	1
Physical Educ. 200's (Men)	⅓	⅓	⅓
	19⅓	19⅓	19⅓

Junior Year

Name of Courses	Quarter Hours Credit I	II	III
BA 211-12-13 Acct.	3	3	3
OA 304-5-6	3	3	3
Ed 341-42	3	3	
BE 400			3
BA 311-12-13 Business Law	3	3	3
History 201-2-3	3	3	3
Sociology 211-12-13	3	3	3
	—	—	—

Senior Year

Name of Courses	Quarter Hours Credit I	II	III
*Block System for student teaching, to be taken either quarter:			
BE 411-12-13	9		
BE 471-2 or 3	6		
BE 450/403	3		
	18		
Other two quarters:			
OA 434			3
BA 331-32		3	3
Math 311		3	
OA 401-2		3	3
Speech 201-202		3	3
Electives		6	6
		18	18

*During the senior year, teacher-training students in Business Education will register one quarter for the Block System of student teaching (not more than ten each quarter). No other courses will be taken except the ones listed in the block plan. Students will plan to leave the campus for a period of six weeks' practice teaching in one of the practice teaching areas of the state.

B.S. Degree in Business Education

(Secretarial Training)

Freshman Year

Name of Courses	Quarter Hours Credit I	II	III
English 101-2-3	3	3	3
Sci 111-12-13	3	3	3
Math 171-2-3	3	3	3
Hist 121-2-3	3	3	3
OA 211-212-213	3	3	3
BE 101-2-3	2	2	2
PE 101-2-3 (Women)	1⅓	1⅓	1⅓
Military Sci (Men)	1	1	1
PE 101-2-3 (Men)	⅓	⅓	⅓
	18⅓	18⅓	18⅓

Sophomore Year

Name of Courses	Quarter Hours Credit I	II	III
English 211, 321, 371	3	3	3
Economics 211-12-13	3	3	3
OA 221-201-301	3	3	3
Geog 271-2-3	3	3	3
OA 204-5-6 Shorthand	3	3	3
Speech 201-202	3	3	
Applied Art Educ. 203			3
Physical Educ. 200's (Women)	1⅓	1⅓	1⅓
Military Sci 251-2-3	1	1	1
Physical Educ. 200's (Men)	⅓	⅓	⅓
	19⅓	19⅓	19⅓

Junior Year

Name of Courses	Quarter Hours Credit I	II	III
OA 304-5-6	3	3	3
BA 211-2-3 Acct.	3	3	3
English 322-23, 453	3	3	3
BA 311-12-13 Bus. Law	3	3	3
Sociology 211-12-13	3	3	3
Electives	3	3	3
	18	18	18

Senior Year

Name of Courses	Quarter Hours Credit I	II	III
BA 331-2 Bus Organization	3	3	
OA 434 Off. Mang.			3
OA 401-2-3	3	3	3
English 301-2-3 Journalism	3	3	3
BE 450 Senior Project	3		
Ec. 312 Banking			3
Math 311 Statistics	3		
Library Sci 211		3	
Electives	3	6	6
	18	18	18

During the senior year, senior students will be prepared to work in offices on and off the campus to gain practical experience in the field of secretarial training. A cooperative training program may be planned with the Department Head.

Description of Courses

Business Education

101-2-3. *Orientation to Business.* (6) A guidance, business and library orientation course for freshmen and new students. Includes orientation to the University, to the area of business and a survey of library resources and techniques.

400. *Principles of Business Education.* (3) A study of the basic principles and trends in business education. Topics include the purposes and relationships of business education, curriculum evaluation and current problems in the field.

411. *The Teaching of Typewriting and Shorthand.* (3) Methods of teaching for experienced and prospective teachers of typewriting, shorthand, and related office practice. Prerequisites: Education 342, Psychology 263, BE 400.

412. *Teaching the Social Business Subjects.* (3) Methods of classroom procedure in the teaching of general business subjects, business law, business organization, elementary economics, bookkeeping, and other business subjects.

413. *Curriculum Construction in Business Education.* (3) Aims, principles, practices, and problems involved in the construction of business curricula for the various types of educational institutions in which business subjects are taught.

450. *Senior Project Writing.* (3) A course designed to aid the senior student in writing the project required for graduation.

471-2. *Observation and Practice Teaching in Shorthand and Typewriting.* (6) Student teaching in the field, in an accredited high school, in shorthand and typewriting. Senior students only. Offered in the Block Plan. Prerequisites: BE 411. Fifteen hours maximum load.

Graduate Courses

501. *Improvement of Instruction in Shorthand and Typing.* (3) For experienced and prospective teachers of typewriting, shorthand, and related office practice. Materials of instruction available to teachers are presented and methods of developing original materials are considered and applied through lectures, demonstrations, readings, and reports.

502. *Improvement of Instruction in Office Practice.* (3) The organization of materials and records used in office practice and office machines courses is studied. Course objectives: teaching techniques, achievement standards, pupil, curricula, and testing problems are critically evaluated. Concurrently, the ability to operate the more common business machines is developed.

503. *Improvement of Instruction in Bookkeeping, Accounting and Related Subjects.* (3) Important problems and procedures in the mastery of bookkeeping and related office knowledges and skills. Materials, tests, standards, and teaching procedures in bookkeeping machines, and other office procedures. Teaching problems of students are emphasized.

504. *Teacher Training in Business Education.* (3) The improvement of teacher training programs for Business Education: recent trends; significant problems; suggested training patterns, and teacher aids and materials. For supervisors of Business Education programs in higher institutions of learning.

Courses in Organization, Administration and Supervision

521. *Current Problems in Business Education.* (3) Significant problems as evidenced by the study and evaluation of the current literature are considered. The course develops a better understanding of the underlying factors of business education problems, enabling the student to deal with them more effectively. Particular attention is given to specific problems of members of the class.

522. *Tests and Measurements in Business Education.* (3) Study of recent tests in commercial education; achievement, instructional predictive, and diagnostic. Evaluation and rating of tests; construction of objective tests.

523. *Guidance in Business Education.* (3) Principles, problems, and programs of guidance in business education. Participants will be required to design guidance programs for specific school situations.

524. *The Administration and Supervision of Business Education.* (3) Deals with administration and supervisory problems; departmental organization; pupil records; rendering service to administrative officers and other school

departments; guidance in business education; tests and measurements; placement and follow-up; equipment; in-service training of teachers; new materials; current publications; state and national testing programs.

Courses in Research

511. *Thesis Writing.* (3) Courses in Methodology of Research.

512. *Research in Business Education.* (3) Study of significant research investigations in commercial education other than tests. Includes surveys, job analyses, teaching method investigations, and criteria of good research.

513. *Thesis Writing.* (3) Completion of the thesis.

514. *Special Experimental Problems in Business Education.* (3) Designed for students who wish to do a special research problem of a classroom nature in addition to the thesis.

Office Administration

201. *Office Machinery.* (3) Instruction and training to develop reasonable skill in the operation of the calculating, duplicating, transcribing, switchboard, and other common office machines. $3.00 lab fee.

202. *Office Machinery.* (3) To train students on the three major duplicating machines for mass production: multigraph, multilith, mimeograph, and in the use of certain office machines and appliances necessary. Prerequisite: OA 201. $3.00 lab fee.

203. *Office Machinery.* (3) Designed to give students an opportunity to become thoroughly familiar with the operation of the vari-typer, telephone switchboard, addressograph, I.B.M. and transcribing machines. $3.00 lab fee.

204-5-6. *Beginning Shorthand.* (9) Designed to develop an understanding of the basic principles of the simplified method of Gregg Shorthand, and the ability to apply these principles to an extensive shorthand vocabulary. $3.00 lab fee: 205-6.

211-2-3. *Beginning Typewriting.* (9) Beginning typewriting course for business majors, and so far as facilities permit, for other students who wish to acquire a working knowledge of typewriting. $3.00 lab fee, per quarter.

221. *Typewriting Speed.* (3) A course in the development of superior skill in typewriting. To enable students to meet the demands for higher production rates for typewritten material. $3.00 lab fee.

301. *Office Systems.* (3) Routine and procedures for handling correspondence and mailing, filing system, oral communications, office planning and layout. Systems of control are applied to each type of office work. Prerequisite: OA 221.

304-5. *Advanced Shorthand and Transcription.* (6) Skill in taking dictation and in typewritten transcription is developed concurrently in this course, in the process of building a usable skill in maximum production of mailable typed transcripts. $3.00 lab fee per quarter.

306. *Secretarial Training.* (3) Instruction in office procedures, performance of upper-level secretarial duties, filing, business ethics, and personality development. $3.00 lab fee.

401-2-3. *Office Internship and Secretarial Problems.* (3) This course, for seniors only, is based on an active program which provides opportunity for practical experience under actual business conditions. Includes voicewriting and audio visual techniques.

434. *Problems of Office Management.* (3) Problems involved in planning

and directing the functions of business and professional offices, including office building, layouts, management and preparation of office manuals.

DEPARTMENT OF ECONOMICS

ADOLPH T. SCOTT, *Head**

The courses and facilities of this department are designed: (1) to provide adequate orientation and training in the problems of economic analysis for undergraduate students and to provide special background for those intending to specialize in social sciences or in professions such as law, accountancy, and journalism; (2) to train teachers and investigators for the work of instruction and research in economics; (3) to provide suitable training for the growing number of positions in the higher civil service, or in quasi-governmental work conducted by unofficial agencies; (4) to carry on the work of expert consultation and advice in cooperation with responsible business groups and civic agencies; and (5) to conduct research of a fundamental nature in the basic problems of income distribution and employment.

The degree of bachelor of arts is given for the attainment of knowledge and understanding in the field of economics and related fields demonstrated to the satisfaction of the College. Two years of concentrated effort are usually needed to satisfy the requirements for the degree.

A program of study approved by the department must be followed. The nature and extent of this program in general depend upon the student's previous training and experience. Normally, one-third of this program is in the field of concentration, one-third in related fields, and one-third elective.

Satisfactory completion of a minor with at least 18 quarter hours in one of the following fields; business administration, political science, social administration, business education or education.

Students who intend to teach take note of requirements for teacher certification as listed under the Department of Elementary and Secondary Education.

Undergraduate students who present two high school years of a foreign language for admission may satisfy the language requirements by completing an additional year of this language in college. All other students are required to complete two years of French or German.

CURRICULUM IN ECONOMICS

Freshman Year	Quarter Hours Credit		
	I	II	III
English 101-2-3	3	3	3
Chemistry 111-12-13 or Biology 101-2-3	3	3	3
Mathematics 171-72-73	3	3	3
History 121-22-23	3	3	3
French or German 101-2-3	3	3	3
Business Orientation 101-2-3	1	1	1
Physical Education 101-2-3 (Women)	1⅓	1⅓	1⅓
Physical Education 101-2-3 (Men)	⅓	⅓	⅓
Air Science 151-2-3	1	1	1
	17⅓	17⅓	17⅓

Sophomore Year	Quarter Hours Credit		
	I	II	III
English 201-2-3	3	3	3
Economics 211-12-13	3	3	3
Geography 271-72-73	3	3	3
French or German 201-2-3	3	3	3
Political Science 221-22-23 or Sociology 211-12-13	3	3	3
Psychology 211, 243 and 263	3	3	3
Physical Education 201-2-3 (Women)	1⅓	1⅓	1⅓
Physical Education 201-2-3 (Men)	⅓	⅓	⅓
Air Science 251-2-3	1	1	1
	19⅓	19⅓	19⅓

*On leave of absence.

Junior Year

	Quarter Hours Credit		
	I	II	III
Economics 311	3		
Ag. Econ. 202	3		
Economics 312-13		3	3
Sociology 301	3		
Sociology 312		3	
Economics 431 or History 371		3	
Statistics 321	3		
Bus. Statistics 322		3	
American History 201-2-3	3	3	3
Electives	3	3	12
	18	18	18

Senior Year

	Quarter Hours Credit		
	I	II	III
Economics 432		3	
Economics 433			3
Econ-Senior Project 450	(3)	3	
Political Science 441	3		
Minor	9	6	6
Electives	3	6	9
	18	18	18

Courses in Economics

Undergraduate

201. *Economics and Social Institutions.* (3) A study of changing economic system of Western Europe, especially England and the United States. A foundation is laid for the comparative study of contemporary economic systems, especially the clash between capitalism and authoritarian systems.

202. *Economics and Social Institutions.* (3) An introduction to the study of modern society, designed to give the student an appreciation of the different approaches to the subject-historical, anthropological, social-psychological and sociological.

203. *Economics and Social Institutions.* (3) Analysis of the major institutional patterns in the United States, such as the family, the community, the church, and the educational systems.

211-12-13. *Economic Principles.* (9) Principles and Problems associated with the production, exchange, and use of wealth.

311. *Intermediate Economic Theory.* (3) To give a major treatment to the problems of price determination, demand and costs, and price determination and output under a system of pure competition and monopolistic competition.

312-13. *Money and Banking.* (6) Objectives—To develop a sound understanding of the role of banks in our economy. Specific emphasis being placed on central bank functions such as: the control of reserves, the supervising of bank operations, controlling the supply of money, and carrying out the fiscal functions of the government.

431. *Economic Development of the United States.* (3) A study of the progress in agriculture, industry, communication, transportation, banking and trade, and the developments in governmental economic policy.

432. *State and Local Taxation.* (3) Survey course devoted to tax problems of state and local governments; special emphasis on state questions.

433. *Introduction to Government Finance.* (3) Survey of institutions and theories of government finance. Effects of public expenditures; functions of public revenues; forms of taxation; tax criteria; determination of tax policy; public borrowing; debt management; fiscal policy.

450. *Senior Project.* (3).

Graduate Courses

511-12. *Thesis Writing.* (6) Courses in Methodology of Research. Involves the actual writing of the thesis.

513. *Development of Economic Thought.* (3) A survey of economic principles with emphasis on the development of theories of value and distribution. Special attention will be given to recent literature in the field.

514. *Economic Systems.* (3) Study and appraisal of the operation of, and theories underlying Capitalism, Fascism, Socialism, Communism, and other economic systems.

515. *Fiscal Policy.* (3) Government fiscal operations as they affect the magnitude of national income, distribution of income, allocation of resources. Fiscal theories, fiscal practices and price stability; fiscal policy aspects of federal-state relations, interrelations of tax debt, and expenditure policies; political and administrative aspects.

521. *Modern Monetary Theory.* (3) Survey of the current concepts of money and its significance in economic affairs, with emphasis on the relation of money to prices, employment, income, and business activity.

522. *Business Cycle Theory.* (3) Survey of business cycle theory and a critical examination of the various proposals for stabilizing and controlling cyclical fluctuation in business activity.

524. *International Trade and Finance.* (3) Theory of international balances, foreign-exchange theory, the international aspects of monetary and banking theory, and tariff theory.

534. *Federal Taxation.* (3) The structure and major policy issue of the federal tax system analyzed with reference primarily to economic administrative, and political criteria, individual and corporate income taxes, excess profits tax, estate and gift taxes and excise and sales taxes.

DEPARTMENT OF ELEMENTARY EDUCATION

Frances A. Sanders, *Head*

The Department of Elementary Education has been set up by the University as its agency for the professional preparation of educational leaders in the field of elementary education. The following are its objectives:

1. To train elementary principals, teachers, and supervisors for city and rural schools
2. To enable the prospective teacher to understand and appreciate the nature and purpose of education
3. To investigate the educational, social, and economic problems of the state and to assists local communities in the solution of these problems through education.

Elementary Education is one of the departments of the School of Education of the university leading to the degree of bachelor of science in Education. All students enrolled in the elementary education curriculum are required to take an entrance examination during the fall quarter of their freshman year. At the close of the Sophomore year, the students enrolled in the department are required to take an achievement test. Unless an average of 2.0 is maintained, the student will not be admitted in the upper division or the senior college level.

In order to prepare the prospective teacher for both rural and urban teaching positions, it is considered advisable to have them do observation, participation, and practice teaching in teaching situations in Nashville and Davidson County city and county schools as well as other counties. They are also given opportunity to participate in various forms of community activities such as: church and Sunday school work; PTA programs; community club work; home visitations; playground supervisions.

Elementary Education Curriculum

Freshman Year

	Quarter Hours Credit		
	I	II	III
English 101-2-3	3	3	3
History 121-2-3	3	3	3
Science 101-2-3	3	3	3
Mathematics 101			3
Geography 171-72-73	3	3	3
Education 101	3		
Music 101-2		3	3
Air Science 151-52-53	1	1	1
Physical Ed 101-2-3			
(Women)	1⅓	1⅓	1⅓
(Men)	⅓	⅓	⅓
	16⅓	16⅓	19⅓

Sophomore Year

	Quarter Hours Credit		
	I	II	III
English 211-2-261	3	3	3
Education 231-2-3	3	3	3
Psychology 211-253	3		3
Health 211-12-13	3	3	3
History 201-2		3	3
Art 101-201	3	3	
Air Science 251-52-53	1	1	1
Physical Ed 201-2-3			
(Women)	1⅓	1⅓	1⅓
(Men)	⅓	⅓	⅓
	16⅓	16⅓	16⅓

Junior Year

	Quarter Hours Credit		
	I	II	III
Education 332			3
Education 333			3
Education 313	3		
Education 311		3	
Education 362			3
Sociology 211-12-13	3	3	3
Education 385		3	
Geography 371-2-3	3	3	3
Music 131-2-3	3	3	3
Library Ser. 211-363	3	3	
Speech 201	3		
	18	18	18

Senior Year

	Quarter Hours Credit		
	I	II	III
History 411	3		
Education 431-2-3	3	3	3
Education 443	3	3	3
Education 243		3	
Education 363			3
Education 450	3	3	3
Education 481	3		
Education 473		3	
Electives			3
	15	15	15

Courses in Elementary Education

101. *Introduction to Education.* (3) An orientation course to give the student a broad overview of the educational system and of the necessary steps in preparing for a career as a teacher. It includes a general study of the evolution of the American school, the elementary pupil, curricular offerings, the qualifications of the teacher and the school laws of Tennessee. Not counted for certification. May be counted as education.

211. *General Psychology.* (3) For description see Psychology 211. May be counted as three hours toward an Elementary or Secondary Certificate.

231. *Teaching Arithmetic in the Elementary School.* (3) Two sections, "A" for majors and "B" for non-majors. An analysis of the current issues including: teaching arithmetic through firsthand experiences; the place of meaning, thinking, and drill in effective learning.

232. *Teaching of Language Arts in the Elementary School.* (3) A consideration of modern trends in teaching the language arts; reading, spelling, literature, composition and writing. The materials in this course purpose to give the student a fundamental knowledge of the uses of language which will best enable the student to communicate with others. It deals with the adequate training in both the subject matter and methods of teaching the language arts subjects. Prerequisite: Education 231.

233. *Teaching the Social Studies in the Elementary School.* (3) Prequisite: Education 231, 232. This course considers the educational values of the social studies, reasons for, and ways and means of integrating history, geography and civics and the development of pupils of appropriate emotional and thought reactions to social problems and issues.

313. *Tests and Measurements in the Elementary School.* (3) (See Measurement and Evaluation in Elementary School, Psychology Department.)

332. *History of Education in the United States.* (3) A survey course of the evolution of Public Education in the United States.

333. *Education Seminar.* (3) This course is open to juniors and seniors only in the field of Elementary Education. Deals with (a) discussion of problems encountered in teaching, (b) current trends in teaching techniques and materials of teaching (c) direction of students in individual development and personality traits relating to securing and holding a job.

362. *School and Community Relations.* (3) The responsibility of teachers for exerting leadership in the community and ways in which they can exert this leadership; a study of the relationships which should exist between school and community.

311. *Elementary Statistics.* (3) See Elementary Statistics. Department of Psychology.

385. *The Curriculum.* (3) Winter Quarter. A critical study of the reorganization, construction and administration of the elementary and high school curriculum in the light of modern education principles and objectives; overview of the subjects now included in the curriculum and the forces that cause them; the construction of units and other curriculum materials.

363. *Guidance and Extra Curricular Activities.* (3) Registration limited to thirty. This course covers the basic principles and procedures involved in guidance programs which meet the educational, social, vocational needs of the elementary and high school pupils. Special attempts are made to show the place of the assembly programs, student civic organizations, clubs and athletics in the total growth and development of the student population both individually and in group activities.

431-2-3. *Observation and Participation Teaching in the Elementary Schools.* (9) Fall, winter, spring quarters. A three part course consisting of directed observation and participation in instruction in elementary grades; open only to seniors and teachers with some experience. It proposes to offer situations which the student will meet in actual work and give him the benefit of skilled and experienced teacher's solution of school problems. Conferences for interpreting school activities in the light of the observation and parallel readings are held frequently. Students must earn at least 90 clock hours credit in this course. Prerequisites: Education 253, 211, 232, 231 and 233. Applications for Educa-

tion 431-2-3 must be filed not later than second week in May prior to the school year in which the applicant desires student teaching privileges.

443. *Principles of Teaching in the Elementary School.* (3) An advanced course in methods and materials in the elementary school, designed for students who have had the equivalent of Education 243; 231-2-3. Must be taken along with Education 431-2, Student Teaching.

450. *Senior Project Writing.* (3) Designed to give opportunity for students to individually work upon and develop problems of their choice in the area of elementary education. May be taken without credit.

481. *Early Childhood Education.* (3) A course designed to improve and work for the education and well being of children (particularly two to eight year olds), by promoting desirable educational conditions, programs, and practices; raising the standards of preparation and encouraging continued professional growth of teachers in this field. Open to third and fourth year students.

253. *Child Psychology.* (3) See Psychology Department. Education credit for elementary majors.

243. *Educational Psychology.* (3) See Psychology Department—required of elementary majors who plan to do graduate work in elementary education.

473. *Audio-Visual Aids in Education.* (3) This course is concerned on the one hand with the organization of materials from the standpoint of assembly. Classification and physical production, and on the other hand, with their integration into the educational program through courses of study and the development of teaching techniques. Proper utilization of filmstrips, 16mm motion pictures, slides, graphic materials, object materials, field trips, exhibits, models, and simple types of dramatic presentations are studied.

474. *Selection of Audio-Visual Materials of Instruction.* (3) This course deals with the organization, direction, and operation of audio-visual centers and audio-visual departments in schools. It includes a study of personnel and staff, planning of budget, operation of physical plant, and distribution of materials and equipment.

403. *Foundations of Elementary Education.* (3) Developing the background for an understanding of present trends in elementary education. Consideration of dynamic child purposes, pupil-teacher-planning, and cooperation between home, school, and community.

EDUCATION FOR SECONDARY TEACHERS

Students who plan to do high school teaching have three possible choices in training: (1) First is in broad subject fields such as (a) Language and Literature, (b) Natural Science, (c) Social Studies, and (d) Mathematics and Natural Science. (2) The next choice is in a field slightly less broad but somewhat broader than individual subjects. These include such areas as (a) Biological Science, (b) Natural Science, (c) English and Speech, (d) Commercial Subjects, (e) Agriculture, (f) Home Economics, (g) Industrial Arts, (h) Distribution and (i) Music. (3) The third possible choice is by subjects.

Students should elect fields or subjects which will meet the requirements for teaching in at least three subjects in the high school. Those students interested in library work or work as teacher librarians should take sufficient courses in Library Service to meet state requirements. All high school teachers should take the courses on books for high school children.

Students should plan their program so that during the senior year one full quarter (15 hours) may be devoted to courses in Education, including student teaching which will consist of Education 423, 471, 472, 426 and 473.

Secondary Education Curriculum

Freshman Year

	Quarter Hours Credit		
	I	II	III
English 101-2-3	3	3	3
History 121-2-3	3	3	3
Biological Science (Botany, Zoology)	4	4	4
Mathematics 101-2	3	3	
Major	3	3	3
Air Science 151-52-53	1	1	1
Physical Ed 101-2-3 (Women)	1⅓	1⅓	1⅓
(Men)	⅓	⅓	⅓
	17⅓	17⅓	17⅓

Sophomore Year

	Quarter Hours Credit		
	I	II	III
English 211-2-3	3	3	3
Psychology 211-243-263	3	3	3
Natural Science (Chemistry, Physics)	4	4	4
Sociology 211-12-13	3	3	3
History 201-2-3	3	3	3
Air Science 251-52-53	1	1	1
Physical Ed 201-2-3 (Women)	1⅓	1⅓	1⅓
(Men)	⅓	⅓	⅓
	17⅓	17⅓	17⅓

Junior Year

	Quarter Hours Credit		
	I	II	III
Education 341-42	3	3	
Education 442			3
Health 211	3		
Teaching Areas & Electives	12	12	12
	18	15	15

Senior Year

	Quarter Hours Credit		
	I	II	III
Education 471-2	3	3	
Education 423	3		
Education 426	3		
Education 485-86		3	3
Education 473-74		3	3
Teaching Areas & Electives (Teaching subjects in the areas that you are going to be certified)	6	6	9
	15	15	15

Suggestions Regarding the Selection of Courses

Program for High School Teachers

Students preparing to teach academic subjects in high school should refer to the program on the foregoing page. High School teachers need a broader preparation than those provided in a program of study which requires rather high specialization in one or two subjects. The average high school teaching position in Tennessee requires certification in several subjects or teaching areas. To encourage broad professional training, the Department of Secondary Education recommends that each student plan, with the help of his Education adviser, a program which will give adequate preparation in at least three fields of teaching. The student may choose one of the three levels of specialization, and should select within one of these levels a planned pattern of courses corresponding to one of the following:

1. *Language and Literature*
   a. A minimum of four years in English
   b. A minimum of two years in a foreign language
   c. A minimum of eighteen hours selected from courses in Dramatics, foreign language, Journalism, Library Service, Speech, or kindred subjects.

2. *Mathematics and Natural Science*
   a. A minimum of two years (eighteen hours) in Mathematics, including College Algebra.
   b. A minimum of one year in each of the following: Chemistry, Geography and Physics.
3. *Natural Science*
   a. A minimum of one year's work in each of four of the following: Botany, Chemistry, Mathematics, Physics, and Zoology
   b. A minimum of twenty-four distributed among the following or related courses: Bacteriology, Entomology, Geography, Hygiene, and Nutrition.
4. *Social Studies*
   a. A minimum of three year's work in History, including American History and European or World History.
   b. A minimum of one year's work in each of the following: Economics, Geography, Political Science and Sociology.
   c. A minimum of one year's work in the above listed or related subjects.
5. *Health*—this will include:
   a. A minimum of 27 quarter hours in health-related sciences beyond those required in the lower division, including not less than one quarter courses in Bacteriology, Hygiene, Nutrition, Physiology, and Sanitation; and
   b. A minimum of 9 quarter hours in physical education and 9 in public health education; and
   c. Choice of an additional 27 hours taken from the following options:
      (1) Health Education—selected studies in Public Health Education Problems, Special Education, and advanced Child Study or Educational Psychology, including Mental Hygiene or
      (2) Physical Education—selected studies in physical education and hygiene; or
      (3) Combinations of 1) and/or 2) with additional work, if desired, in such field as Adult Education, Child Development, Human Relationships, Political Science, Psychology, Sociology, etc.

Class 2. Intermediate teaching areas covering a minimum of 48 quarter hours in special fields or closely related subjects. Students selecting one of these intermediate areas must choose an additional 24 quarter hours as provided for under Class 3.

1. *Agriculture*—This will include the 37 quarter hours in technical agriculture required in the freshman and sophomore years of the curriculum in Agriculture and Botany 313 and sufficient other electives courses in Agriculture to make a total of 48 hours as a minimum.
2. *Biological Science*
   a. A minimum of one year of each of the following: Bacteriology, Botany, and Zoology.
   b. A minimum of eighteen quarter hours distributed among the above listed or related subjects.

3. *Commercial Subjects*—This will include from 48 to 54 quarter hours from the departments of Economics, Accounting, Retailing, and Office Administration as approved by the Education adviser.
4. *English and Speech*
   a. A minimum of three years' work in English
   b. A minimum of two years' work in Speech
   c. A minimum of one years' work selected from the following: Dramatics, Journalism, Library Service, Literature and Radio Production.
5. *Home Economics*
   a. The courses in Home Economics required in this group will be those required in the first two years of the Home Economics Education curriculum and sufficient additional hours to total 48 quarter hours.
   b. Nine hours of Public Health Education
6. *Industrial Arts*
   This will include: A minimum of 27 quarter hours selected from the following: Mechanical Drawing 111-2-3, 211-2-3, Mechanical Engineering 131, 212, 213; Chemical Engineering 481; Agricultural Engineering 111, 113, 211, 322, 323, 431 and sufficient other subject matter courses to total a minimum of 48 quarter hours.
7. *Natural Science*
   a. A minimum of one year in each of the following: Chemistry, Physics, and Geography.
8. *Distribution*
   This involves wholesale, retail and service areas in the field of distribution and is provided for the training of teachers of Distributive Education in high schools. Training in this field will include a minimum of 48 quarter hours from the departments of Economics, Accounting, Retailing, Marketing and Statistics as approved by the student's adviser.
9. *Music*
   a. A minimum of one year of music theory
   b. Participation in the University Chorus
   c. A minimum of one year of Music Education
   d. Electives in music to total not less than 48 hours in this group. (Competence in the fields of piano and voice is highly desirable).
10. *Art*
    a. A minimum of one year in Fine and/or Related Art, to include fundamentals in the areas of Design, Drawing and Painting.
    b. A minimum of one year in fundamentals of Art Education prescribed as follows:
       Art Education 101
       Art Education 201
       Art Education 203
    c. Electives in Art, Related Art, and Art Education to total not less than 48 quarter hours in this group.

Class 3. Students desiring greater specialization may concentrate their efforts within special subjects by completing 30 quarter hours in one subject,

at least 12 of which should be in the upper division, and 24 quarter hours in each of two other subjects, each of which should include at least six quarter hours in the upper division. In case Library Service is selected as a teaching area, the student will elect six hours of related work to bring the total to the 24 hours required. In selecting subjects, the student is advised to consider those normally taught in junior or senior high schools, but other subjects will be accepted by approval of the student's Education adviser and the Chairman of the School of Education.

Courses in Secondary Education

341. *Principles and Organization of Secondary Education.* (3) This is a required course for all teachers of the high school. It includes the principles underlying the evolution of the present American high school, types of organization, the high school pupil, curricular offerings and present-day problems with special reference to the Negro high schools of Tennessee.

342. *General Methods and Class Management in Secondary Schools.* (3) This course is prerequisite for student teaching. Topics covered are classroom management, unit and lesson planning, direction of the various learning activities, selection and use of instructional materials and evaluation of the teaching-learning process.

312. *Measurement and Evaluation in Public Schools.* (3) Prerequisite General Psychology 243. Course offers training in administering, scoring, processing, and using the results of standardized tests and other measures of progress in public schools; also training is offered in the construction of objective tests. Laboratory fee, $1.00.

423. *The High School Curriculum.* (3) Fall and spring quarters. A critical study of the reorganization, construction, and administration of the high school curriculum in the light of modern educational principles and objectives; overview of the subjects now included in the curriculum and the forces that caused them; the construction of units and other curriculum materials.

442. *Educational Sociology.* (3) This course deals with an application of education in the solution of sociological problems.

426. *Philosophy of Education.* (3) A consideration of the function or purpose of education in our elementary and secondary schools and the bearing of this purpose on problems of organization and administration; the selection of the subject matter to classroom practice. Prerequisites: Psychology 241-2; Education 243 and 3 hours sociology, or permission of instructor.

471-2. *Student Teaching in High School.* (6) Parallel: 463 must be taken with this course and not more than two additional courses may be taken in the same quarter. Only 15 credit hours may be carried this quarter (this includes the 6 hours' credit for this course).

473. *Audio-Visual Aids in Education.* (3) This course is concerned on the one hand with the organization of materials from the standpoint of assembly. Classification and physical production, and on the other hand, with their integration into the educational program through courses of study and the development of teaching techniques. Proper utilization of filmstrips, 16mm motion pictures, slides, graphic materials, object materials, field trips, exhibits, models, and simple types of dramatic presentations are studied.

474. *Selection of Audio-Visual Materials of Instruction.* (3) This course deals with the organization, direction, and operation of audio-visual centers and audio-visual departments in schools. It includes a study of personnel and staff, planning of budget, operation of physical plant, and distribution of materials and equipment.

485. *Survey Course in Special Education.* (3) A course designed to acquaint the student with general field of special education.

486. *The Psychology of the Physically Handicapped.* (3) The course acquaints the students with facts concerning the behavior of the handicapped children so that they may be in the position to advise them more competently in regards to education and vocational adjustment.

Graduate Courses in Education

500. *Foundations of Education.* (3) In this course social, historical, and philosophical foundations of education will be considered.

501. *Seminar in Testing.* (3) An advanced course in testing with special emphasis on the Tennessee Testing Program.

502. *School Administration.* (3) The course School Administration shall include the following areas: (a) Public school administration (b) Public school supervision; (c) Public school finance; (d) Curriculum development; (e) Survey technique; (f) Public relations; (g) Planning, construction, operation and maintenance of school buildings; (h) School transportation; (i) History and philosophy of education; (j) Educational sociology, and (k) Teachers salaries.

503. *School Supervision.* (3) The topics considered in the course include problems of administrative organization and relationships, financial control and assistance, legislative and regulatory standards, and various types of supervisory service. The history of supervision is traced, its background is sketched, and details concerning the methods now in use are described.

504. *Adult Education.* (3) A survey of the problems of instruction in the education of adult illiterates.

511-12. *Research and Thesis Writing in Education.* (6) A course is required of all students who are working for the master's degree in education.

514. *Principles of Teaching.* (3) Critical survey of elementary education; current trends, administration, pupil guidance, teaching methods and evaluation. Required of candidates for the master's degree in elementary education.

520. *Curriculum Construction in the Elementary School.* (3) Designed for teachers and administrators who desire to study newer curriculum practices and needed changes in selection and organization of curriculum content.

521. *Educational Statistics.* (3) This course studies the application of statistical techniques to educational problems.

522. *History of Education in the United States.* (3) A survey of the evolution of education in the United States.

523. *Curriculum Construction.* (3) A practical course dealing with the collection, classification and use of curriculum materials.

524. *History of Education.* (3) This course offers a critical examination of the social and educational experiences which have greatest significance in explaining present educational policies, practices and institutions.

525. *Problems in Secondary Education Instruction.* (3) This course considers secondary school problems in the fields of curriculum materials and patterns, general technique of teaching and the special techniques and evaluation of the outcome of instruction.

531. *Negro Education in the United States.* (3) This course surveys the evolution and present status of the education of Negroes in the United States.

533. *The High School Principal.* (3) This course is designed primarily for high school principals or those who are planning to become principals. Such topics as evolution of the principalship, nature and organization of the principal's work, program making, selection of the school faculty, administration of a school and supervision of instruction will be covered. Open only to graduate students and qualified graduating seniors.

536. *Observation and Research in Student Teaching in the Elementary School.* (3) For college graduates without teaching experience and for critic teachers of student teaching. Topics include: the organization and administration of student teaching, procedures in all phases of student teaching as may be determined by observation, and special problems. Designed especially for teachers working with student teachers in their classes.

540. *Problems in Beginning Teaching.* (3) A plan for assisting recent graduates in beginning teaching situations and for those teaching your children. The content of the course will be based chiefly on situations teachers are meeting.

541. *Counseling the High School Pupil.* (3) Consideration of high school pupils at various age levels; study of personal, social, counseling techniques; modifications of school program to meet the needs of high school pupils; record keeping; interpretation of data gathered about pupils; role of home room teacher, principal, parents; relation to total guidance program in school.

551. *The Principal at Work.* (3) A systematic study and analysis of the work of a principal in a given school tisuation and of the possibilities for development of the school program and formulation of specific plans to foster such growth.

553. *The Supervisor at Work.* (3) Evaluation of program of work; program planning; report making; relation to superintendent; relation to community agencies; relation to school principals; professional activities for teachers; publicity.

562. *Techniques of Teaching Reading in the Elementary School.* (3) A consideration of the modern trends in the teaching of reading techniques and materials of reading for the children on the primary, middle and upper grade levels.

573. *Audio-Visual Aids in the Elementary School.* (3) A consideration of the role of visual instruction in the elementary school; intensive study of the contribution of visual materials to educational objectives with especial attention to the research literature. Standards for evaluation will be critically examined.

591-2-3. *Problems and Projects in Education.* (9) Students may register for one to three special projects in education under the direction of an appropriate member of the School.

DEPARTMENT OF HEALTH AND PHYSICAL EDUCATION

HENRY A. KEAN, *Head*

DEPARTMENTAL AIMS

1. To prepare the prospective teacher in the field of health and physical education for positions as:
   a. Teachers of Health and Physical Education on the elementary, high school, and college levels.
   b. Athletic coaches.
   c. Playground and community center directors, recreation assistants, instructors, and supervisors.
2. To provide an adequate Health Service set-up which entitles students to the privileges of the service of this program for the promotion, maintenance, and conservation of the health of the student in terms of the scope of health education.
3. To provide opportunities for all students, faculty members, and personnel of the University to engage in activities that are physically wholesome, mentally stimulating and satisfying, and socially sound through the provision of indoor and outdoor facilities for both curricular and co-curricular participation.

UNIVERSITY ATHLETICS

Athletics at A. and I. State University are an integral and fundamental part of the total physical education program, contributing very generously to the realization of the aims set up within the Department of Health and Physical Education. Thus responsibility for the development, maintenance, and administration of the athletic program is vested in the Head of this Department of specialization. The program of athletics here, like the program in most institutions of higher learning, forms two major areas of student participation: intercollegiate and intramural competition.

A. *Intercollegiate Athletics.* The University sponsors its intercollegiate athletic program through the agency of an athletic committee, whose function it is to establish, administer, and supervise all athletic policies pertaining to inter-school competition, expenditures, scheduling of games, setting up of standards for governing the issuance of awards, and the selection of coaches and athletic aids.

Although the trend points toward a broader program of intercollegiate participation, at present the inter-school competition is confined to football, basketball, track and field, swimming and tennis, for men; and track and field, tennis, and play days for women.

B. *Intramural Athletics.* Intramural athletics at the university are primarily activities of the students. The students own and control all intramural activities through the agency of intramural managers and officials. The policy making body of the organization is the Intramural Council, composed of student managers, one or two faculty members from the Department of Health and Physical Education, and the Head of the Department as an exofficio member.

Intramural activities for men students are organized on the league style of play wherein one, two, or three sports or activities may be promoted during any season. Activities for men include touch football, volleyball, softball, swimming,

tennis, basketball, horseshoes, bowling, archery, wrestling, handball, table tennis, flag football, and badminton.

Intramural activities for women students are organized on the league style of play. Basketball, volleyball, badminton, tennis, table tennis, bowling and softball are played.

The Required Physical Education Program

All students except those who are officially excused by the college physician* and veterans**, must take six quarters of physical education distributed in the following manner:

Two (2) Individual activities—one of which must be swimming unless student can pass university swimming test.

Two (2) Team Sports

One (1) Rhythmic or combative activity

One (1) Free elective from either group

Six (6) Quarters with eight (8) credit hours

Uniform Regulations

Students enrolled in physical education activity courses are required to provide themselves with the following equipment to be purchased from the Office of the Business Manager of Athletics.

Women

One regulation gymnasium suit	$3.00
One pair of socks	.50
One pair of gymnasium shoes and socks	1.75
One swimming suit	2.00
One bathing cap	1.50
Total —	$8.75

Men

One pair of socks	$ .50
One white "T" shirt	.75
One pair of blue shorts	1.50
One athletic supporter	.75
One pair of gymnasium shoes	3.00
One pair of swimming trunks	2.25
Total —	$8.75

These prices are subject to change.

*Students whose physical conditions will not permit them to pursue the regular activity courses in physical education must fulfill a requirement in general health courses. (See Description of Health 101-2-3 and Health 201-2-3.)

**Veterans may receive credit in physical education in proportion to their time spent in the Armed Services up to a maximum of two quarter hours. (This statement does not apply to Health and Physical Education majors and minors.)

Freshman Year

Women	Men
101 Body Conditioning and Group Games	101 Body Conditioning and Group Games
102 Beginners' Swimming	102 Beginner Swimming
103 Volleyball	103 Volleyball

Sophomore Year

(Select any three:)

Women	Men
Fall Quarter	Fall Quarter
202 Folk and Square Dancing	203 Soccer and Speedball
203 Soccer and Speedball	204 Advanced Swimming
204 Advanced Swimming	206 Tennis
206 Tennis	210 Flag Football
219 Field Hockey	Winter Quarter
Winter Quarter	201 Basketball
201 Basketball	202 Folk and Square Dancing
202 Folk and Square Dancing	204 Advanced Swimming
204 Advanced Swimming	207 Clog and Tap Dancing
207 Clog and Tap Dancing	216 Boxing
208 Creative Dancing	218 Wrestling
221 Bowling	221 Bowling
Spring Quarter	Spring Quarter
202 Folk and Square Dancing	202 Folk and Square Dancing
205 Stunts, Tumbling, and Pyramid Building	205 Stunts, Tumbling and Pyramid Building
206 Tennis	206 Tennis
207 Clog and Tap Dancing	209 Softball
208 Creative Dancing	214 Archery
209 Softball	215 Badminton and Deck Tennis
214 Archery	217 Track and Field
215 Badminton and Deck Tennis	220 Small Craft
217 Track and Field	
220 Small Craft	

Course Descriptions

Health 101-2-3. *General Health.* (3) These courses are designed for students who are not permitted to take the required freshman and sophomore physical education courses because of a medical excuse from the University Physician. They embody a survey of defects of all students in the class. Units of study are developed around each defect for the purpose of acquainting the student with the number of games and activities in which he may safely light of his physical capabilities and limitations.

Health 201-2-3. *General Health.* (3) A continuation of Health 101-2-3. A follow-up study of the student's health. These courses aim to acquaint the student with the number of games and activities in which he may safely participate.

Programs for Majors in Health and Physical Education

The curriculum in Health and Physical Education is designed to prepare men and women to teach in the fields of health education, physical education and recreation; and to meet state certification and departmental requirements. The degree of Bachelor of Science in Health and Physical Education is conferred upon the student who successfully fulfills the requirements for the University department.

Freshman Year

Name of Course	Quarter Hours Credit I	II	III
English 101-2-3	3	3	3
History 121-2-3	3	3	3
Geography 171-2-3	3	3	3
Chemistry 111-2-3	4	4	4
Education 101-2-3	1	1	1
Phy. Edu. 101-2-3 (Women)	1⅓	1⅓	1⅓
Phy. Edu. 101-2-3 (Men)	⅓	⅓	⅓
Phy. Edu. 111-2	1	1	1
Air Science 151-2-3 (Men)	1	1	1
	16⅓	16⅓	15⅓

Junior Year

Name of Course	Quarter Hours Credit I	II	III
Biology 101	4		
Zoology 342-43		4	4
Education 385-341-362	3	3	3
Health 302		3	
Phy. Edu. 322		2	
Phy. Edu. 332		2	
Phy. Edu. 333			3
Phy. Edu. 361	2		
Electives	9	3	6
	18	17	16

Sophomore Year

Name of Course	Quarter Hours Credit I	II	III
Speech 201-2	3	3	
Drama 211			3
Psychology 211-43	3		3
Phy. Edu. 211-12-13	3	3	3
Health 211-12-13	3	3	3
Nutrition 212		3	
Phy. Edu. 200s (Women)	1⅓	1⅓	1⅓
Phy. Edu. 200s (Men)	⅓	⅓	⅓
Air Science 251-2-3	1	1	1
	16⅓	16⅓	16⅓

Senior Year

Name of Course	Quarter Hours Credit I	II	III
Education 342-471-2			9
Psychology 263	3		
Health 401-2	3	3	
Phy. Edu. 401	3		
Phy. Edu. 412-13		3	3
Phy. Edu. 450	3		
Phy. Edu. 421-22-23		2	2
Electives	6	9	3
	18	17	17

Major. A major in Health and Physical Education requires a minimum of fifty (50) quarter hours which must include twenty-one (21) hours in Health and twenty-nine (29) hours in Physical Education distributed in the following manner:

Health 211	Health Examination	3
Health 212	School Hygiene	3
Nutrition 212	Nutrition for Elementary and Secondary Teachers	3
Health 213	Health Instruction	3
Health 302	First Aid and Safety	3
Health 401	Health Seminar	3
Health 402	Organization and Administration of Health and Physical Education	3
		21
Phys. Educ. 101-2-3	Required P. Ed.	
Phys. Educ. 200s	Required P. Ed. (select three)	
Phys. Educ. 211	Folk Rhythms	2
Phys. Educ. 212	Tap Rhythms	2
Phys. Educ. 322	Intermediate Swimming	2
Phys. Educ. 332	Conditioning Exercises	2
Phys. Educ. 333	Prin. & Phil. of Health and Phys. Educ.	3
Phys. Educ. 361	Adult Sports	2

Phys. Educ. 401	Play and Games	3
Phys. Educ. 412	Kinesiology	3
Phys. Educ. 413	Program Planning in Health and Physical Education	3
Phys. Educ. 421-22-23	Athletic Coaching (select two)	4
Phys. Educ. 450	Senior Project Writing	3
		29
	Total —	50

Minor. A minor in Health and Physical Education requires a minimum of thirty-one (31) quarter hours which must include nine (9) hours in Health and twenty-two (22) hours in Physical Education distributed in the following manner:

Health 212	School Hygiene	3
Health 213	Health Instruction	3
Health 402	Org. and Adm. of Health and Phys. Edu.	3
		9
Phys. Educ. 101-2-3	Required P. Ed.	
Phys. Educ. 200s	Required P. Ed. (select three)	
Phys. Educ. 211	Folk Rhythms	2
Phys. Educ. 322	Intermediate Swimming	2
Phys. Educ. 332	Conditioning Exercises	2
Phys. Educ. 333	Prin. & Phil. of Health and Phys. Educ.	3
Phys. Educ. 361	Adult Sports	2
Phys. Educ. 401	Play and Games	3
Phys. Educ. 421-22-23	Athletic Coaching (select two)	4
Phys. Educ. 413	Program Planning in Health and P. Ed.	3
		21
	Total —	30

Certification. Training for certification in Health and Physical Education for high schools of Tennessee effective with Fall Term, 1942.

The twenty-one quarter hours required for certification for the teaching of health and physical education in the high schools of Tennessee shall be distributed in the three areas below as shown:

I. *Physical Education.* (Content) Selected from the following except that that the first activity listed below is required: (9 quarter hours).
   - Conditioning Exercises
   - Stunts and Tumbling
   - Boxing, Wrestling and, or Combat Activities
   - Folk Rhythms
   - Tap Rhythms
   - Adult Sports
   - Group Games or Athletic Coaching
   - Restricted or Individual Activities

II. *Health Education.* (Content) Choice of any three. Minimum 9 quarter hours:
   - Health Examination and Follow-up
   - Health Instruction
   - Nutrition
   - **Safety Education and First Aid.**

III. *Health and Physical Education.* Choice of one (3 quarter hours):
Administration of Health and Physical Education
Principles and Philosophy of Health and Phys. Educ.
Program Planning in Health and Physical Education

Description of Courses in Health Education

211. *Health Examination.* (3) This course is designed to give a general knowledge of those procedures set up to determine the health status of the child. To relate ways and means of enlisting pupil, teacher, parent cooperation, and health protection and maintenance with special emphasis on the teacher's function in the school-health examination program. Required of all majors.

211. *Nutrition.* (3) For description see Department of Foods and Nutrition (required of all majors.)

212. *School Hygiene.* (3) This course is concerned with giving general information of the total environment in which the child lives while at school. Stress is placed on classroom conditions that are conducive to healthful living; and the part the teacher, pupil and janitor must play in maintaining a healthful situation. Required of all majors and minors.

213. *Health Instruction.* (3) Emphasizes a knowledge of child nature, source of health information and materials, and ways of gathering such information. Suggests techniques and procedures for discovering health needs, with special stress on practice in methods of planning, preparing and presenting instructional units. Required of all majors and minors.

301. *Community Hygiene and Sanitation.* (3) This course is designed to acquaint students and teachers in practices and procedures in controlling the environment, especially such practices as are now used in the control of the communicable diseases, food, water, waste material and other sanitation problems arising in suburban areas. Various methods of ventilation, heating and lighting in their relationship to health are stressed.

302. *First Aid and Safety.* (3) This course is designed for students, teachers and athletic coaches who most apt are to be faced with common emergencies that may arise in the home, the school, and on the athletic field, gymnasium, or playground. Special emphasis is placed on safety procedures to prevent common accidents that arise in these areas. Major consideration in the course is given to demonstration and practice of general first aid care of emergencies; with specific stress placed on bandaging, the controlling of bleeding, artificial respiration, and the treatment of strains, bruises, sprains, wounds, and shock. Red Cross certification is given. Required of all majors.

401. *Health Seminar.* (3) Required of all majors.

402. *Administration in Health and Physical Education.* (3) A study is made of the more common problems of organization and administration of Health and Physical Education. Course includes selection, purchase, care of equipment and facilities, office management, class management, budget and finances, and education publicity. Required of all majors and minors.

Description of Courses in Physical Education

111-12. *Orientation in Health and Physical Education.* (2) This course is designed primarily to acquaint freshmen major students with the nature and content of course offerings of the department. The course is so arranged that each staff member will give a brief survey of the respective courses he teaches.

211. *Folk Rhythms.* (2) Dances that are peculiar to foreign countries such as Hungary, Germany, Sweden, and Russia, are taught with emphasis placed upon the relationship of movements to customs and habits of each particular country. Opportunity is given for participating in mixers, round and square dance with stress on western cowboy type suitable for use at upper elementary and high school levels. Required of all majors and minors.

212. *Folk Rhythms.* (2) Materials are included which serve as a functional basis both in school and outside school activities. Modern music is used to develop routine in slow and fast for fox trot and waltz-time. Required of all majors.

213. *The Modern Dance.* (2) Experimentation is used in applying the basic laws of movement to contemporary dance and fundamental principles governing the development of dance movement into an art form for high school and college levels.

303. *Methods in Physical Education.* (3) Primarily this course is designed for majors in health and physical education. Emphasis is placed on a study of the physical education principles, methods, program, and class management. Methods of teaching physical education to boys and girls at various age-grade levels receive a great deal of attention.

322. *Intermediate Swimming.* (2) Prerequisite: Ability to swim 60 feet. Instruction is given in the fundamental arm and leg stroke techniques, plain diving and elementary forms of rescue leading to the Red Cross certificate. Required of all majors and minors.

323. *Life Saving and Water Safety.* (3) This is a professional course for training teachers. Prerequisite: Ability to swim 220 yards. Practice is provided for all coordinate styles of swimming, instruction in life saving and water safety skills, and in techniques leading to American Red Cross Senior Life Saving and Water Safety Instructor Certificates.

332. *Conditioning Exercises.* (2) An opportunity is given for intensive practice and practice teaching of: Tennessee Ten for different grade levels, additional formal calisthenic conditioning, and hand apparatus exercises which include organization of class procedures. Required of all majors and minors, and of those seeking state certification.

Description of Courses in Physical Education

333. *Principles and Philosophy of Health and Physical Education.* (3) An application is made of the sciences of anatomy, bacteriology, chemistry, nutrition, physiology, and psychology to health and physical education methods and procedures. Estimates of physical activity leads for various age groups are emphasized. Required of all majors and minors.

361. *Adult Sports.* (2) Instruction is given in the fundamental rules and techniques of adult sports adaptable to junior and senior high school facilities. The course includes procedures for adapting class organization to different available facilities and for making inexpensive equipment. Opportunity is allowed for participation in the various sports taught. Required of all majors and minors.

400. *Techniques of Football and Basketball.* (4) Given only in the Summer Quarter. A three-week course for coaches involving an intensive study of various techniques in teaching boys the fundamentals of football and basketball.

Ample opportunity is allowed for the practical application of techniques and fundamentals in learning situations. Emphasis is placed on acquainting the coaches with the essentials of winning football and basketball including the importance of conditioning and training, care of equipment, duties of trainers and managers, correct placement of players, and player-coach relationship.

401. *Play and Games for Elementary Schools.* (3) Acquaints students and teachers with a working knowledge of the theory and practice of rhythmic activities, mimetic activities, hunting games, story plays, games and sports, athletic games and others as they are related to the elementary schools. The course considers and explains the best methods of teaching these activities at the various age-grade levels. It also provides a careful study of all the factors that make up a well rounded physical education program in the elementary schools including objectives of the program, organization of the program, and activities of the program. Included also is a discussion of play areas, equipment and supplies. Required of all majors and minors.

402. *Organization of Playground and Recreation.* (3) This course deals with the historic influences affecting the development and status of the current movement for the provision of the public facilities for play and recreation. The course presents types, organization and administration of play activities suitable for the pre-school and school child and the adult. Opportunities are given to the student for surveying local playgrounds, community and recreation centers as a means of gaining experience in the practice of organizing recreation departments, and programs.

412. *Kinesiology.* (3) A study of the bones, joints, ligaments, muscles and their functions in the various movements involved in games, sports, and Physical Education. Stresses ways of incorporating health and physical education. Prerequisite: Zoology 342-43.

413. *Program Planning in Health and Physical Education.* (3) Acquaints students with the state and recommended programs of Health and Physical Education. Stresses ways of incorporating health and physical activities into the total school program. Emphasis is placed on plans and procedures of adapting programs to local conditions. Required of all majors.

421. *Athletic Coaching.* (2) A study of modern methods of coaching football. Prerequisite: approval of instructor.

422. *Athletic Coaching.* (2) Basketball fundamentals studied from a coaching viewpoint. Prerequisite: approval of instructor.

423. *Athletic Coaching.* (2) Lectures and discussions of the form and conditioning used in track and field events.

434. *Festivals and Demonstrations.** (summer) This course is open to men and women. It is organized to acquaint students with the methods, materials, and techniques of working up and presenting pageants, festivals, exhibitions, carnivals, circuses, athletic events, special celebrations, and events of similar nature. Includes a study and discussion of activities calling for large numbers of participants, and methods of combining a number of areas, such as dancing, dramatics, crafts, and athletics.

450. *Project Writing.* (3).

*Approved for graduate credit.

GRADUATE

Health Education

He. 501. *Methods and Materials in Health Education.* (3) A course concerned with the progressive methods and use of teaching aids and materials in health education on the junior and senior high school levels. Especially designed to acquaint the prospective teacher with the fundamentals necessary for discovering health needs of the pupils. Emphasis is placed on the methods and techniques for incorporating health activities into the school curriculum.

He. 502. *School Health Problems.* (3) This course is organized to acquaint the prospective teacher, the in-service teacher, and the administrator with the prominent health problems in the school. Special attention is given to the health significance of the school environment and pupil progress. Discusses the protective and corrective service in the school health program, with emphasis on the teacher's contribution, including health teaching materials, health inspection, testing instruments, charts and techniques, first aid and safety supplies, and school sanitation.

He. 503. *Communicable Disease Control.* (3) The course covers the epidemiology, principles, and control of communicable disease. Essential facts regarding communicable diseases are presented and the practical use of control measures in the community is emphasized. The course is primarily designed for teachers, school administrators, and other school personnel.

Physical Education

P.E. 501. *Seminar in Administration.* (3) Considers the structure and operation of physical education activities in the public schools from the standpoint of administration. It includes a study of objectives, principles and philosophy of physical education in secondary schools. Emphasis is placed on a knowledge and understanding of the methods and procedures for selecting and embodying physical education activities in a program. Ample consideration is given to the modern trends in the area of administration.

P.E. 503. *Playground and Camp Supervision.* (3) The course includes the theory of play, the place of play in education and the organization and supervision of playground and camp activities. Special attention is given to recreational activities for various age groups in accordance with their physical, mental and social characteristics. Selecting, planning, and equipping the playground and camp site are emphasized. Covers program planning for playgrounds and camping in nature study, first aid, camp cooking, water safety, and recreational activities.

P.E. 511. *Methods of Instruction and Supervision in Physical Education.* (3) Practical suggestions are included for teaching play activities, fundamental skills, and athletic games. Special attention is given in in-service training of personnel; program evaluation and improvement; adequacy of facilities and equipment; association with principal and administrators; and community relationships.

P.E. 513. *Tests and Measurements.* (3) This course is designed to acquaint the prospective teacher with the important part that testing plays in the field of physical education. It covers a study in anthropometric measurements, strength index, cardiac functional tests, and statistical methods used to determine motor ability achievements in physical education activities.

P.E. 521. *Current Problems in Physical Education.* (3) A course de signed to help teachers, supervisors, and administrators to solve problems of physical education facing America today in the light of social and economic reconstruction. A study of philosophy and policies in the classification of students, the staff, teaching load, marking (grading), time schedule, graduation of activities, and finance.

P.E. 523. *Community Recreation.* (3) This course deals with the nature, significance and extent of recreation. A study is made of city, county, state, and national organizations along with principles and techniques for organizing and promoting leisure time activities for home, school and community. Consideration is given to the essential elements in community recreation program—leadership, areas and facilities, and distinct program features. Various methods of recruiting and training volunteer workers are discussed to the extent that the student is able to adapt the most suitable ones to his particular needs. Opportunity is given to students to organize and lead in recreational activities.

DEPARTMENT OF LIBRARY SERVICE

Lois H. Daniel, *Head*

The field of librarianship offers many opportunities for work in various types of libraries including school, college and university, public and special. A student taking a major in any school of the university may elect library service as a minor upon the approval of his major advisor and the head of the department. The library service curriculum provides training for: (1) students who wish to prepare for positions as librarians or teacher-librarians in elementary and high schools; (2) students who plan to enter a graduate library school after receiving the bachelor degree; (3) in-service teachers, administrators, and prospective teachers who desire information on library materials related to their teaching needs; (4) under-graduate and graduate students who wish guidance in the use of library resources.

Students who elect library service as a minor for the purpose of meeting certification requirements as set forth by the State Department of Education and/or the Southern Association may do so by completing basic prescribed courses. A minimum of 18 quarter hours training is required for positions in schools with an enrollment up to 300 students. A minimum of 27 quarter hours training is required for large schools. The following basic courses are required to meet the minimum standards: library service 341, 351, 361, 362 or 363, 451 and 452. During their freshman and sophomore years these students should elect the following courses in addition to those required for their academic major: Art education 203—lettering; English 261—Children's literature; Office administration 211—typewriting (if he does not already possess this skill); Library service 211—use of library resources; general psychology and either child or adolescent psychology.

Students who wish to enter a graduate library school should complete all courses offered in the department. In addition they should acquire at least a reading knowledge of two modern foreign languages, preferably French and German. In graduate library schools the language requirements vary. Some schools will accept two years of college credit in the designated languages; others may require reading examinations in the languages, or they may waive such requirements altogether depending upon the kind of library work the student chooses for specialization.

Prior to the beginning of their junior year students who elect library service for certification or for admission to a graduate library school should consult the head of the department for guidance in planning their programs which will be worked out in collaboration with their major advisor.

In-service teachers, administrators, and prospective teachers may enroll in Library Service 362 or 363 even though they do not plan to complete a minor in the department. These students may take other courses after consultation with the head of the department.

Undergraduate students seeking guidance in the use of library resources should elect Library Service 211 as early as possible in their first two years of academic training. Upon the approval of their departmental consultant, graduate students may enroll in Library Service 560—Bibliographic Resources for Research.

Curriculum in Library Service

Freshman or Sophomore Year

	I	II	III
Library Service (Either term)	3	3	3

Junior Year

	I	II	III
Library Service 341	3		
Library Service 351		3	
Library Service 361	3		
Library Service 362		3	
Library Service 363			3

Senior Year

	I	II	III
Library Service 451		3	
Library Service 452	3		
Library Service 463			3
Library Service 473	3	3	3
(Either term)			

Courses in Library Service

Undergraduate

211. *Use of Library Resources.* (3) A general course giving instruction on the use of library facilities including the card catalog, periodical indexes, bibliographies, encyclopedias and other reference books. Designed primarily to aid students in developing a systematic approach to library materials. Open to students enrolled in any department. Three class periods.

341. *The Library in Society.* (3) Introduction to the development and function of the library as a social institution. Includes discussion on types of libraries and services; cooperative planning of services; current trends; opportunities in librarianship. Planned for orientation of students in the broad field of library service. Three class periods.

351. *Library as a Service Agency.* (3) General administrative problems involved in developing a functional relationship between the library and the educational program of the school and community. Attention given to planning the over-all library program in light of clientele served; general principles of publicity and stimulation of use of materials; teaching the use of books and libraries in elementary and high schools.

361. *Library as an Information Laboratory.* (3) Organization and administration of reference services in the small library; developing a basic reference collection together with practice in answering the usual types of reference questions.

362. *Library Resources for High Schools.* (3) A study of problems and principles in selecting, evaluating, and developing the book collection and related materials for use of students in grades seven through twelve. Includes use

of book selection aids, development of criteria for evaluating materials, and an examination of a wide variety of materials from the standpoint of curricular needs, reading interests and personal growth of adolescent students.

363. *Library Resources for Elementary Schools.* (3) Study of principles involved in selecting, evaluating and developing the library collection for children in elementary schools. In addition to an examination of a wide variety of materials for curricular and personal growth of children, attention will be given reading guidance programs in the school and promotional activities aimed at stimulating the use of library materials.

451. *Organization of Library Materials.* (3) Introduction to purposes and principles underlying the organization of books and related materials. Includes a study of simple cataloging processes, the Abridged Dewey Decimal classification, assigning subject headings, filing and other essentials. Laboratory assignments provide opportunity for practice of simple processes. Three class periods and one laboratory period.

452. *Library Administration.* (3) Principles, objectives, and procedures involved in the administration of the small library. Standards and evaluation; housing and equipment, personnel; financial support and budgeting; loan systems; reports and other administrative details included.

463. *Library Resources for Adults.* (3) Selection and evaluation of books and related materials for adults. Emphasis given readability of materials, reading interests and reading levels, book reviews, and materials for forum discussions for out-of-school youth and adults particularly for their personal growth, leisure time activities and work with community groups.

473. *Practice Work.* (3) Provides opportunity for experience in school and community libraries. A minimum of six clock hours per week must be spent in library work. Prerequisites: Library Service 341, 351, 361, 362 or 363, 451 and 452. One class period and three laboratory periods.

560. *Bibliographic Resources for Research.* (1) Location and examination of general research materials in the University library. Services from other libraries in the community will be included. Individual guidance given students on materials related to their particular problems. A service course for graduate students who may elect it for no credit. One class period.

DEPARTMENT OF MUSIC

HERBERT F. MELLS, *Head*

The Music Department offers broad and specialized training to students with a view of developing within them the highest possible quality of musicianship and general appreciation. In addition to music teaching, training in skills and techniques necessary in other music profession is also provided. In connection with classroom work, a wealth of musical experience is gained through participation in musical organizations.

The department considers participation in these organizations very essential and necessary in the formal training of the student. It is, therefore, required of every music major and minor for each year of enrollment in the University. These organizations are the University Choir, Glee Clubs, Band, and Quartettes. Non-music majors and minors are also welcome to participate in these organizations with or without credit.

Written permission must be secured from the Office of the Music Department in order to enroll as a music major or minor. Regardless of the outcome of tests, standard or otherwise, the first year for music majors and minors is probationary after which the student is advised whether or not to continue as a major or minor in the department.

The department offers a curriculum for music majors and minors in Music Education, piano, voice, organ, Theory and Composition, and orchestral instruments.

Music majors may pursue a four-year program for the Bachelor of Science degree in Music Education, specializing either in piano, voice, organ or in an orchestral instrument. A five-year program for the Bachelor of Music Degree is also available with a major in either piano, voice, organ, Music Education, Theory and Composition. The Master of Science Degree with a major in Music Education is also offered through the Graduate Department.

All music majors and minors must take comprehensive examinations in the following areas during the final quarter of the third year.

Applied Instrument

Musicianship and Theory

Music Appreciation and History.

These examinations will be administered by the staff. Date of examinations will be announced each year.

All students majoring in applied music must give a satisfactory senior recital. Certain students majoring in Music Education will also be required to give senior recitals. The others will do an original thesis instead of a recital. Music majors, and minors must attend all concerts and recitals, students and professional each year.

The musical organizations of the department are the University Choir, Meistersingers, Concert Singers, University Band, Glee Club and Quartette. The women and men sections of the University Choir, Meistersingers, Concert Singers, respectively constitute the Glee Clubs of the Institution. These combined choral organizations constitute Tennessee A. & I. State University Festival Choir. These organizations are open to all students with or without credit. Information concerning credit requirements for the musical organizations will be found under course descriptions. Participation in the musical organizations of the department with or without credit is required of all music majors and minors during each year of enrollment. No exemptions are granted.

Curriculum for B.S. Degree with Major in Music Education, Major Applied an Orchestral Instrument

Freshman Year

	I	II	III
English 101-2-3	3	3	3
Music 120-1-2	3	3	3
Education 101-2	1	1	
History 121-2-3	3	3	3
Music 123-4-5	3	3	3
Music 134-5-6	1	1	1
Music 181-2-3	1	1	1
Music 141-2-3	1	1	1
Music 151-2-3	1	1	1
Phy. Ed. 101-2-3			
(Women)	1⅓	1⅓	1⅓
(Men)	⅓	⅓	⅓
Air Science 151-2-3	1	1	1
	18⅓	18⅓	17⅓

Sophomore Year

	I	II	III
English 211-2-3	3	3	3
Music 171	1		
Math 101			3
Music 220-1-2	3	3	3
Music 223-4-5	3	3	3
Psy. 211-243	3	3	
Music 104-5-6	1	1	1
Music 281-2-3	1	1	1
Music 211	1		
Music 251-2-3	1	1	1
Music 137-38		3	3
Phy. Ed. 201			
(Women)	1⅓		
Air Science 251-2-3	1	1	1
	18⅓	19	19

Junior Year

	I	II	III
Music 320-21	3	3	
Music 304			3
German, French, Spanish, or Italian 101-2-3	3	3	3
Music 301-2-3	3	3	3
Phy. Educ. 202-3			
(Women)	1⅓	1⅓	
Music 172-3	1	1	
Education 341			3
Music 212-13	1	1	
Music 381-2-3	3	3	3
Music 107-8-9	1	1	1
Music 351-2-3	1	1	1
(Women)	17⅓	17⅓	17⅓
Phy. Ed. 201-2-3			
(Men)	⅓	⅓	⅓
	16⅓	16⅓	17⅓

Senior Year

	I	II	III
Music 430-1-2	3	3	3
Music 271-2-3	1	1	1
Music 451-2-3	1	1	1
French, German, Spanish or Italian 201-2-3	3	3	3
Music 401-2	3	3	
Music 481-2	3	3	
Music 131			3
Music 305			3
Sociology 211		3	
Education 332	3		
Psychology 323			3
	17	17	17

Note: Students enrolled in Musicianship, major instrument, strings, woodwind classes, brass and percussion, orchestral conducting and orchestration must take *Band* with or without credit whether or not it appears in this curriculum or program of studies.

Curriculum for B.S. Degree with Major in Music Education, Major Applied Piano, Voice or Organ

Freshman Year

	I	II	III
English 101-2-3	3	3	3
Music 120-1-2	3	3	3
Introduction to Ed. 101-2	1	1	
Music 131-2-3	3	3	3
Music 123-4-5	3	3	3
Music 134-5-6	1	1	1
Music 141-2-3	1	1	1
Music 151-2-3	1	1	1
Music 111-12-13	1	1	1
Phy. Ed. 101-2-3			
(Women)	1⅓	1⅓	1⅓
Phy. Ed. 101-2-3			
(Men)	⅓	⅓	⅓
Air Science 151-2-3 (Men)	1	1	1
	18⅓	18⅓	17⅓

Sophomore Year

	I	II	III
Sociology 211			3
English 211-12-13	3	3	3
Music History 137-8	3	3	
Math 101			3
Music 220-1-2	3	3	3
Music 223-4-5	3	3	3
Psychology 211-243	3	3	
Music 104-5-6	1	1	1
Music 241-2-3	1	1	1
Music 251-2-3	1	1	1
(Women)	18	18	18
Air Science 251-2-3	1	1	1
(Men)	19	19	19

Junior Year

	I	II	III
Music 320-1	3	3	
Music 304			3
German, French, Spanish or Italian 101-2-3	3	3	3
Music 211-12-13	1	1	1
Music 301-2	3	3	
Music 341-2-3	3	3	3
Music 107-8-9	1	1	1
Music 351-2-3	1	1	1
Music 171-2-3	1	1	1
Phy. Ed. 201-2-3			
(Women)	1⅓	1⅓	1⅓
Phy. Ed. 201-2-3			
(Men)	⅓	⅓	⅓
Education 341			3
	17⅓	17⅓	17⅓

Senior Year

	I	II	III
Music 430	3		
Music 271-2-3	1	1	1
History 121-2-3	3	3	3
German, French, Spanish or Italian 201-2-3	3	3	3
Music 401-2	3	3	
Music 441-2-3	3	3	3
Music 451-2-3	1	1	1
Psychology 323			3
Music 311-2-3	1	1	1
Education 332		3	
Music 305			3
	18	18	18

Note: Students enrolled in Musicianship, major instrument, strings, woodwind classes, brass and percussion, orchestral conducting, and orchestration must take *Band* with or without credit whether or not it appears in their curriculum or program of studies.

Curriculum for Bachelor Music Degree Major in Theory and Composition

Applied Instrument Piano, Organ, Voice or an Orchestral Instrument

(Enrollment by Permission of Office Music Dept.)

First Year

	I	II	III
English 101-2-3	3	3	3
Music 120-1-2	3	3	3
Music 123-4-5	3	3	3
Music 131-2-3	3	3	3
Educ. 101-2	1	1	
Music 134-35-36	1	1	1
Applied Music	1	1	1
Phy. Ed. 101-2-3 (Women)	1⅓	1⅓	1⅓
Music 151-2-3 (Men)	1	1	1
Phy. Ed. 101-2-3 (Men)	⅓	⅓	⅓
Air Science 151-2-3 (Men)	1	1	1
	17⅓	17⅓	16⅓

Second Year

	I	II	III
English 211-12-13	3	3	3
Air Science 251-2-3	1	1	1
Music 231-2-3	3	3	3
Music 220-1-2	3	3	3
Math 101			3
Music 223-4-5	3	3	3
Psychology 211-243	3	3	
Music 104-5-6	1	1	1
Applied Music	1	1	1
Phy. Educ. 201-2-3 (Women)	1⅓	1⅓	1⅓
Phy. Educ. 201-2-3 (Men)	⅓	⅓	⅓
	18⅓	18⅓	18⅓

Third Year

	I	II	III
Music 320-1-2	3	3	3
Music 420-1-2	3	3	3
Music 251-2-3 or 211-2-3	1	1	1
German or Fren. 101-2-3	3	3	3
Applied Music	3	3	3
Music 107-8-9	1	1	1
Music 430-1-2	3	3	3
	17	17	17

Fourth Year

	I	II	III
History 121-2-3	3	3	3
Applied Music	3	3	3
Music 433-4-5	3	3	3
Music 428	3		
Psy. 361		3	
German or Fren. 201-2-3	3	3	3
Music 137-8	3	3	
Music 304			3
	18	18	15

Fifth Year

	I	II	III
History 201-2-3	3	3	3
Applied Music	3	3	3
Music 533-4-5	3	3	3
Music 305	3		
Music 337-8-9	3	3	3
Electives		3	3
	15	15	15

Curriculum for Bachelor Music Degree with Major in Piano, Organ or Voice

(Enrolled by Permission of Office of the Music Department)

First Year

	I	II	III
English 101-2-3	3	3	3
Music 120-1-2	3	3	3
Music 123-4-5	3	3	3
Music 131-2-3	3	3	3
Intro. to Ed. 101-2	1	1	
Music 134-5-6	1	1	1
Music 141-2-3 or 171-2-3 or 115-16-17	1	1	1
Music 151-2-3 or 111-12-13	1	1	1
Phy. Ed. 101-2-3 (Women)	1⅓	1⅓	1⅓
Phy. Ed. 101-2-3 (Men)	⅓	⅓	⅓
Air Science 151-2-3	1	1	1
	17⅓	17⅓	16⅓

Second Year

	I	II	III
English 211-12-13	3	3	3
Music 231-2-3	3	3	3
Music 220-1-2	3	3	3
Math. 101			3
Music 223-4-5	3	3	3
Psy. 211-243	3	3	
Music 104-5-6	1	1	1
Major applied	1	1	1
Phy. Ed. 201-2-3 (Women)	1⅓	1⅓	1⅓
Phy. Ed. 201-2-3 (Men)	⅓	⅓	⅓
Air Science 251-2-3 (Men)	1	1	1
	18⅓	18⅓	18⅓

Third Year

	I	II	III
Music 320-1-2	3	3	3
Music 420-1-2	3	3	3
Germ. or Fren. 101-2-3	3	3	3
Major Applied	3	3	3
Music 107-8-9	1	1	1
History 121-2-3	3	3	3
Music 211-12-13 or 251-2-3	1	1	1
	17	17	17

Fourth Year

	I	II	III
Music 428	3		
Germ. or Fren. 201-2-3	3	3	3
History 201-2-3	3	3	3
Music 304			3
Major Applied	3	3	3
Music History 137-38	3	3	
Elective			3
Psychology 361		3	
	15	15	15

Fifth Year

	I	II	III
Music 420-1	3	3	
Major Applied	3	3	3
Soc. 211-12-13	3	3	3
Music 337-8-9	3	3	3
Electives	3	3	6
	15	15	15

Curriculum for Bachelor Music Degree with Major in an Orchestral Instrument

(Enroll by Permission of Office of Music Department)

First Year

	I	II	III
English 101-2-3	3	3	3
Music 120-1-2	3	3	3
Music 123-4-5	3	3	3
Music 131-2-3	3	3	3
Music 134-5-6	1	1	1
Phy. Ed. 101-2-3 (Women)	1⅓	1⅓	1⅓
Major Instrument 181-2-3	1	1	1
Phy. Ed. 101-2-3 (Men)	⅓	⅓	⅓
Music 151-2-3	1	1	1
Air Science 151-2-3	1	1	1
	17⅓	17⅓	17⅓

Second Year

	I	II	III
Music 104-5-6	1	1	1
English 211-12-13	3	3	3
Music 220-1-2	3	3	3
Music 231-2-3	3	3	3
Math. 101			3
Music 223-4-5	3	3	3
Psychology 211-243	3	3	
Maj. Inst. 281-2-3	1	1	1
Phy. Ed. 201-2-3 (Women)	1⅓	1⅓	1⅓
Phy. Ed. 201-2-3 (Men)	⅓	⅓	⅓
Air Science 251-2-3	1	1	1
	18⅓	18⅓	18⅓

Third Year

	I	II	III
Music 320-1-2	3	3	3
Music 420-1-2	3	3	3
Germ. or Fren. 101-2-3	3	3	3
Maj. Inst. 381-2-3	3	3	3
Music 107-8-9	1	1	1
Music 141-2-3	1	1	1
History 121-2-3	3	3	3
Music 111-12-13	1	1	1
	18	18	18

Fourth Year

	I	II	III
History 201-2-3	3	3	3
Music 428	3		
Germ. or Fren. 201-2-3	3	3	3
Psy. 361		3	
Maj. Inst. 481-2-3	3	3	3
Music 137-8	3	3	
Music 241-2-3	1	1	1
Music 304			3
Electives			3
Music 251-2-3	1	1	1
	17	17	17

Fifth Year

	I	II	III
Music 430-1-2	3	3	3
Maj. Inst. 581-2-3	3	3	3
Music 305			3
Soc. 211-12-13	3	3	3
Music 337-8-9	3	3	3
Electives	3	3	
Music 211-12-13	1	1	1
	16	16	16

Curriculum for Bachelor Music Degree with Major in Music Education

(Major applied Orchestral Instrument, Piano, Organ, or Voice)

(Enrollment by special Permission of Office of Music Department)

First Year

	I	II	III
English 101-2-3	3	3	3
Musicianship 120-1-2	3	3	3
Intro. Educ. 101-2	1	1	
Music Appreciation 131-2-3	3	3	3
Elem. Harmony 123-4-5	3	3	3
Strings 134-5-6	1	1	1
Piano 141-2-3	1	1	1
Phy. Ed. 101-2-3 (Women)	1⅓	1⅓	1⅓
Phy. Ed. 101-2-3 (Men)	⅓	⅓	⅓
Univ. Choir 151-2-3	1	1	1
Air Science 151-2-3	1	1	1
	17⅓	17⅓	16⅓

Second Year

	I	II	III
Air Science 251-2-3 (Men)	1	1	1
English 211-12-13	3	3	3
History 121-2-3	3	3	3
Math 101			3
Adv. Musicianship 220-1-2	3	3	3
Adv. Harmony 223-4-5	3	3	3
Psychology 211-243	3	3	
Woodwinds 104-5-6	1	1	1
Piano 241-2-3	1	1	1
Phy. Ed. 201-2-3 (Women)	1⅓	1⅓	1⅓
Phy. Ed. 201-2-3 (Men)	⅓	⅓	⅓
	18⅓	18⅓	18⅓

Third Year

	I	II	III
Counterpoint 320-1-2	3	3	3
Choral Conducting 304			3
Music History 137-8	3	3	
German or French 101-2-3	3	3	3
Music Education 301-2-3	3	3	3
Piano 341-2-3	3	3	3
Brass and Percussion 107-8-9	1	1	1
Voice 171-2-3	1	1	1
	17	17	17

Fourth Year

	I	II	III
Orchestration 430-1-2	3	3	3
History 201-2	3	3	
Voice 271-2-3	1	1	1
Orchestral Conducting 305			3
German or French 201-2-3	3	3	3
Practice Teaching 401-2-3	3	3	3
Piano 441-2-3	3	3	3
	16	16	16

Fifth Year

	I	II	III
Piano 541-2-3	3	3	3
Soc. 211-12-13	3	3	3
Music History 237-38		3	3
Music 428		3	
Music 337	3		
Music 420-1-2	3	3	3
Educ. 341	3		
Psy. 323	3		
Education 322		3	
Psy. 361			3
	18	18	15

Students wishing to qualify for the A.B. Degree in Music in place of the B.S. Degree must substitute for certain courses in the B.S. Curricula two years of Laboratory Science or one year of Laboratory Science and one year of Math. The courses substituted must be recommended by the Office of the Music Department. Two years of the same foreign language are also required.

Curriculum for Music Minors

(Enrollment by Permission of Office of the Music Department)

1. *Music Education Minor* (Applied Instrument-Piano, Voice or Organ)

Course	*Credits*
Music 120-1-2	9 hrs.
Music 123-4	6 hrs.
Music 304	3 hrs.
Music 131-2-3	9 hrs.
Music 301-2-3	9 hrs.
Applied Music	15 hrs.
Music 151-2-3 or 111-2-3	3 hrs.

Students selecting organ or voice as the applied instrument must also take piano 141-2-3, credit 3 quarter hours, the prerequisite of which is satisfactory completion of all the material or the equivalent of piano 140.

2. *Music Education Minor* (Orchestral Instrument)

Music 120-1-2	9 hrs.
Music 123-4	6 hrs.
Music 131-2-3	9 hrs.
Major Applied-Orchestral Instrument	15 hrs.
Music 304	3 hrs.
Music 305	3 hrs.
Music 301-2-3	9 hrs.

3. *Music Minor* (Piano, Voice, or Organ)

Music 120-1-2	9 hrs.
Music 131-2-3	9 hrs.
Music Applied	15 hrs.
Music 123-4-5	9 hrs.
Music 137-38	9 hrs.

4. *Minor* (An Orchestral Instrument)

Music 120-1-2	9 hrs.
Music 131-2-3	9 hrs.
Music 123-4-5	9 hrs.
Orchestral Instrument	15 hrs.
Music 137-38	6 hrs.

5. *Theory and Composition*

Music 120-1-2	9 hrs.
Music 220-1-2	9 hrs.
Music 123-4-5	9 hrs.
Music 223-4-5	9 hrs.
Music 320-1-2	9 hrs.
Music 420	3 hrs.
Music 433	3 hrs.

Courses in Music

Undergraduate

Applied Music Courses

140. *Individual Piano for Beginners.* (0) Must be repeated each quarter until credit level is reached. Such level includes a satisfactory performance for the music staff, some of the easier work of Bach and other major composers,

and the major and minor scale. Two one half hour periods. Laboratory Fee $7.00.

141-2-3. *Individual Piano.* (3) Some of the easier works of Bach, Hayden, Mozart, Beethoven and others whose work are of equivalent technical value together with purely technical materials including all major and minor scales. Prerequisite: Permission from the Office of the Music Department. Two one half hour periods. Laboratory Fee $7.00.

241-2-3. *Individual Piano.* (3) Selected studies from Bach. Well tempered Clavichord volumes one and two and works of equivalent technical grade from other major composers are used in these courses. Prerequisite: Piano 143. Two one half hour periods. Laboratory Fee $7.00.

341-2-3. *Advanced Piano.* (9) A major Concerto, and other exacting materials requiring excellent musicianship, skills and technique used. Prerequisite: Piano 243. Two one half hour periods. Laboratory Fee $7.00.

441-2-3. *Advanced Piano.** (9) A continuation of the study of advanced materials. Prerequisite: Piano 343. Two one half hours. Laboratory Fee $7.00.

115-16-17. *Organ.* (3) This course includes pedal studies, major and minor scales, legato studies, little preludes and Fugues of Bach, Trios by Stainer Rheinberger and others, and selected books of Guilmant, Mendelssohn and other reputable composers. Prerequisite: The highest non-credit level of Piano 140 and permission from the Office of the Music Department. Two one half hours. Laboratory Fee $20.00.

215-16-17. *Organ.* (3) More advanced pedal studies and scales. Prerequisite: Organ 117. Two one half hours. Laboratory Fee $20.00.

315-16-17. *Advanced Organ.* (9) A continuation of pedal studies, scales in addition to the Toccata and Fugue in D Minor, and other major works, some from modern composers. Prerequisite: Organ 217. Two one half hour periods. Laboratory Fee $20.00.

415-16-17. *Advanced Organ.** (9) A continuation of Organ 317 with special emphasis on representative works from the various schools of composition including twentieth century composers. Prerequisite: Organ 317. Two one half hour periods. Laboratory Fee $20.00.

171-2-3. *Individual Voice.* (3) A study in breath control, and voice placement in tone production. Prerequisite: Permission from the Office of the Music Department. Two one half hours. Laboratory Fee $7.00.

271-2-3. *Individual Voice.* (3) A continuation of voice 173 which includes drills in voice placement, intonation, breathing, phrasing, diction, etc. Prerequisite: Voice 173. Two one half hour periods. Laboratory Fee $7.00.

371-2-3. *Advanced Voice.* (9) Continued drills in vocal techniques. Prerequisite: Voice 273. Two one half hour lessons. Laboratory Fee $7.00.

471-2-3. *Advanced Voice.** (9) Continued drills. Prerequisite: Voice 373. Two one half hour lessons. Laboratory Fee $7.00.

181-2-3. *Beginning Individual Violin.* (3) A study which includes individual instruction with standard elementary violin materials. Prerequisite: Permission from the office of the Music Department. Two one half hour periods. Laboratory Fee $7.00.

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*Approved for graduate credit.

281-2-3. *Intermediate Individual Violin.* (3) A study which includes individual instruction with standard elementary violin materials. Prerequisite: Violin 183. Two one half hour periods. Laboratory Fee $7.00.

381-2-3. *Advanced Individual Violin.* (9) A study which includes individual instruction with standard advanced violin materials. Prerequisite: Violin 283. Two one half hour periods. Laboratory Fee $7.00.

481-2-3. *Advanced Individual Violin.** (9) A study which includes individual instruction with standard advanced violin materials. Prerequisite: Violin 383. Two one half hour periods. Laboratory Fee $7.00.

181-2-3. *Beginning Individual Viola.* (3) A study which includes individual instruction with standard elementary viola materials. Prerequisite: Permission from the office of the Music Department. Laboratory Fee $7.00. Two one half hour periods.

281-2-3. *Intermediate Individual Viola.* (3) A study which includes individual instruction with standard elementary viola materials. Prerequisite: Viola 183. Laboratory Fee $7.00. Two one half hour periods.

381-2-3. *Advanced Individual Viola.* (9) A study which includes individual instruction with standard advanced viola materials. Prerequisite: Viola 283. Laboratory Fee $7.00.

481-2-3. *Advanced Individual Viola.** (9) A study which includes individual instruction with standard advanced viola materials. Prerequisite: Viola 383. Two one half hour periods. Laboratory Fee $7.00.

181-2-3. *Beginning Individual Clarinet.* (3) A study which includes individual instruction with standard elementary materials. Prerequisite: Permission from the office of the music department. Two one half hour periods. Laboratory Fee $7.00.

281-2-3. *Beginning Individual Clarinet.* (3) A study which includes individual instruction with standard elementary materials. Prerequisite: Clarinet 183. Two one half hour periods. Laboratory Fee $7.00.

381-2-3. *Advanced Clarinet (Individual).* (9) A study which includes individual instruction with standard advanced clarinet materials. Prerequisite: Clarinet 283. Two one half hour periods. Laboratory Fee $7.00.

481-2-3. *Advanced Clarinet (Individual).** (9) A study which includes individual instruction with standard advanced clarinet materials. Prerequisite: Clarinet 383. Two one half hour periods. Laboratory Fee $7.00.

181-2-3. *Beginning Individual Trumpet.* (3) A study which includes individual instruction with standard elementary trumpet materials. Prerequisite: Permission from the Office of the Music Department. Two one half hour periods. Laboratory Fee $7.00.

281-2-3. *Intermediate Individual Trumpet.* (3) A study which includes individual instruction with standard intermediate trumpet materials. Prerequisite: Trumpet 183. Two one half hour periods. Laboratory Fee $7.00.

381-2-3. *Advanced Individual Trumpet.* (9) A study which includes individual instruction with standard advanced trumpet materials. Prerequisite: Trumpet 283. Two one half hour periods. Laboratory Fee $7.00.

*Approved for graduate credit.

481-2-3. *Advanced Individual Trumpet.** (9) A study which includes individual instruction with standard advanced trumpet materials. Prerequisite: Trumpet 383. Two one half hour periods. Laboratory Fee $7.00.

NOTE: Other orchestral and band instruments are offered upon request, and follow the same course number and description, also applied music fee.

151-2-3. *University Choir.* (3) A study of a variety of the finest choral literature. Three or more periods.

251-2-3. *University Choir.* (3) A continuation of Univ. Choir. A study of a variety of the finest choral literature. Three or more periods.

351-2-3. *University Choir.* (3) A study of a variety of the finest choral literature. Prerequisite: Music 253. Three or more periods.

451-2-3. *University Choir.** (3) A study of a variety of the finest choral literature. Prerequisite: Music 353. Three or more periods.

161-2-3. *Concert Singers.* (3) An intensive study and preparation for public performance. A variety of choral literature for public performance and appearances. Prerequisite: Permission of the director. Five or more periods.

261-2-3. *Concert Singers.* (3) A continuation of Concert Singers. Prerequisite: Music 163. Five or more periods.

361-2-3. *Concert Singers.* (3) A continuation of Concert Singers. Prerequisite: Music 263. Five or more periods.

461-2-3. *Concert Singers.** (3) A continuation of Concert Singers. Prerequisite: Music 363. Five or more periods.

191-2-3. *Meistersingers.* (3) A thorough and exacting study of a variety of the finest choral literature. Musicianship growth and development are emphasized. Prerequisite: Permission from the Office of the Music Department. Two or more periods.

291-2-3. *Meistersingers.* (3) A continuation of the Meistersingers. Prerequisite: Music 193. Two or more periods.

391-2-3. *Meistersingers.* (3) A continuation of the Meistersingers. Prerequisite: Music 293. Two or more periods.

491-2-3. *Meistersingers.** (3) A continuation of the Meistersingers. Prerequisite: Music 393. Two or more periods.

134-35-36. *String Instruments Class.* (3) A study of the fundamentals of bowing, fingering, construction and care of string instruments. Two periods.

104-5-6. *Woodwind Instruments Class.* (3) A study of the fundamentals of woodwinds, the care, construction and performance. Two periods.

107-8-9. *Brass and Percussion Class.* (3) A study of the fundamentals of brass and percussion instruments, care, construction, training and performance. Two periods.

111-12-13. *University Band.* (3) A study and performance of the finest band literature. Prerequisite: Ability to play satisfactorily a band instrument. Five or more periods weekly.

211-12-13. *University Band.* (3) Continuation of Music 113. Prerequisite: Music 113. Five or more periods.

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311-12-13. *University Band.* (3) Continuation of Music 213. Prerequisite: 213. Five or more periods.

411-12-13. *University Band.** (3) Continuation of Music 313. Prerequisite: Music 313. Five or more periods.

Music Education

101-2-3. *Introduction to Public School Music.* (9) An introductory course in music for students in elementary education. The course consists of a thorough study in music fundamentals, terminology, scales, keys, rhythm and sight-singing drills and dictation. Three periods.

301. *Music Education for Music Majors.* (3) A study of principles, methods, materials, objectives and procedures for teaching music in Elementary Schools. Prerequisite: Permission from the Office of the Music Department. Three periods.

302. *Music Education.* (3) A study of principles, methods, materials, objectives and procedures for teaching music in secondary schools. Prerequisite: Music 301. Three periods.

303. *Music Education.* (3) Principles, methods, objectives and procedure for teaching band and orchestra in secondary schools. Prerequisite: Music 302. Three periods.

401. *Music Education.** (3) Observation and Music teaching in Elementary Schools. Prerequisite: Music 302. Three periods.

402. *Music Education.** (3) Observation and music teaching in Secondary Schools. Prerequisite: Music 401. Three periods.

403. *Music Education.** (3) Observation and teaching band and orchestra in Secondary Schools. Prerequisite: Music 402. Three periods.

304. *Choral Conducting.* (3) A study of the principles and problems of choral conducting, managing and directing choral organizations, the analysis and evaluation of choral materials. Prerequisite: Permission from the Office of the Music Department. Three periods.

305. *Orchestral Conducting.* (3) A study of the principles and problems of Orchestral Conducting. Prerequisite: Choral Conducting 301.

Music History and Appreciation

131-2-3. *Music Appreciation and History.* (9) A general course in music appreciation and history. Since emphasis of this course is on the development of the student's appreciation for the finest musical literature and a constant extension of his listening repertoire, only that history which will serve to make what he hears more meaningful to him, is included. Three periods.

231-2-3. *Music Appreciation.* (9) This course offers formal musical experiences in more advanced listening material and aims to build, substantially, a more extensive repertoire of the larger symphonic forms as well as other types of musical literature. Prerequisite: Music 133. Three periods.

137-38. *Music History.* (6) A general course in the history of music. Required of all music majors and minors. This course embodies an analytical approach to music history, its growth and development. Prerequisite: Permission from the Office of the Music Department. Three periods.

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237-38-39. *Music History.* (9) A general course of the history of music in America. Prerequisite: Music 138. Three periods.

337-38-39. *Music History.* (9) A general course in the history of Negro Musicians and their Music. Prerequisite: Music 138. Three periods.

Theory and Composition

120-1-2. *Musicianship.* (9) A course in music fundamentals, notation, ear training, sight singing and diction. Three periods.

220-1-2. *Musicianship.* (9) A continuation of Music 122. Prerequisite: Music 122. Three periods.

123-4-5. *Elementary Harmony.* (9) A study of the formation and progression of chords including dominant, diminished, leading tones, secondary sevenths, their inversions and modulation. This course includes ear training and keyboard drills. Three periods.

223-4-5. *Advanced Harmony.* (9) A study of the 9th, 11th, 13th altered chords, suspensions and embellishments. Ear training and keyboard drills are included. Prerequisite: Music 125. Three periods.

320-1-2. *Counterpoint.* (9) A study of the techniques underlying the principles used in writing good melodies and their associations without losing independence. Prerequisite: Music 225. Three periods.

420-1-2. *Form and Analysis.** (9) A study of compositions in the smaller and larger forms. Prerequisite: Music 225. Three periods.

423-24. *Choral Arranging.** (6) A systematic study and application of techniques for making choral arrangements. Prerequisite: Music 422. Three periods.

430-1-2. *Orchestration.** (9) A systematic study and application of the techniques for utilizing the capabilities of orchestral and band instruments in music composition. Prerequisite: Music 322. Three periods.

428. *Music Science.** (3) A study of the physical foundation of music. Prerequisite: Music 222. (See Physics Department.) Three periods.

361. *Psychology of Music.* (3) An introduction to the study of the mental processes involved in the production and enjoyment of music. Prerequisite: Music 222. (See Psychology Department.) Three periods.

433-34-35. *Elementary Music Composition.** (9) A study of compositions and the application of creative ability along systematic lines in writing original small part-forms. Prerequisite: Written permission from the office of the music department. Three periods.

533-4-5. *Advanced Music Composition.* (9) A study of compositions and the application of creative ability along systematic lines in writing original larger forms. Prerequisite: Written permission from the Office of the Music Department. Three periods.

DEPARTMENT OF PSYCHOLOGY

M. I. Claiborne, *Head*

The courses in the psychology department are designed to satisfy the needs of two groups of students: first, students who desire to major in psychology

*Approved for graduate credit.

as preparation for a career in psychology or who desire intensive training in psychology as a background for social work, personnel work, medicine, or psychiatry; and second, students who desire training in psychology as a part of the professional training for classroom teaching and other public school work. Students who complete the requirements for graduation with a major in psychology receive the Bachelor of Arts degree.

Requirements for a Major in Psychology

Requirements for a major in psychology are Psychology 221-22-23 (the basic course in general psychology) and thirty-six additional hours in psychology courses on the 300 and 400 level. Requirements for a minor in Psychology are Psychology 221-22-23, and eighteen additional hours in psychology courses on the 300 and 400 level.

Courses in other departments required for a major in psychology are: Biology 101-2-3, Zoology 311 (Heredity and Genetics), Mathematics 131-32, Sociology 211-12-13, two years French or German, Art Appreciation and Music Appreciation.

Recommended electives: general chemistry, human physiology, physics, and advanced courses in sociology.

Graduation requirements for the Bachelor of Arts degree in Psychology: fulfill general college requirements for graduation, earn a minimum of 195 hours credit including courses required for major, and maintain a 2.5 average in psychology courses on 300 and 400 level.

Psychology majors who desire to earn a teaching certificate should elect as a minor the subject field for which they wish to be certified, and choose their electives from that area and from the area of secondary education. (See Secondary Education for certificate requirements.)

Psycho-Educational Clinic

Children's Level: (A service to public schools) Mental testing and diagnosis of learning disabilities, with recommendations for treatment.

College Level: Educational guidance based on mental testing, aptitude testing, and interest and personality inventories. Diagnosis of academic failure on the college level and counseling relative to removing the causes of failure.

Reading Clinic: Diagnosis and correction of reading disability on both the child and adult level.

How to Study: (Psychology 100) Non-credit course, required of psychology majors, open to other students interested in developing correct study habits.

Advanced psychology majors and graduate students in education may receive credit for supervised work in the Psycho-Educational Clinic.

Curriculum for Psychology Majors

Freshman

	I	II	III
English 101-2-3	3	3	3
Biology 101-2-3	4	4	4
French or German 101-2-3	3	3	3
History 121-22-23	3	3	3
Mathematics 131-32	3	3	
Art Appreciation			3
Phy. Educ. 101-2-3 (Women)	1⅓	1⅓	1⅓
Phy. Ed. 101-2-3 (Men)	⅓	⅓	⅓
Air Science 151-2-3	1	1	1
	17⅓	17⅓	17⅓

Sophomore

	I	II	III
Psychology 221-22-23	3	3	3
Sociology 211-12-13	3	3	3
French or German 201-2-3	3	3	3
Zoology 311	4		
Psychology 311-243-253	3	3	3
Music Appreciation		3	
Elective			3
Phy. Ed. 201-2-3 (Women)	1⅓	1⅓	1⅓
Phy. Ed. 201-2-3 (Men)	⅓	⅓	⅓
Air Science 251-52-53	1	1	1
	17⅓	17⅓	17⅓

Junior

	I	II	III
Psychology 321-22-23	3	3	3
Psychology 341	3		
Psychology 351-52	3	3	
Psychology 411-12-13	4	4	4
Psychology 421			3
Electives	6	9	9
	19	19	19

Senior

	I	II	III
Psychology 431-32	3	3	
Psychology 461			3
Psychology 450 or 491		3	
Psychology 481			3
Electives	12	9	9
	15	15	15

Sequence of Courses

Courses in the Psychology Department for Students of Education: These courses carry education credit only; they will not count towards a major in psychology.

211. General Psychology for Teachers. (Five hour course, satisfies elementary certificate requirement for general phychology.)

243. Educational Psychology. (Required for secondary school certificate; also recommended for elementary education majors.)

253. Child Psychology. (Required for elementary school certificate.)

263. Adolescent Psychology. (Education credit for secondary school certificate.)

312. Measurement and Evaluation in Public Schools. (Education credit elementary or secondary school certificate.)

Psychology courses which carry education credit towards a certificate and/or psychology credit towards a major in psychology.

221-22-23. General Psychology. (Any three hours of this course may be used for three hours of education towards the secondary school certificate or to satisfy the three hours of general psychology required for the elementary school certificate; however students who take Psychology 221 are expected to complete the basic course in general psychology by taking Psychology 222 and 223. Students will not receive credit for both Psychology 211 and 221, nor will students be permitted to use Psychology 211 as the prerequisite for Psychology 222 or 223.

311. Elementary Statistics for Students of Psychology and Education

323. Mental Hygiene
401. Machine Scoring of Tests (one hour)
462. Psychometrics
463. Educational and Vocational Guidance

Psychology Courses: These courses do not carry education credit and may not be used to satisfy education requirements for a certificate.

321-22. Abnormal Psychology
341. Social Psychology
351-52. Genetic Psychology
411-12-13. Experimental Psychology
421. Comparative Psychology
431-32. Physiological Psychology
445. Psychology of Learning and Memory
450. Senior Project
451. Applied Psychology
452. Industrial and Vocational Psychology
461. Differential Psychology
473-74. Clinical Psychology
481. History and Schools of Psychology
491. Psychology Seminar

Graduate Courses

502. Advanced Statistics for Research in Psychology and Education
505-06-07. Advanced General Psychology
511. Research in Psychology
512. Educational Psychology Thesis Seminar
516-17. Advanced Experimental Psychology
523. Advanced Mental Hygiene and Personality Development
525. Theories of and Measurement of Personality
531. Psychometrics
532. Evaluative Techniques
533. Guidance Techniques
535. Educational and Vocational Counseling
543. Advanced Educational Psychology
545. Psychology of Learning
551. Emotional, Social, and Mental Growth
553. Advanced Child Psychology
555. Advanced Adolescent Psychology
561. Diagnosis and Remedial Techniques
563. Diagnosis and Correction of Reading Disability
566-67. Industrial Psychology
571-72. Clinical Testing
573-74. Clinical Psychology
575. Projective Techniques

Description of Courses

(Courses for Students of Education)

211. *General Psychology for Teachers.* (5) Designed to give the student a psychological background for applying psychological principles to school work; and to aid the student in understanding his own behavior and the behavior of others. This course will meet five days per week.

243. *Educational Psychology.* (3) Prerequisite: Psychology 211 or 221. Course deals primarily with psychological principles which may be effectively applied to learning in the classroom situation; emphasis is placed on growth and the relation between growth and learning.

253. *Child Psychology.* (3) Prerequisite: Psychology 211 or 221-22-23. Emphasis is upon the physical, emotional, social, and mental growth of the child from infancy to puberty, with an application of this knowledge to dealing with children in the elementary school.

263. *Adolescent Psychology.* (3) Prerequisite: Psychology 211 or 221-22-23 and Psychology 243. Emphasis is upon the development of and the problems of adolescents in the home, school and community environment. Attention is given to the guidance of adolescents.

312. *Measurement and Evaluation in Public Schools.* Prerequisite: General Psychology and Psychology 243. Course offers training in administering, scoring, processing, and using the results of standardized tests and other measures of progress in public schools; also training is offered in the construction of objective tests. Laboratory fee, $1.00.

Courses which Carry Either Psychology or Education Credit

311. *Elementary Statistics for Students of Psychology and Education.* Offers training in tabulating and processing scores and other data; covers measures of central tendency, measures of variability, the normal curve, and simple correlation. Recommended for students preparing to teach and required of all psychology majors.

323. *Mental Hygiene.* (3) Prerequisite: General Psychology. Primarily concerned with examining and interpreting procedures for protecting and preserving the mental health of the individual through wholesome adjustment to the environment, attention is given to practicing mental hygiene in the classroom. Highly recommended for all students preparing to teach; required of psychology majors.

401. *Machine Scoring of Tests.* (1) Prerequisite: Psychology 312. Offers training and practice in scoring tests on an I.B.M. machine. One hour practice per day required. Approval of instructor required.

462. *Psychometrics.* (3) Prerequisites: Psychology 311 and 312. Deals with the theory and practice of psychological measurement. Training and practice is offered in the use of individual and group measures of intelligence, achievement, aptitude and personality.

463. *Educational and Vocational Guidance.* (3) Prerequisite: Psychology 243 and 312. Designed to give training to prospective directors of guidance and to home room teachers and others responsible for guiding pupils in school; offers training in giving guidance to pupils based upon measures of intelligence, aptitude, and interests; attention is given to planning, developing, and directing a program of guidance.

221-22-23. *General Psychology.* (9) The course is designed to acquaint the student with the fundamental principles of human behavior and experience, the scope of psychology, and the methods of psychological research. It is the basic course in general psychology and is required of all students majoring or minoring in psychology; and is a prerequisite for all advanced courses in psychology. (Three hours of this course may be used for education credit towards satisfying requirements for elementary or secondary school certificates.)

Courses Which Carry Psychology Credit Only

321-22. *Abnormal Psychology.* (6) Lectures, discussions, and review of case studies concerning the nature, causes, and treatment of pathological behavior. Observation trips shall be made to institutions for the care and treatment of mental patients.

341. *Social Psychology.* (3) Lectures and discussions of social behavior and application of principles of psychology to social behavior.

351-52. *Genetic Psychology.** (6) The origin and development of behavior in the individual, giving special attention to differentiating between the effect of heredity, maturation, and learning on the development of behavior.

411-12-13. *Experimental Psychology.* (12) Offers training in applying the scientific procedure of experimentation to the study of psychological phenomena in the various fields of psychology.

421. *Comparative Psychology.* (3) The study of animal behavior with special attention to learning, and the application of the data to behavior and learning in man.

431-32. *Physiological Psychology.* (6) A study of the sensory, motor, and adjustor (brain) mechanism as they relate to behavior.

445. *Psychology of Learning and Memory.** (3) Examines critically and interprets the data from experiments on learning and memory and summarizes the theories of learning that have evolved from them.

451. *Applied Psychology.* (3) Offers training in applying the principles of psychology to human relations in the everyday world of business and industry.

452. *Industrial and Vocational Psychology.* (3) Applies psychological principles to industry with emphasis on personnel problems in industry. Course deals specifically with psychological factors affecting efficiency and morale.

461. *Differential Psychology.* (3) Prerequisites: Elementary Statistics and a course in Testing. An intensive study of individual differences, with emphasis on discovery, measurement, and interpretation.

471-72. *Clinical Psychology.** (6) An application of clinical procedures to the diagnosis and treatment of behavior problems.

481. *History and Schools of Psychology.* (3) Gives special attention to the historical development of psychology as a science, and to the fundamental concepts of the various schools of psychology.

491. *Psychology Seminar.* (3) Attention is given to current psychological literature, and guidance is given to students interested in working on special problems in psychology. (Course limited to psychology majors with senior standing; may be taken instead of Psychology 450, senior project.)

*Approved for graduate credit.

543. *Advanced Educational Psychology.* (3) (Core course, required of all students majoring in education.) A critical examination of psychological concepts basic to learning in the school situation. Topics critically examined: growth and development, motivation, and theories of learning, with emphasis on application to the classroom situation. Attention is given to experimental investigation in educational psychology.

545. *Psychology of Learning.* (3) Required of Educational Psychology Majors. Course consists of a critical examination of the theories of learning and a practical application of such theories to learning in the school situation.

551. *Emotional, Social, and Mental Growth of Children.* (3) Required of Educational Psychology Majors. A study of the emotional, social and mental growth of children from infancy to adolescence, with emphasis on the interrelatedness of growth and the nurture necessary for growth. Observation in the college nursery school required as a part of the course.

553. *Advanced Child Psychology.* (3) A critical study of professional literature relating to child growth and behavior; with emphasis on understanding children and procedures for studying children.

555. *Advanced Adolescence Psychology.* (3) A critical examination of professional literature relating to Adolescent growth and behavior. Emphasis is on understanding adolescents and their problems, and studying adolescents in the classroom situation.

561. *Diagnosis and Remedial Techniques.* (3) Course offers training in the selection, use, and interpretation of diagnostic tests and other techniques for discovering the causes of learning disabilities in the regular school subjects (except reading) and methods for correcting the learning difficulties.

563. *Diagnosis of Reading Disability and Remedial Reading.* (3) Offers training and practice in techniques the regular classroom teacher may use to discover the retarded reader, to analyze the nature and cause of the reading difficulty, and to correct the difficulty. The students will be given an opportunity to work with a retarded reader.

566-67. *Industrial Psychology.* (6) Deals with employee selection, employer-employee relations, job analysis, and psychological factors affecting fatigue, efficiency, and morale.

571-72. *Clinical Testing.* (6) The course offers training and practice in administering, scoring, and interpreting tests used for clinical purposes, with emphasis on the use of individual verbal, and non-verbal mental tests, and measures of personality. The student is required to acquire proficiency in administering, scoring, and interpreting the Stanford Binet Test.

573-74. *Clinical Psychology.* (6) Applies clinical procedures to the diagnosis and treatment of behavior problems, with emphasis on the behavior problems of children. Prerequisite: an undergraduate major or minor in psychology.

575. *Projective Techniques.* (3) Designed to familiarize the student with the uses of projective techniques.

Graduate Courses

502. *Advanced Statistics for Research in Education and Psychology.* (3) (Core course, required of all graduate students majoring in education, presupposes a knowledge of elementary statistics.) Offers training and practice in the application of statistics to research. Topics studied are: harmonic and geometric mean, variance and covariance, curve fitting, sampling, reliability, and simple, multiple, and partial correlation.

505-06-07. *Advanced General Psychology.* (9) Basic course required for a graduate major in psychology. Deals with the history and present status of psychology including an examination of and a critical discussion of the schools of psychology; and a consideration of major current psychological problems. Materials for the course will be taken from current professional literature as well as from basic texts in the field.

511. *Research in Psychology.* (3) Course deals with methods of research peculiar to psychology. Included are: type of problems in psychology, methods of collecting data, interpretation of data, and reporting of findings.

512. *Educational Psychology Thesis Seminar.* (3) Required of (and limited to) Educational Psychology majors; and to be taken in conjunction with the doing of the research project. Course content: critical discussion of the research projects in progress and of the literature related to such projects. Credit awarded upon acceptance of the written report and passing the oral examination.

516-17. *Advanced Experimental Psychology.* (6) (One lecture and four hours laboratory per week.) Experimental methods of investigation of psychological problems, primarily in the general area of physiological and comparative psychology.

523. *Advanced Mental Hygiene and Personality Development.* (3) Required of Educational Psychology majors. Course deals with a technical consideration of the principles of mental hygiene and personality development; with emphasis on the problems of mental hygiene encountered by parents, teachers, social workers and others who deal with children.

525. *Theories of and Measurement of Personality.* (3) Examines the theories of personality development and offers training in measuring and appraising personality.

531. *Psychometrics.* (Advanced Course in Testing) (3) Required of all Educational Psychology majors. Deals with the theory and practice of psychological measurement. Training is offered in the construction, use and interpretation of measures of intelligence, aptitude, achievement, and personality.

532. *Evaluative Techniques.* (3) Deals with a critical examination of the techniques used in evaluation, and offers the student an opportunity to develop evaluative criteria and procedures for evaluating the total school program or any particular area of the school program.

533. *Techniques of Guidance.* (3) Critically examines the techniques used in guidance, and offers the student an opportunity to acquire skill in using the techniques.

535. *Educational and Vocational Counseling.* (3) An advanced course in guidance with the emphasis on interviewing and counseling; also considered are: collecting vocational information, studying the counselee, and formulating and conducting a program of guidance.

SCHOOL OF ENGINEERING

BENSON A. DUTTON, *Chairman*

FACULTY

BENSON L. DUTTON, *Professor of Civil Engineering and Chairman of the School of Engineering.*

FRED W. BRIGHT, *Professor and Head of the Department of Electrical Engineering.*

FRANK A. CROSSLEY, *Professor and Head of the Department of Foundry Engineering.*

JOHN D. HARLEY, *Professor and Head of the Department of Mechanical Engineering.*

WILLIAM V. HARPER, *Professor of Industrial Education and Coordinator of Industrial Relations.*

L. WINTER MCKISSACK, *Professor of Architecture and Head of the Department of Engineering Drawing.*

WILLIAM C. MCNEILL, *Professor of Civil Engineering and Head of the Department of Building Construction Engineering.*

JAMES A. PARSONS, *Visiting Professor of Foundry Engineering and Metallurgy.*

WILSON S. ALLEN, *Associate Professor of Building Construction Engineering.*

*WALTER H. DABNEY, *Associate Professor of Civil Engineering.*

ALONZO J. FAIRBANKS, *Associate Professor of Electrical Engineering.*

MARSHALL L. FIELDS, *Associate Professor of Industrial and Supervisor of Metal Trades.*

HARRY E. LASH, *Associate Professor of Engineering Drawing.*

CECIL M. RYAN, *Associate Professor and Head of the Department of Aviation Education.*

PRESTON E. STEWART, *Associate Professor of Industrial Education, Head of the Department of Vocational Technical Training and Supervisor of Industrial Education.*

LEONARD C. CLARK, *Assistant Professor of Electrical Engineering.*

LEON C. FARBES, *Assistant Professor of Industrial Education and in charge of Carpentry Shop.*

ELLIOTT H. GRAY, *Assistant Professor of Industrial Education and in charge of Aero Mechanic Shop.*

GEORGE O. HENDERSON, *Assistant Professor of Electrical Engineering.*

HAYES M. HOWARD, *Assistant Professor of Industrial Education and in charge of Masonry Shop.*

GORDON H. MOORE, *Assistant Professor of Industrial Education and in charge of the Plumbing Shop.*

JOHN G. SANDERS, *Assistant Professor of Industrial Education and in charge of Radio Shop.*

HARRY W. TAYLOR, *Assistant Professor of Industrial Education and in charge of Auto Mechanics Shop.*

MORRIS E. TIPTON, *Instructor in Upholstery.*

DELL S. CROWDER, *Instructor Technician of Refrigeration and Air-Conditioning.*

DOAKES R. WASHINGTON, *Technician in Foundry.*

WILLIAM K. BROWN, *Automotive Technician.*

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*On leave of absence.

General Information

The School of Engineering offers in cooperation with the several schools of the university, undergraduate courses of study, normally four years (i.e. twelve quarters of eleven weeks each) in length, leading to the Bachelor of Science Degree in Building Construction, Civil, Electrical, Foundry and Mechanical Engineering; Industrial and Aviation Education.

The school also offers undergraduate courses on a vocational technical level for two years (i.e. six quarters with minimum average accumulated clock hours per quarter of 334) terminal in: Aero Mechanics, Auto Mechanics, Cabinet Making, Carpentry. Commercial Refrigeration and Air-Conditioning, Drafting, Electricity, Electrical Household Appliances, Foundry, Masonry, Plumbing and Heating, Radio, Sheet Metal and Upholstering all leading to a certificate of specialized training. Related college instruction is also given in the courses.

The school may from time to time revise any of its curricula in order to conform with technological advancement or for purposes of accreditation. Students may however, graduate under the course outline required at the time of their entering, or they may elect with the approval of their adviser equivalent revised courses.

The School of Engineering of Tennessee A. & I. State University is located in the greatest area of industrial expansion in the Southeast. It is within two hundred miles of the Tennessee Valley Authority and the Atomic Energy Commission's Oak Ridge Plant; near the foundry and steel mills of Middle Tennessee and Alabama and in the midst of the largest source of hydro-electric power in the East. In Nashville unusual opportunities for firsthand study of foundries, waterworks, large construction projects and other similar engineering enterprises are on hand; together with engineering organization to provide field instruction.

The School of Engineering has a physical Plant of over one and one half million dollars consisting of:

1. Engineering Building—In this building are located the foundry, electrical, physical testing, cement and soils, combustion engines, refrigeration and air-conditioning, hydraulics, and model-making laboratories; four drafting rooms; auditorium; classrooms and reading rooms; and offices.
2. Industrial Building—In this building are located the machine, welding, sheet metal, refrigeration, radio and electrical vocational-technical training shops. This building is fully equipped with lathes, milling machines, sheet metal and welding machines.
3. The Vocation Shop Building—The aero and auto mechanics shops; aviation education and masonry shops are located in this building with equipment for flight training and aviation mechanics. Equipment consists of testing equipment, link trainer and radial engines.

Department of Building Construction Engineering

William C. McNeill, Jr., *Head*

A specialized branch of civil engineering supplemented by architectural design; it is fundamental design of buildings. The building construction engineer is equipped to design light modern structures and enter his profession as an assistant on a construction project; or through his knowledge of building construction, he may serve as a superintendent of maintenance for housing and institutional plants.

Department of Civil Engineering

B. L. Dutton, *Head*

The oldest branch of the engineering profession, civil engineering is concerned primarily with the planning, design, and construction of the permanent works of modern industry and urban life, such as transportation routes with their incidental tunnels, bridges, locks, terminals, airports, and other structures; water supply and power developments, irrigation, drainage, sewage, and the various basic services of modern life. Such works are usually characterized by large initial expenditures and are designed for relatively long periods of service. The civil engineer is, thus, frequently referred to as a capital goods engineer in contrast to the other engineering branches, which are primarily occupied in the production of consumer goods.

Traditionally, civil engineering is closely allied to architecture, both being developments of the ancient profession of the master builder. The civil engineer, whatever his special field of interest, is almost invariably a structural expert and, in the design of many modern structures, not only gives due attention to aesthetic considerations but is often closely associated with the architect.

Thus, the civil engineering graduate will usually enter his profession as an assistant on a construction project or in a design office. His employer in the former case will almost invariably be an engineering contracting company engaged in heavy construction. In the latter case he may be a consultant in one of the civil engineering specialties, as industrial organization, or one of the many departments of federal, state, or municipal government engaged in some of the major projects of modern times.

Department of Electrical Engineering

Fred W. Bright, *Head*

The electrical engineer is active in one or more of the many branches of this profession having to do with the generation, transmission and utilization of electrical energy. Electrical engineering may be said to have been fully recognized as a major branch of engineering following the successful completion of Edison's pioneer central power plant and lighting system in New York in 1882. Steady and rapid developments in the power field have since been made with giant power plants, now tied together by a network of high-voltage transmission lines, serving load centers in various parts of the country.

The discovery of the Edison effect gave birth to modern electronic science which has expanded the communication systems fathered by Morse and Bell to the extent that today there exist worldwide facilities for the transmission of intelligence by word and picture. Electronic science has also led to the development of methods of control, measurement and calculation having very

great accuracy and of such universal application that almost every branch of science employs them.

DEPARTMENT OF FOUNDRY ENGINEERING

FRANK A. CROSSLEY, *Head*

The foundry industry through the Foundry Educational Foundation is encouraging engineering students to enter foundry work. Throughout the Midwestern area, numerous foundries are operating at peak production. The opportunities for trained foundry engineers, capable of assuming supervisory positions are significant both in quantity and quality.

An option in foundry engineering is offered to students of mechanical engineering. This option requires the completion of fifteen hours of foundry courses. The courses required are: F. E. 313, Foundry Theory; F. E. 323, Foundry Practice; F. E. 450, Senior Project in Foundry Research; F. E. 451, Advanced Foundry Theory; and F. E. 461 Advanced Foundry Practice.

At the present time the Department of Foundry Engineering does not offer a curriculum leading to a Bachelor of Science Degree. Such an offering will not be possible until such time that facilities are made available to do so.

DEPARTMENT OF MECHANICAL ENGINEERING

JOHN D. HARLEY, *Head*

The mechanical engineer is concerned with the design, construction, selection, operation, and maintenance of machines, whether constituting running or stationary equipment. His services are thus involved directly or indirectly wherever machines or mechanical equipment are made or used. Engines and turbines together with their associated equipment for the generation of power by steam, hydro or internal-combustion processes in stationary or transportation services, are of particular concern to the mechanical engineer in the power field. Yet, while power generation is basic and important, it is essential to recognize the even greater field of power utilization for transportation as in ships, aircraft, rail and highway vehicles, as well as in transport and conveyor systems, and through the use of machine tools in modern manufacturing processes. The branches of mechanical engineering are, indeed, older than the field of power generation. The mechanical engineer has always been concerned with production, wherever hand tools, machine tools, or process equipment are employed. There are, thus, an almost limitless number of problems and opportunities in the better design, utilization, operation, and maintenance of such apparatus.

The young man entering engineering will find ample opportunity for the exercise of his best abilities, not only in one of the above mentioned branches of the profession but also, if he prefers to follow them, in the operating, management, or sales activities of industry.

COURSES IN ENGINEERING

Undergraduate

101. *Engineering Orientation.* (1) A survey course in the application of mathematics to engineering problems. Use of geometry and application of basic physical laws. Two lecture periods.

102. *Engineering Orientation.* (1) A continuation of Engineering 101, with emphasis on exponential quantities, simultaneous equations, graphs in the solution of elementary technical problems. Two lecture periods.

103. *Engineering Orientation.* (1) Problems in the use of the slide rule involving multiplication, division, roots, powers and trignometric functions. Two lecture periods.

203. *Analytical Mechanics Statics.* (3) A course in the theory of analytical mechanics and the principles of statics. Instruction given in force system, equilibrium, centroids, center of gravity, friction, and moment of inertia. Prerequisites: Math. 262; Physics 221. Three lecture periods.

301. *Analytical Mechanics Dynamics.* (3) Instruction is given in principles of kinetics and kinematics. Contents of the course includes the theory of rectilinear, curvilinear and rotary motion, impact stresses, and impulse and momentum. Prerequisites: Eng. 203; Math. 263. Three lecture periods.

303. *Materials Testing.* (3) A laboratory course in testing properties of wood, metal and refractory products; control of concrete mixtures; instruction in field tests for determining quality of cement; analysis of and fine aggregates. Prerequisite: Eng. 342. One lecture and four laboratory periods. Fee $2.00.

312. *Welding Engineering.* (3) A laboratory course in welding processes, metallurgy, metallography, physical tests, and inspection of welds, design of weldment, application to the design and production of machines and structures. One lecture period and four laboratory periods. Fee $2.00.

342-43. *Strength of Materials.* (3) Stress and strain, direct and shearing stresses, torsion and bending, riveted and welded joints, short column, tension members, shafts and beams, deflection, statically indeterminate beams, combined stresses, column theory, non-homogeneous beams. Prerequisites: Eng. 203, Physics 221, Math. 261-62. Three lecture periods.

COURSES IN ENGINEERING DRAWING

Undergraduate

101. *Basic Drafting.* (3) Instruction in the use of drawing instruments, freehand lettering and technical sketching, orthographic projection and auxiliary views. Six laboratory hours, required of all Engineering and Industrial Education students. Prerequisite: Plane Geometry. Fee $2.00.

102. *Elements of Mechanical Drafting.* (3) Sections and dimensioning practice, pictorial representation, freehand lettering and technical sketching. Six laboratory hours. Required of all Engineering and Industrial Education students. Prerequisite: Engineering Drawing 101 or equivalent. Fee $2.00.

103. *Working Drawings.* (3) Representation of screw threads, fasteners, springs, gears; pipe drawing. Working drawings of machine parts. Freehand lettering and technical sketching. Six laboratory hours. Required of all Engineering and Industrial Education students. Prerequisite: Engineering Drawing 102 or equivalent. Fee $2.00.

201. *Descriptive Geometry.* (3) An elementary study of the point, line and plane, with theoretical and practical problems. Six laboratory periods. Required of all Mechanical, Building Construction and Civil Engineering students. Prerequisite: Engineering Drawing 103. Fee $2.00.

202. *Descriptive Geometry.* (3) Curved surfaces, their tangent lines and planes; the intersection of surfaces, developments, shades and shadows, perspective. Six laboratory hours. Required of all Civil, Mechanical and Building

Construction Engineering students. Prerequisite: Engineering Drawing 201. Fee $2.00.

211. *Descriptive Geometry.* (3) A one quarter condensed course in descriptive geometry for those curricula which do not require the broader 201, 202 series. This course includes the representation of the point, line and plane, and curved surfaces; intersection of surfaces; developments. Six laboratory hours. Required of all Aviation Education and Industrial Education students. Prerequisite: Engineering Drawing 103. Fee $2.00.

212. *Special Problems in Drawing.* (3) Simulated and actual drafting problems of advanced character, related to the students major field in Industrial Education. Library research, field trips, use of professional equipment. Reproduction methods. Prerequisite: Engineering Drawing 211 or equivalent and the approval of the Major Advisor. Six laboratory hours. Fee $2.00.

213. *Special Problems in Drawing.* (3) Continuation of Engineering Drawing 212 with emphasis on systematic analysis and solution of a drafting problem as an application of scientific method. Prerequisite: Engineering Drawing 212. Six laboratory hours. Fee $2.00.

Curriculum in Building Construction Engineering

Freshman Year

	I	II	III
Mathematics 161-2-3	5	5	5
English 101-2-3	3	3	3
Chemistry 111-12-13	4	4	4
Eng. Drawing 101-2-3	3	3	3
*Shop Practice 101	3	3	
Civil Eng. 211			3
Engineering 101-2-3	1	1	1
Air Science I	1	1	1
Physical Ed. 101-2-3	⅓	⅓	⅓
	20⅓	20⅓	20⅓

Sophomore Year

	I	II	III
Mathematics 261-2-3	3	3	3
English 211	3		
Speech 202-3		3	3
Economics 211	3		
Mathematics 311			3
Physics 221-22-23	4	4	4
Engineering 203-301		3	3
Civil Eng. 212-13	3		3
Eng. Draw. 201-2	3	3	
Non-technical elective		3	
Air Science II	1	1	1
Physical Ed. 200's	⅓	⅓	⅓
	20⅓	20⅓	20⅓

Junior Year

	I	II	III
Bldg. Const. Eng. 301-2-3	6	6	6
Bldg. Const. Eng. 311-12-13	3	3	3
Bldg. Const. Eng. 321-22-23	3	3	3
Engineering 303			3
Civil Engineering 333			3
Engineering 342-43	3	3	
Accounting 241	3		
Non-technical elective		3	
	18	18	18

Senior Year

	I	II	III
Civil Engineering 301-2	3	3	
Civil Engineering 441	3		
Civil Engineering 442-43		3	3
Civil Engineering 452-53		3	3
Bldg. Const. Eng. 401-2-3	6	6	6
Bldg. Const. Eng. 450			3
Civil Engineering 451	3		
Ind. Education 411	4		
Non-technical electives		3	3
	18	18	18

*Building Construction and Civil Engineering majors may elect any two of the following shop courses:

Woodwork 101, Electricity 101, Masonry 101, and Plumbing 101.

Courses in Building Construction Engineering

Undergraduate

301-2-3. *Materials and Methods of Building Construction.* (18) Structural materials, assembly systems and details used in dwellings, semi-fire proof and fire proof buildings; construction details and methods of organization for foundations, walls, floors, coverings, roofs and bearing partitions. Lectures, reports, readings and drawings. Prerequisites: Eng. Draw. 202, Eng. 203. Two lectures and three laboratory periods. Laboratory fee $3.00.

311-12-13. *History of Architecture.* (9) A description and analysis of the development of architecture, town planning, landscape architecture, painting sculpture related to the cultural setting. Ancient through early Medieval times, Renaissance, and Baroque Periods to the present day. Three lecture periods.

321-22-23. *Architectural Design.* (9) Analysis and solution of simple buildings; principles of spatial and structural organization, study of space and mass, structural details; outline specifications, research, discussions, drawings, models. Prerequisites: Eng. Draw. 201-2. Three laboratory and critic periods. Laboratory fee $1.00.

401. *Construction Methods and Problems.* (6) Problems involving theory and design of mechanical equipment of buildings; heating and air-condition. Discussions, research, computations and drawings. Prerequisite: Physics 223. Two lectures and three laboratory periods. Laboratory fee $3.00.

402. *Construction Methods and Problems.* (6) Problems involving theory and design of the mechanical equipment of buildings; lighting and wiring. Discussions, research, computations, drawings. Prerequisite: 401. Two lectures and three laboratory periods. Laboratory fee $3.00.

403. *Construction Methods and Problems.* (6) Estimating, job superintendence and management. Prerequisites: Bldg. Const. Eng. 402, Civil Eng. 302, 441, 443, 451. Two lectures and three laboratory periods.

450. *Senior Project.* (3) All seniors are required to select and execute a project under the supervision of their major adviser to be approved by the chairman of the school. It may involve the designing and making of a project complete with drawings, pictures, specifications and detail data involved in its construction; or, a research and compilation of a subject within the field of the student's interest.

Curriculum in Civil Engineering

Freshman Year

	I	II	III
Mathematics 161-2-3	5	5	5
English 101-2-3	3	3	3
Chemistry 111-12-13	5	5	5
Eng. Draw. 101-2-3	3	3	3
*Shop Practice 101	3	3	
Civil Eng. 211			3
Engineering 101-2-3	1	1	1
Air Science I	1	1	1
Physical Ed. 101-2-3	⅓	⅓	⅓
	20⅓	20⅓	20⅓

Sophomore Year

	I	II	III
Mathematics 261-2-3	3	3	3
English 211	3		
Speech 202-3		3	3
Economics 211	3		
Mathematics 311			3
Physics 221-22-23	4	4	4
Enginering 203-301		3	3
Civil Eng. 212-13	3		3
Eng. Draw. 201-2	3	3	
Non-technical elective		3	
Air Science II	1	1	1
Physical Ed. 200's	⅓	⅓	⅓
	20⅓	20⅓	20⅓

Junior Year

	I	II	III
Civil Engineering 301-2-3	3	3	3
Civil Engineering 311-12-13	3	3	3
Civil Engineering 333	3		
Bacteriology 241	4		
Engineering 303			3
Civil Engineering 332		3	
Engineering 342-43	3	3	
Civil Engineering 321	3		
Elect. Eng. 202-3		4	4
Mechanical Eng. 402		3	
Non-technical elective			3
Foundry Eng. 311			3
	19	19	19

Senior Year

	I	II	III
Civil Engineering 401-2-3	3	3	3
Civil Engineering 412			3
Civil Engineering 421-22-23	3	3	3
Civil Engineering 431-32-33	3	3	3
Civil Engineering 441-42-43	3	3	3
Civil Engineering 452-53		3	3
Civil Engineering 451	3		
Civil Engineering 450		3	
Non-technical elective	3		
	18	18	18

Woodwork 101, Electricity 101, Masonry 101, and Plumbing 101.

Courses in Civil Engineering

Undergraduate

211. *Elementary Surveying.* (3) An elementary and basic course in the theory of surveying; with field practice in the use and care of the ordinary surveying instruments. Required of all engineering students. Prerequisite: Mathematics 162. One lecture and two laboratory periods.

212-13. *Advanced Surveying.* (6) A continuation of 211 emphasizing field methods of topographical and land surveys. Computations on latitudes and departures, closure of traverses, land area problems; stadia methods, triangulation and topography. Prerequisite: 211. One lecture and two laboratory periods.

301. *Theory of Structures I.* (3) A course in the analysis of stresses due to fixed loads on statically determinate structures. Application of shear and moment diagrams to beams, columns and girders. Prerequisites: Physics 221, Math. 261-62. Three lecture periods.

302. *Theory of Structures II.* (3) A course in the analysis of stresses due to movable loads on statically determinate structures. Application of principles of highway and railroad moving load diagrams; use of shear and moment influence lines in the design of bridges. Prerequisite: 301. Three lecture periods.

303. *Theory of Structures III.* (3) A course in the application of elastic theory, moment distribution and method of least work in the application of elastic theory, moment distribution and method of least work in the analysis of statically indeterminate structures. Prerequisites: 301-2. Three lecture periods.

311-12-13. *Hydraulics.* (9) A course in the fundamentals of fluid behavior. It deals with the properties of fluids; theory of hydrostatics; basic principles of fluid flow and measurements, the study of applied flow in pipes, open channels; and water power machinery. Prerequisites: Eng. 203, 301. Two lectures and one laboratory period. Laboratory fee $2.00.

321. *Route Surveying.* (3) A course in curves and earthwork problems with application to heavy construction; practice in establishing line and grade for highways, railways, sewers, water and steam distribution lines, and other underground utilities; setting slope stakes; and erection of batter boards. Prerequisites: C. E. 211-12-13. One lecture period and four laboratory periods.

332. *Concrete Construction.* (3) A laboratory course in the design and control of concrete mixes and methods of forming, placing and curing concrete. One lecture period and two laboratory periods. Laboratory fee $2.00.

333. *Engineering Geology.* (3) A course in the materials of the earth and their structures; physiography. The practicum consists of field work; the study of topographic and geologic maps; and of rocks and minerals.

401. *Elements of Railway Design.* (3) A course in civil engineering problems of railway design and construction with application to preliminary investigation of traffic, gradient, alinement and earthwork; nomenclature of railway track and switching devices; and construction of rock bed. Prerequisite: Civil Eng. 321. Three lecture periods.

402. *Highway Design.* (3) A course in the design of road systems, city streets, pavement types; preparation of plans, specification and estimates of cost for various classifications of roads. Prerequisites: 321, 401. Three lecture periods.

403. *Highway Administration.* (3) A course in the relation of road and street improvement to social and economic welfare; highway organization; highway and pavement financing. Prerequisites: Civil Eng. 401-2. Three lecture periods.

412. *Estimating and Valuation.* (3) A course in the practice of making valuation studies and quantity surveys; economic selection; construction cost estimating and cost accounting; appraising; and progress records. Prerequisites: Civil Eng. 303, 442, 451. One lecture period and two laboratory periods.

421. *Hydrology.* (3) A course in the elements of the processes governing the depletion and replenishment of the water resources of the land areas of the earth. Prerequisites: Math. 311, Civil Eng. 313.

422. *Waterworks Engineering.* (3) A course in the theory and design of the collection, purification, purification and distribution of public water supplies. Prerequisite: Civil Eng. 421. Two lecture periods and one laboratory period.

423. *Sewerage and Sewage Disposal.* (3) A course in the theory, design, construction and operation of sanitary and storm water sewers, treatment plants and appurtenances. Prerequisites: Civil Eng. 421-22. Two lecture periods and one laboratory period.

431. *Soil Mechanics.* (3) A course in the principles of soil mechanics as applied to design of foundations for buildings, highways and bridges; shear and compression reactions on disturbed and undisturbed earth; theory of earth consolidation and repose; and analysis of soil borings. Prerequisites: Civil Eng. 333, and Eng. 343. Two lectures and two laboratory periods.

432. *Foundations.* (3) A course in the design of dry and sub-aqueous foundations, such as piers, footings, abutments; principles and practices in piling and underpinning; and application of soil mechanics to designing of foundations. Prerequisites: Civil Eng. 302, 431. Three lecture periods. Laboratory fee $2.00.

433. *City Planning.* (3) A course in engineering problems applied to regional, city and town planning; dedication for public use; recreational facilities; zoning; and traffic control. Three lecture periods.

441. *Structural Design—Timber.* (3) A course in the design of frame structures, such as mill buildings, trusses, and bridges; use of T E C O connectors in laminated trusses; and beam and girder construction. Prerequisites: Civil Eng. 301, Eng. 343. One lecture period and four laboratory periods. Laboratory fee $1.00.

442. *Structural Design—Steel I.* (3) A course in the design of steel building frames and grillage footings. Prerequisites: Civil Eng. 301, Eng. 343. Two lectures and two laboratory periods.

443. *Structural Design—Steel II.* (3) A course in the design of steel roofs and bridge trusses; plate girders and built-up columns and main compression members. Prerequisite: Civil Eng. 442. Two lectures and two laboratory periods.

450. *Senior Project.* (3) All seniors are required to select and execute a project under the supervision of their major adviser to be approved by the chairman of the school. It may involve the designing and making of a project complete with drawings, pictures, specifications and detail data involved in its construction; or, a research and compilation of a subject within the field of the student's interest.

451. *Engineering Law.* (3) A course in law with emphasis upon negotiable instruments; real property; contracts; riparian rights and condemnation proceedings; writing and interpretation of specification. Three lecture periods.

452. *Structural Design—Concrete I.* (3) A course in the design of concrete beams and girder structures; concrete joist of metal pan and terra cotta construction. Two lectures and two laboratory periods.

453. *Structural Design—Concrete II.* (3) A course in the design of flat slab structures; retaining walls; and bridges. Two lectures and two laboratory periods.

Curriculum in Electrical Engineering

Freshman Year

	I	II	III
Mathematics 161-2-3	5	5	5
English 101-2-3	3	3	3
Chemistry 111-12-13	4	4	4
*Shop Practice 101	3	3	
Civil Eng. 211			3
Engineering 101-2-3	1	1	1
Air Science I	1	1	1
Physical Ed. 101-2-3	⅓	⅓	⅓
	20⅓	20⅓	20⅓

Sophomore Year

	I	II	III
Mathematics 261-2-3	3	3	3
Physics 221-22-23	4	4	4
English 211	3		
Speech 202-3		3	3
Elect. Eng. 211-12-13	3	3	2
Elect. Eng. 311			3
Elect. Eng. 233			1
Economics 211-12	3	3	
Accounting 241	3		
Engineering 203-301		3	3
Air Science II	1	1	1
Physical Ed. 200's	⅓	⅓	⅓
	20⅓	20⅓	20⅓

Junior Year

	I	II	III
Engineering 342-43	3	3	
Engineering 303			3
Elect. Eng. 351-52	3	3	
Elect. Eng. 373			3
Elect. Eng. 321-22	1	1	
Elect. Eng. 383			1
Mech. Eng. 201	3		
Mech. Eng. 301		3	
Foundry Eng. 311			3
Physics 331-32-33	3	3	3
Mathematics 462-63-21	3	3	3
**Civil Eng. 311-12	3	3	
***Elect. Eng. 361-62	3	3	
***Elect. Eng. 363-72		3	1
	19-22	19-22	19-22

Senior Year

	I	II	III
Elect. Eng. 411-12-13	3	3	3
Elect. Eng. 414-15-16	1	1	1
Major electives	6	6	6
Non-technical electives	3	3	3
Elect. Eng. 450			3
Technical electives	3	3	3
	15	15	18

*Electrical Engineering majors may elect any two of the following shop courses: Household Appliance Repair 101, Radio 101, Electricity 101, and Woodwork 101.
**Option for those interested in Power.
***Option for those interested in Communication Engineering.

Courses in Electrical Engineering

Undergraduate

202-203. *Direct and Alternating Current Circuits.* (6) Fundamental concepts, electrical power, circuits, electromotive force, resistance, capacitance, inductance electro magnets, direct current machines, motors and generators, operation, efficiency meters, transformers, power rates, illumination, induction motor synchronous motor, alternating current generator, electronic devices economics of use. One laboratory hour per week for civil engineers. Fee $2.00.

211-12-13. *Fundamentals of Electrical Engineering.* (8) Introduction to electrical theory, including electrical units, direct current circuits, magnetic circuits, induced and generated emf., circuits containing resistance, inductance and capacitance, and electrostatic and magnetostatic fields. Three hours per week the first two quarters and two hours per week the last quarter. Prerequisite: Mathematics 161-62-63.

233. *Direct Current Machinery Laboratory.* (1) Laboratory experiments paralleling the theory of Electrical Engineering 311, taken concurrently with 311. One laboratory period per week. Fee $2.00.

301-2-3. *Direct and Alternating Currents.* (3) Elementary theory of direct and alternating current circuits and machinery. Required of Mechanical Engineering students. Prerequisites: Math 261-2, Physics 221-2-3. Two hours' lecture and one laboratory period per week. Fee $2.00.

311. *Direct Current Machinery.* (3) Theory of the direct current generator, including such topics as generated emf., commutation, armature reaction and parallel operation. Theory and operation of shunt, series and compound motors, including standard control equipment. Theory and operation of the amplidyne and related machines. Prerequisites: Electrical Engineering 211-12; Mathematics 221-2-3; Physics 211-12. Three lecture periods.

321-22. *Alternating Current Measurements Laboratory.* (2) Laboratory experiments paralleling the theory of 351. One laboratory period per week. Fee $2.00.

351-52. *Alternating Current Theory.* (6) Instantaneous and effective currents, voltage, power, complex numbers, vector algebra, series and parallel circuits, resonance, network theorems, circle diagrams, balanced and unbalanced polyphase circuits, Fourier series, and non-sinusoidal voltages and currents. Introduction to Heaviside notation. Prerequisite: Electrical Engineering 211-12-13; Mathematics 263. Three lecture periods.

361. *Electronics.* (3) A study of electron ballistics, and thermal, high field, photoelectric and secondary electron enmission with application to the cathode ray tube and other vacuum tubes. Prerequisites: Electrical Engineering 211-12-13 and Mathematics 461. Three lecture periods.

362. *Electronics.* (2) A study of the diode, triode and multielement vacuum tubes and gas tubes, with applications to rectifier, amplifier and control circuits. Prerequisite: Electrical Engineering 351-361. Two lecture periods.

363. *Introduction to Electrical Transients.* (3) Direct and alternating current transients in simple electrical circuits. Treated as a problem in differential equations, with an introduction to Heavisides' operational calculus. Three hours per week. Prerequisites: Electrical Engineering 351, Mathematics 461.

372. *Electronics Laboratory.* (1) Experimental determination of the operating characteristics of the diode, triode and multigrid vacuum tube circuits, cathode ray oscilloscope, circuits using gas-filled tubes and photo-tubes. Taken concurrently with 362. One two-hour laboratory period per week. Fee $3.00.

373. *Electrical Networks.* (3) Study of network theorems T and Pi sections bridge circuits, coupled circuits and filters. Prerequisites: Electrical Engineering 351-52, 361-63. Two lecture periods.

383. *Electrical Networks Laboratory.* (1) Laboratory experiments paralleling the theory of 373. One laboratory period per week. Fee $2.00.

401-04. *A C Machinery.* (3) Induction motors, squirrel-cage, wound rotor, synchronous converters, single phase alternators, rectifier (if time), theory. One two-hour laboratory period. Fee $2.00.

411-12-13. *Alternating Current Machine Theory.* (9) Theory of the transformer, polyphase and single phase motors, synchronous motors, alternators and converters. Prerequisites: Electrical Engineering 231-233-351-53-54-55. Three lecture periods.

414-15-16. *Alternating Current Machine Laboratory.* (1) Laboratory experiments paralleling the theory of 411-12-13. One two-hour laboratory period. Fee $2.00.

421-22-23. *Communication Engineering.* (6) Study of audio and radio frequency amplifiers, oscillators, modulation, detection, receiving and transmitting circuits. Prerequisites: Electrical Engineering 373. Two lecture periods.

424-25-26. *Communication Engineering Laboratory.* (6) Laboratory experiments paralleling the theory of 421-22-23. One four-hour laboratory per week. Fee $2.00.

441. *Power Transmission Lines.* (3) Inductance and capacitance of transmission lines. Long line equations. Steady state operation of transmission lines, Circle diagrams of transmission lines. Three hours per week.

442. *Electrical Power Networks.* (3) Solution of circuits by the method of symmetrical components. Sequence impedances of power equipment. Determination of fault current in electrical systems. Three hours per week.

443. *Power System Stability.* (3) The operation of power systems under abnormal conditions. Switching and lighting disturbances, transient stability, traveling waves and surge impedances. Three hours per week.

444. *Electrical Machine Design.* (3) Principles of design of D C Machinery including complete design problems. Prerequisite: 231-352. Two one-hour lectures and one computation period.

445. *Electrical Machine Design.* (3) Principles of design of the transformer and induction motor including complete design problem. Prerequisites: Electrical Engineering 411-12. Two lecture periods and one computation period.

446. *Electrical Machine Design.* (3) Principles of Design of A C Generators, synchronous motors and synchronous converters, including complete design problem. Prerequisites: Elect. Eng. 411-12-13. Two one-hour lectures and one computation period.

450. *Senior Project.* (3) Presentation of technical papers and the discussion of special topics in electrical engineering. One hour per week. Prerequisite: Senior standing.

453-54-55. *Electromagnetic Waves and Propagation.* (9) A study of Maxwell's Electromagnetic theory and its application to radiation, networks, transmission lines, and waves guides. Prerequisite: Mathematics 461-62. Three lecture periods.

457. *Electroacoustics.* (3) Principles and apparatus involved in the production, measurement, transmission and reproduction of sound by electrical means. Architectural acoustics. Prerequisite: Electrical Engineering 373. Three lecture periods.

458. *Frequency Modulation Systems.* (3) Study of the principles of modulation and detection, phase modulation, reactance tube circuits, discriminators, ratio detectors and emphasis circuits. Frequency modulation transmitters and receivers will be considered. Three lecture periods.

459. *Television System.* (3) Study of television signals, television amplifiers and synchronizing circuits, pickup and viewing cathode ray tubes, high voltage power supplies and color television systems. Three lecture periods.

461-62-63. *Illumination.* (3) The nature of light and its effect in producing vision. Light units and standards, photometry and the measurement of illumination, coefficient of utilization. Proper locations and distribution of illuminants, and the selection of equipment for different purposes. Scientific basis of illuminating engineering. Spectroradiometric curves. Radiation from different types of surfaces, color and vision. Three lecture periods.

471. *Industrial Electronics.* (3) Theory and operation of commercial industrial electronic equipment, with special reference to the practical applications.

472. *Industrial Control Equipment.* (3) Fundamental control circuits and operation. Basic types of power and control relays for power systems and industrial applications. Three lecture periods.

473. *Servomechanisms.* (3) A study of electronic equipment such as timers, D C Motor controls, A C and D C voltage regulators; follow-up systems; phase-corrective circuits. Prerequisite: Elect. Eng. 363. Three lecture periods.

The following is a list of suggested major and technical electives for particular fields of study.

Option	*Major*	*Technical electives*
Power	Elect. Eng. 441-42-43	Mech. Eng. 411-12-13
	Elect. Eng. 444-45-46	Elect. Eng. 441-42-43
	Elect. Eng. 461-62-63	Elect. Eng. 441-42-43
Communication	Elect. Eng. 471-72-73	Elect. Eng. 457-58-59
	Elect. Eng. 453-54-55	Elect. Eng. 457-58-59

The technical elective must be approved by the department concerned.

Curriculum in Mechanical Engineering

Freshman Year

	I	II	III
Mathematics 161-2-3	5	5	5
English 101-2-3	3	3	3
Chemistry 111-12-13	4	4	4
Eng. Draw. 101-2-3	3	3	3
*ShopPractice 101	3	3	
Civil Eng. 211			3
Engineering 101-2-3	1	1	1
Air Science I	1	1	1
Physical Ed. 101-2-3	⅓	⅓	⅓
	20⅓	20⅓	20⅓

Sophomore Year

	I	II	III
English 211	3		
Speech 202-3		3	3
Economics 211	3		
Sociology 312		3	
Mathematics 261-2-3	3	3	3
Physics 221-22-23	4	4	4
Mathematics 311			3
Eng. Draw. 201-2	3	3	
Engineering 203-301		3	3
Foundry Eng. 311			3
Mech. Eng. 312	3		
Air Science II	1	1	1
Physical Ed. 200's	⅓	⅓	⅓
	20⅓	20⅓	20⅓

Junior Year

	I	II	III
Engineering 342-43	3	3	
Engineering 303			3
Elect. Eng. 311-12-13	3	3	3
Mech. Eng. 201-301-2	3	3	3
M. E. 311			3
Foundry Eng. 313-23	3	3	
Mech. Eng. 341-42-43	3	3	3
Civil Eng. 311-12-13	3	3	3
	18	18	18

Senior Year

	I	II	III
Mech. Eng. 401	3		
Mech. Eng. 452-53	3	3	
Mech. Eng. 433			3
Mech. Eng. 411-12-23	3	3	3
Mech. Eng. 403-32	3	3	
Mech. Eng. 450			3
Civil Engineering 451	3		
Electives	3	9	9
	18	18	18

*Mechanical Engineering majors may elect any two of the following shop courses: Foundry 1-1-2, Metal Bench Work 101, Sheet Metal 101-2.

Courses in Mechanical Engineering

Undergraduate

201. *Elementary Thermodynamics.* (3) Thorough treatment of the laws of heat; transformations of energy, theoretical limitations; second law, absolute temperature, entropy and available energy; properties of gases, liquids, vapors and vapor mixtures. Prerequisites: Math 261-62-63. Three lecture periods.

301. *Thermodynamics.* (3) Energy relations of one-dimensional steady flow of compressible fluids applied to the DeLaval nozzle, simple orifice, and

long pipe, simple single-stage impulse turbine; ideal power cycles; thermodynamics and processes of moist air; and other application. Prerequisite: Mech Eng 201. Three lecture periods.

302. *Engineering Thermodynamics.* (3) Application of principles of thermodynamics to selected problems of power production, heat transfer, fluid flow of a compressible medium, cycle analysis. Prerequisite: Mech Eng 301. Three lecture periods.

311. *Heat Power Engineering.* (3) A study of the principles involved in the utilization of heat in the steam boiler, steam turbine, and power plant auxiliaries; theory of heat transfer; fuels and combustion. Prerequisites: Math 261-62-63. Three lecture periods.

312. *Pattern-Making.* (3) The fundamental operations in sheet metal practice; developing and laying out patterns, shop practice in the use of sheet metal working tools and machines. One lecture period and four laboratory periods. Fee $2.00.

333. *Advanced Machine Shop Practice.* (3) Experiments on machine tool performance, tool and fixture design, shop management and production problems. One lecture period and four laboratory periods. Fee $3.00.

341. *Kinematics.* (3) Analysis of mechanisms. A study of instantaneous centers, velocities, accelerations, and forces in plane mechanisms both analytical and graphical. Prerequisites: Mathematics 263, Drawing 202 and Engineering 301. Three lecture periods.

342. *Machine Elements.* (3) A study of rolling and sliding contact including belts, chains, cams and tooth gearing in plain and epicyclic train. Introduction to the design of machine elements. Prerequisites: Mechanical Engineering 351, Engineering 341. Three lecture periods.

343. *Machine Design.* (3) The design of machine parts including shafting, gears, brakes, clutches, bearings (sliding and anti-friction), springs, flywheels and frames. Prerequisites: Mechanical Engineering 352, Engineering 342. Three lecture periods.

401. *Fuels and Lubricants.* (3) Laboratory practice in the analysis of solid, liquid and gaseous fuels and flue gas, followed by a short boiler test; lubricating oil tests, such as fire, flash, carbon residue, viscosity, corrosion and specific gravity. One lecture period and four laboratory periods. Fee $5.00.

403. *Heating and Air Conditioning.* (3) Theory, design and installation of hot air, direct and indirect steam, hot water and fan heating systems; central heating and temperature control; air distribution, humidity control and conditioning equipment. Prerequisites: Mech Eng 201, 301-2. Three lecture periods.

*411. *Heat Power Engineering II.* (3) Study of steam boilers and turbines; (steam generators and prime movers with emphasis on the application of thermodynamic principles). Operation and economics of power plants. Prerequisite: Mech Eng 311. One lecture period and four laboratory periods.

*412. *Steam Plant Auxiliary Equipment.* (3) Laboratory practice and study of centrifugal and reciprocating pumps; force and induced draft fans; feed water heaters, pumps and softening equipment; coal conveyors; ash handling equipment; flash tanks. One lecture and four laboratory periods.

*413. *Steam Plant Measuring and Testing Devices.* (3) Tests for determining the economy, efficiency, and operating characteristics of steam and gas

*Courses will be given if laboratory equipment is available.

engines, steam turbines, pumps, boilers and other plant equipment. Standard practice is followed, the power test code of the American Society of Mechanical Engineers being used as a laboratory manual. Six laboratory periods.

421. *Machine Design.* (3) The proportioning of machine elements by the application of mechanics and the principles of strength of materials modified by practical considerations, together with an elementary study of friction and lubrication. Prerequisite: Mech Eng 343. Three lecture periods.

422. *Machine Design.* (3) The actual design of a simple machine, including making of the necessary calculations, detail and assembly drawings. Prerequisite: Mech Eng 421. Six laboratory periods.

423. *Steam Plant Design.* (3) A general plant layout is made for the equipment combination which will generate and distribute steam at the lowest cost for assigned conditions of load, location, type of fuel and other factors affecting design. Cost estimates required for alternate proposals; a term project. Six laboratory periods. Fee $2.00.

431. *Theory of Airplane Structures.* (3) Applied loads on airplane structures; load factors and safety factors; elastic stability of columns and thin webs; analysis of airplane structures, with emphasis on modern semimonocoque types of construction. Prerequisite: Avi Ed 412. Three lecture periods.

432. *Air Conditioning and Refrigeration Engineering.* (3) An application of general thermodynamic theory to mechanical refrigeration and its commercial applications, including consideration of refrigerants and their properties, compound and multiple effect compression and absorption systems, and recent developments. Three lecture periods.

433. *Theory of Diesel Engine.* (3) Principles of thermodynamics as applied to the design and operation of the Diesel engine; study of combustion, fuels, carburetion, performance and operating economy of the Diesel engine. Three lecture periods.

441. *Airplane Structural Design.* (3) Structural design of major components of airplanes; comparison of various structural arrangements from strength-weight considerations. Three lecture periods. Fee $3.00.

442. *Refrigeration Laboratory.* (6) Practice in assembly, disassembly, and repair of compressors, motors and automatic controls used in commercial refrigeration; converting over and changing refrigerants; procedure in testing and inspecting. Three lecture periods and six laboratory periods. Fee $5.00.

450. *Senior Project.* (3) A written thesis on a project in the student's major field of study.

452-53. *Elements of Gas Engines.* (3) A study of the construction and operation of gasoline, gas, oil, Diesel and aeronautic engines, and auxiliary apparatus. Standard tests are made. One lecture period and four laboratory periods.

Senior Options

Foundry (M. E.)
Air Conditioning & Refrigerating (M. E.)
Combustion Engines (M. E.)
Machine Design

*These courses to be offered if laboratory facilities are available.

Elective Group

Machine Design Majors	*Refrigeration and Air Cond. Majors*
Theory of Airplane Structures	Layout of Air Cond. & Refrig. Units
None-technical electives (6)	Bacteriology
Metallurgy	Non-technical electives (6)
Advanced Machine Design	

Foundry Engineering Majors

Advanced Foundry
Metallurgy
Non-technical electives (6)

Courses in Foundry Engineering

Undergraduate

311. *Elementary Metallurgy.* (3) A course in the properties of metals and alloys as related to structure and treatment, constitutional diagrams, and fabrication processes. Three lecture periods.

313. *Foundry Theory.* (3) Principles and processes of foundry operation: foundry materials: sands, clays, facings, fluxes and core binders; casting alloys: iron base, copper base and aluminum base; sand tests and control; and patterns. Prerequisite: Foundry Engineering 311. Three lecture periods.

323. *Foundry Practice.* (3) Laboratory practice in bench, floor and machine molding; cupola operation; and core making. Special consideration given to molding and casting brass, bronze, aluminum and light grey iron castings. Prerequisite: Foundry Engineering 311. Three laboratory periods.

450. *Senior Project.* (3) Mechanical engineering students who take foundry options are required to do their theses in foundry.

451. *Advanced Foundry Theory.* (3) A continuation of Foundry Engineering 313. Theory of modern developments. Flow and solidification of metals, heat flow in mold and metal, and gases in metals. Standard new methods of molding, melting, alloying, gating, risering, cleaning, cutting, testing, inspection and casting design. Prerequisites: Foundry Engineering 313, 323. Three lecture periods.

461. *Advanced Foundry Practice.* (3) Laboratory exercises to go with Foundry Engineering 451. Application of engineering to the foundry. Industrial application of physical metallurgy. Prerequisites: Foundry Engineering 313, 323. Three laboratory periods. Laboratory fee $5.00.

DEPARTMENT OF AVIATION EDUCATION

Cecil Ryan, *Head*

The curriculum in Aviation Education is designed to meet requirements of the Tennessee State Department of Education for certification as a Public School Teacher of Air Age Education. It covers material in the five basic areas as follows:

1. Theory of Flight—Why the airplane flies
2. Flight Techniques—How the airplane is flown
3. Meteorology—The problem of weather
4. Navigation—How to get there
5. Specialized Training—Skilled trade for industry.

At the completion of this course, the degree of Bachelor of Science in Aviation Education is awarded.

Curriculum in Aviation Education

Freshman Year

	I	II	III
Mathematics 161-2-3..	5	5	5
English 101-2-3	3	3	3
Chemistry 111-12-13 ..	4	4	4
Eng. Draw. 101-2-3 ...	3	3	3
*Shop Practice 101 ..	3	3	
Civil Eng. 211			3
Engineering 101-2-3 ..	1	1	1
Air Science I	1	1	1
Physical Ed. 101-2-3..	⅓	⅓	⅓
	20⅓	20⅓	20⅓

Sophomore Year

	I	II	III
English 211	3		
Speech 202-3		3	3
Mathematics 331-32-311	3	3	3
Physics 221-22-23	4	4	4
Shop Practice 101 ...	3	3	3
Aviation Ed. 203			3
Sociology 211-301	3	3	
Sociology 312 or 313			3
O. A. 211 (typing) ..	2		
Air Science II	1	1	1
Physical Ed. 200's ...	⅓	⅓	⅓
	20⅓	20⅓	20⅓

*Aviation Education majors may elect any of the following shop courses:

Radio 101, Sheet metal 101, Electricity 101, Woodwork 101, Metal Bench work 101.

All shop courses listed as 301-2-3 and 401-2-3 will be initiated in Aero Mechanics.

Junior Year

	I	II	III
Aviation Ed. 302		3	
Psychology 211-243	3		3
Education 341	3		
**Education	3	3	
Aero Mechanics 301-2-3 ..	6	6	6
Aviation Ed. 321-22		3	3
Aviation Ed. 401			3
	15	15	15

Senior Year

	I	II	III
Aviation Ed. 411-22	3		3
Aero Mechanics 401-2-3 ..	6	6	6
Aviation Ed. 423-50	3		3
**Education	3		
Aviation Ed. 441-42-403 ..		6	3
	15	12	15

**Nine quarter hours to be selected to meet teacher certification requirements.

Courses in Aviation Education

Undergraduate

201. *Model Building.* (3) This course is specifically designed for public school teachers of Air Age Education. It deals with the structure and design of various model assembly. Six laboratory hours. Laboratory fee $3.00.

202. *Advanced Model Building.* (3) Continuation of 201. Prerequisite: 201. Three two-hour laboratory periods. Laboratory fee $3.00.

203. *Aircraft Familiarization.* (3) A course designed to acquaint the student with the operation, parts and assembly, and routine inspection of light aircraft. Three lecture periods.

301. *History of Aviation.* (3) This course deals with the beginning of aviation and proceeds up to the present day. Three lecture periods.

302. *Implications of Aviation.* (3) This course deals with the social, geographic, economic and political implications of the air age. Three lecture periods.

303. *Airport Operation and Control.* (3) Concerns the operation of small airports, traffic patterns and control, means of income, construction of facilities, sights and locations. Three lecture periods.

321. *Theory of Flight and Engines.* (3) The laws of nature as applied to aviation. Three lecture periods.

322. *Aerial Navigation.* (3) The principals involved in scientifically going from one place to another by means of air travel. Practical experience offered in this course. Two lectures and one laboratory period.

322A. *Advanced Aerial Navigation.* (3) Continuation of 322. Prerequisite: 322. Two lectures and one laboratory period.

323. *Link Trainer Operation.* (3) The principals involved in the Link Trainer, its maintenance and operation. One lecture period and two laboratory periods.

401. *Elementary Flight.* (3) How to fly with actual flight experience and instruction. Ten clock hours of dual flight instruction. One lecture and two laboratory periods. Laboratory fee $3.00 plus fuel expenses.

402. *Advanced Flight.* (3) Supervised solo practice with dual instruction and experience. Additional flying time may be arranged with instructor in charge. Successful completion of 401 and 402 should provide the minimum flying time for a student to qualify for the private pilot license. One lecture and two laboratory periods. Laboratory fee $3.00 plus fuel expenses.

403. *Meteorology.* (3) General effects of weather phenomena. Special study of its relation to aviation. Three lecture periods.

411. *Communications.* (3) The development of methods of communication, radio navigation, Morse Code, etc. Three lecture periods.

412. *Aerodynamics.* (3) A general course dealing with the properties of air flow, air foil characteristics, wing theory, parasite drage, introduction of stability and control. Three lecture periods.

413. *Aviation Education Workshop.* (3) Designed primarily for in-service teachers whose objective is to enrich their curriculum by weaving air-age materials into their subject matter. Development of classroom procedures. Three lecture periods.

421. *Aircraft and Engines.* (3) Familiarization and operation, deals with types, structure and general service of aircraft and engines. Two lectures and one laboratory period.

422. *Civil Air Regulations.* (3) Federal, state and local safety regulations with its application to aviation. Three lecture periods.

423. *Materials and Methods for Aviation Education.* (3) A detailed study of selected teaching aids. Effective methods of preparing and using patterns for blackboard drawings, charts, diagrams, posters, audio-visual aids, design and construction of models, static and dynamic, selected for use in specific use in teaching units. Three lecture periods.

441-42. *Directed Practice Teaching in Aviation Education.* (6) Observation of Aviation Education classes of all types. Preparation of lesson plans and directed teaching in at least three classes. Prerequisite: all required subjects in junior year of Aviation Education curriculum. Open only to majors in the Department of Aviation Education. Five lecture periods.

450. *Senior Project.* (3) All seniors are required to select and execute a project under the supervision of his major adviser to be approved by the chairman of the school of engineering. It may include the development of a complete course outline, or research and compilation of a subject within the field of the student's interest.

DEPARTMENT OF INDUSTRIAL EDUCATION

PRESTON E. STEWART, *Supervisor*

The Department of Industrial Education serves as the agency, appointed by the State Board of Vocational Education, to offer instruction for the preparation of teachers of Industrial Vocational Education. This function is accomplished in part, through campus classes for prospective shop and related teachers during summer sessions and in part, through classes and conferences for teachers in service.

The courses offered in the Department of Industrial Education are planned to prepare persons who have the proper technical and industrial background to qualify as teachers of trade classes, related subjects and as coordinators of cooperative part-time programs.

One purpose of this Department is to provide technical shop training for college students desiring or needing this type of education. Courses designed to prepare teachers for the field of Industrial Arts are also offered.

The curricula leads to the undergraduate degree of Bachelor of Science in Industrial Education and the graduate degree of Master of Science in Industrial Education.

At the completion of this curriculum the degree of Bachelor of Science in Industrial Education is awarded.

CURRICULUM IN INDUSTRIAL EDUCATION

Freshman Year

	I	II	III
Mathematics 161-2-3	5	5	5
English 101-2-3	3	3	3
Chemistry 111-12-13	4	4	4
Eng. Draw. 101-2-3	3	3	3
*Shop Practice 101	3	3	
Civil Eng. 211			3
Engineering 101-2-3	1	1	1
Air Science I	1	1	1
Physical Ed. 101-2-3	⅓	⅓	⅓
	20⅓	20⅓	20⅓

Sophomore Year

	I	II	III
English 211	3		
Speech 202-3		3	3
Physics 221-22-23	4	4	4
Eng. Draw. 211-12-13	3	3	3
*Shop Practice 101	3	3	3
Sociology 211	3		
Sociology 301		3	
Sociology 312 or 313			3
Mathematics 331-32-311	3	3	3
Air Science II	1	1	1
Physical Ed. 200's	⅓	⅓	⅓
	20⅓	20⅓	20⅓

*The particular shop course will be assigned from the following options:

1. Building Construction Trades: Woodwork 101, Masonry 101, Electricity 101, Sheet Metal 101 and Plumbing 101.
2. Metal Trades: Foundry 101-2, Metal Bench Work 101, Sheet Metal 101-2.
3. General Service Trades: Household Appliance Repair 101, Radio 101, Electricity 101, Woodwork 101, Upholstery 101.
4. Engine Trades: Auto Mechanics 101-2, Aero Mechanics 101-2, Metal Bench Work 101.

Junior Year

	I	II	III
Psychology 211	3		
Education Psy. 243		3	
Education 341			3
**Education	3	3	3
Ind. Education 311	3		
Ind. Education 321		3	
Ind. Education 331			3
***Major Shop Practice 301-2-3	6	6	6
O. A. 211 (typing)	2		
	17	15	15

Senior Year

	I	II	III
Ind. Education 411-31	3	3	
Ind. Education 412-21	3	3	
Ind. Education 441-42			6
***Major Shop Practice 401-2-3	6	6	6
Ind. Education 450		3	
Electives	3		3
	15	15	15

**Nine quarter hours to be selected to meet teacher certification requirements.
***Major shop practice course will depend upon the student's ultimate shop objective.
*Approved for graduate credit.

COURSES IN INDUSTRIAL EDUCATION

Undergraduate

201-2-3. *Basic Experiences in Trade and Industrial Education.* (9) Effective methods of teaching and the use of specialized instructional aids and devices will be stressed. Three two-hour periods.

311.* *History and Philosophy of Industrial Education.* (3) History and development of Industrial Education; social and economic reasons for present educational movements; types of modern industrial schools and courses; apprenticeship systems and training of workers in modern industry. Three lecture periods.

321-2-3.** *Part-time Programs in Diversified Occupations.* (9) Principles of organizing and promoting such programs, analyzing needs, preparing schedules of processes, selecting materials for related-subjects teaching, and carrying on supervised study and coordination.

331.* *Shop Organization and Management.* (3) Securing equipment, making inventories and arranging for proper storage of materials, supplies, and tools. Typical shop layouts, arrangements for tool rooms, stock rooms and storage facilities; keeping records and accounts. Personnel management of students, and the organization of students' participation in shop management and safety. Three lecture periods.

332.* *Materials and Methods for Shop and Related Subjects Teachers.* General principles involved in selection and use of teaching aids. Effective methods of preparing and using patterns for blackboard drawings, charts, diagrams, and posters; use of color. Three lecture periods.

333.* *Materials and Methods for Shop and Related Subjects Teachers.* (3) Detailed study, combined with actual operation of each of the several standard types of projectors, lesson planning for teaching specific units involving audio-visual aids; maintenance, and repair of projection equipment. The design and construction of models, static and dynamic, selected for use in specific teaching units. Three lecture periods.

411.* *Foremanship Training by the Conference Method.* (3) The use of the conference as an instructional device; special methods, techniques, and procedures to be used in foreman training: duties and responsibilities of the typical industrial foreman. How to follow up foremen conferences by means of foremen's clubs, plant educational programs. Three lecture periods.

412.* *Job Analysis.* (3) The principles of job analysis for the purpose of listing teaching content in trade and industrial education. Practice in analyzing trade jobs for production, auxiliary, and related technical content; instructional difficulties and progression factors. Open to seniors only. Three lecture periods.

413.* *Job Analysis.* (3) A continuation of 412. Analytical study of the related knowledge necessary for certain type jobs and typical industries. Emphasis on development of the best instructional method for teaching industrial subjects.

421.* *Methods of Teaching Shop and Related Subjects.* (3) Lesson planning; techniques of the demonstration; plans for related subjects instruction; methods of testing. Open to seniors only. Three lecture periods.

431-2.* *Curriculum Building in Trade and Industrial Subjects.* (6) Arranging course material in trade subjects, following up results of job analyses, preparing checking sheets and individual job sheets in both trade and related subjects. Prerequisite: Industrial Education 412. Three lecture periods.

435-6-7.* *Problems in Trade and Industrial Teaching.* (9) Individual or group work on assigned or chosen problems involving the preparation, use, and evaluation of instructional material for use in vocational industrial classes. Research involving compilation and study of student records, employment placement, job progress, earnings, wage scales and similar items may also be carried out. Three lecture periods.

441-2. *Directed Teaching.* (6) Observation of trade and industrial classes of all types; all-day trade, part-time general continuation, and evening trade extension. Preparation of lesson plans and directed teaching in at least two of the three types. Prerequisites: All required subjects in junior year of Industrial Education curriculum. Prerequisite or parallel: Industrial Education 421. Open only to senior students majoring in Industrial Education. Five periods and one hour.

450. *Senior Projects.* (3) All seniors are required to select and execute a project under the supervision of their major adviser to be approved by the chairman of the school of engineering. It may involve the designing and making of a project complete with drawings, pictures, specifications and detail data involved in its construction; or a research and compilation of a subject within the field of the student's interest.

Courses in Aero Mechanics

Undergraduate

The curriculum in Aero Mechanics is designed to meet C.A.A. standards for both the Aircraft and Aircraft Engine licenses. A college student can qualify for only one of these if he devotes full time to that phase. The student desiring both phases will have to supplement his training to obtain licenses.

101. *Aircraft Introduction.* (3) Lectures and shop in all phases of aircraft and airframes sufficient in scope to provide a foundation for more advanced work in education or engineering. Six lecture and laboratory periods. Fee $3.00.

102. *Aircraft Engine Introduction.* (3) Lectures and shop in the various phases and types of power plants, of a nature that will provide invaluable background for mechanical and civil engineers as well as for advanced work in aeronautics. Six lecture and laboratory periods. Fee $3.00.

*Approved for graduate credit.

301. *Elementary Aircraft.* (6) Regulations, airplane types, aviation history, fuselage construction, drafting layouts of wing and tail sections, constructions ½ scale, metal fabrication, welding. Two hours lectures, ten hours laboratory. Fee $3.00.

302. *Elementary Engines.* (6) Principles of internal combustion, Diesels, lubrication, oil, fuel, electrical and carburetion system, dissection of all types engines, propellers, carburetors and magnetos. Two hours lecture, ten hours laboratory. Fee $3.00.

303. *Advanced Fuselage.* (6) Analysis and estimation of repairs, structural repair alignment and priming, interior finish, glass, seat, instrument and control installation. All work on "live" equipment. Prerequisite: 301. Two hours lecture, ten hours laboratory. Fee $3.00.

401. *Advanced Engines.* (6) Disassembly, micrometer, microscopic and Magnaflux inspection, assembly, timing, running-in of Continental, Lycoming, Pratt and Whitney, Kinner, Wright, and other engines, trouble shooting, labor and parts cost estimation. Prerequisite: 302. Two hours lecture, ten hours laboratory. Fee $3.00.

402. *Advanced Wing.* (6) Inspection and analysis of repair work, repair methods, wood and metal, hand and spray doping, fabric covering and repairs; lettering, assembly, rigging and inspections, weight and balance procedure; C.A.A. Forms. Prerequisites: 301 and 303. Two hours lecture, ten hours laboratory. Fee $3.00.

403. *Field Work.* (6) Assignment to line duty at airport, practice teaching C.A.A. practical and written examinations. Twelve hours lecture and laboratory. Fee $3.00.

421. *Aero Mechanics.* (6) Specialization course in repair station operation and stock control. Twelve hours lecture and laboratory. Fee $3.00.

Courses in Auto Mechanics

Undergraduate

101. *Bench Work and Engines.* (3) Familiarization of tools and equipment, care and operation of tools and equipment. Study of bolts, nuts, screws and threads. Engine design and principles, disassembly, cleaning and inspecting engine parts, mechanical principles assembly of engines. Six lecture and laboratory periods. Fee $3.00.

102. *Auto Repairs and Servicing.* (3) Study of the function and operation of the automobile; minor and emergency trouble shooting, repair and maintenance. Six lecture and laboratory periods. Fee $3.00.

301. *Brakes.* (6) Check operation of complete hydraulic brake system, disassemble master cylinder. Twelve lecture and laboratory periods. Fee $3.00.

302. *Engine Accessories, Carburetion, and Lubrication.* (6) Study of functions, repairs and of starters, generators, ignition devices, and engine accessories. Study of combustion and fuels. Study of function, repair and maintenance of lubrication system. Ten hours laboratory, two hours lecture. Prerequisite: 301. Fee $3.00.

303. *Engine Overhaul.* (6) Fitting and installing piston rings, inspecting and grinding valves, adjusting valve stem clearance, cleaning and adjusting spark plugs; inspecting, cleaning and adjusting ignition points. Inspecting and testing secondary wiring. Fitting and installing bearings. Inspection and testing crank shafts; valve timing, ignition timing, motor analysis. Prerequisite: 302. Ten hours laboratory, two hours lecture. Fee $3.00.

401. *Chassis Maintenance, Gas and Electric Welding.* (6) Maintenance processes, disassembly and construction; assembly and repairs of clutches, transmissions, free wheeling, over drive, and fluid drive unit. Repairs and maintenance of universal joints, drive shafts and final drives. Principles and practice of gas and electric welding as applied to auto mechanics. Prerequisite: 303. Ten hours laboratory, two hours lecture. Fee $3.00.

402. *Advanced Accessories and Electrical Appliances.* (6) Starters, generators, magnetos, battery ignition systems, wiring. Relays and voltage regulators. Prerequisite: 401. Ten hours laboratory, two hours lecture. Fee $3.00.

403. *Body, Fender Work and Spray Painting.* (6) Metal bumping, shrinkage, filling and sanding; leading and glazing, priming, surfacing and finishing. Color tenting, lacquers and synthetic enamels. Prerequisite: 402. Ten hours laboratory, two hours lecture. Fee $3.00.

Courses in Commercial Refrigeration and Air Conditioning

Undergraduate

101. *Commercial Refrigeration.* (3) Elementary principles of mechanical refrigeration. A study of the various automatic refrigerating mechanisms used in commercial installation. Six hours laboratory and lecture. Laboratory fee $3.00.

301. *Commercial Refrigeration.* (6) Assembly disassembly, and repair of compressors, motors, and the various controls used in commercial refrigeration. A detailed study of refrigerants charging and converting refrigerants, testing and inspection procedures. Ten hours laboratory, two hours lecture per week. Fee $3.00.

302. *Installation and Servicing.* (6) A study of coded and non-coded installations. Location and servicing of condensing units, cooling coils and refrigerant controls in storage rooms and locker plants. Ten hours laboratory, two hours lecture. Fee $3.00.

303. *Air Conditioning.* (6) The fundamental operations of sheet metal practices as used in the design of heating and air conditioning systems, developing patterns and laying out work, hand and machine operations. Prerequisite: 302. Ten hours laboratory, two hours lecture. Fee $3.00.

401. *Air Conditioning.* (6) Cooling and heating lead calculations. A study of the properties of air and the methods of treating it for human comfort. The development of refrigerating mechanisms for cooling and dehumidifying air. Prerequisite: 303. Ten hours laboratory, two hours lecture. Fee $3.00.

402. *Air Conditioning.* (6) Design of air conditioning and refrigeration systems for small buildings. A study of heating and air conditioning contracts and specifications. Cost and estimating. Prerequisite: 401. Twelve hours laboratory and lecture. Fee $3.00.

403. *Air Conditioning.* (6) Design of air conditioning and refrigeration systems for larger buildings. Practice in drawing up heating and air conditioning and specifications. Costs and estimating. Field problems. Prerequisite: 402. Twelve hours laboratory and lecture. Fee $3.00.

Courses in Electricity

Undergraduate

101. *General Electricity.* (3) Course to cover general knowledge of electricity. Types of electrical currents and relationship of electricity to industry and domestic life. Six hours laboratory and lecture. Fee $2.00.

301. *Theory of Circuits.* (6) Practice in house wiring, switches, fuses, line leads. Ten hours laboratory, two hours lecture. Fee $2.00.

302, 303. *Theory and Practice.* (12) In power transmission, transformers, meters, line wiring, advanced house wiring. Installation and repairs of stoves, and waters. Prerequisite: 301. Ten hours laboratory, two hours lecture. Fee $2.00.

401, 402. *Generator and Motor Rewinding and Repairing.* (12) Theory and practice in the design, maintenance and repair of distribution loads. Prerequisite: 303. Ten hours laboratory, two hours lecture. Fee $2.00.

403. *Illumination, Estimating, National Electrical Code, Power Generation, Motor Design.* (6) Prerequisite: 402. Twelve hours laboratory and lecture. Fee $2.00.

Courses in Advanced Electricity

Undergraduate

These courses are primarily designed for those students who have shown special abilities in the previous studies of electricity, however, it is open to any student who has successfully finished the first two-year course.

In this course some of the same material is covered as in the four-year course, but more thoroughly, in addition to the following; industrial lighting, fluorescent lighting, residential lighting, industrial appliances, electrical generators and wiring, industrial electrical motors and wiring, theater services, estimating, outdoor wiring, distribution system and electrical drafting. This course will extend through three quarters.

421. *Electricity:* Wiring for Power. (6).

1. Industrial Electrical Motor and Wiring
2. Transformers and Connections
3. Industrial Lighting
4. Theatre Wiring
5. Distribution
6. Power Service Calculation

Twelve hours laboratory and lecture. Fee $2.00.

422. *Electrical Drafting.* (6)

1. Drafting Instructions
2. Symbols
3. Generator and Feeder Panel

4. Three Phase Panels
5. Outdoor Substations
6. Switch and Buss Structures
7. Wiring Layouts
8. Illumination

Twelve hours laboratory and lecture. Fee $2.00.

423. *Electrical Contracts and Specifications.* (6) Twelve hours laboratory and lecture. Fee $2.00.

Courses in Electrical Household Appliances

Undergraduate

101. *History and Elementary Principles of Electrical Household Appliances.* (3) General repair of small household appliances. Six hours laboratory and lecture. Fee $3.00.

301. *Processes and Uses of Tools and Equipment in Soldering, Bending, Flaring and Swedging.* (6) Twelve hours laboratory and lecture. Fee $3.00.

302. *Transfering, Removing and Charging a System with Refrigerant.* (6) Converting from one system to another. Twelve hours laboratory and lecture. Fee $3.00.

303. *Testing and Overhauling Refrigerant Control Valves.* (6) Twelve hours laboratory and lecture. Fee $3.00.

401. *Installation, Testing, Replacing of Heating Elements, Insulation, Thermo-Switches.* (6) Domestic and commercial appliances. Twelve hours laboratory and lecture. Fee $3.00.

402. *Installation, Testing, Replacing, Repairing, Adjusting Parts of Mechanical, Domestic and Commercial Appliances.* (6) Twelve hours laboratory and lecture. Fee $3.00.

403. *Motor and Compressor Testing and Rebuilding.* (6) Twelve hours laboratory and lecture. Fee $3.00.

Courses in Foundry

Undergraduate

101. *General Foundry.* (3) An elementary study of the cupola, tools, equipment and general molding practice. Six laboratory hours per week. Laboratory fee $1.00.

301. *Molding, General Foundry, Theory and Practice.* (6) A detailed study of the various types and methods of molding such as green sand molding, metal, centrifugal, novelty and building molds. Prerequisite: 101. Twelve laboratory and lecture periods. Fee $2.00.

302. *Cupola Theory and Practice.* (6) Methods and principles of cupola operation. A study of the various charges, combustion and alloying. Prerequisite: 301. Twelve laboratory and lecture periods. Fee $2.00.

303. *Ferrous castings.* (6) Theory of ferrous castings—gray iron, malleable iron and steel manufacturing processes and physical properties. Practice in manufacture of grey iron castings, cupola shop practice, pouring, chipping, grinding, sand blasting and inspection. Prerequisite: 302. Twelve laboratory and lecture periods. Fee $2.00.

401. *Core Making, Theory and Practice.* (6) Fundamental theory and operation common in core making practices including the study of core sands and binders, core box construction and foundry facings. Applied core making practice. Prerequisite: 303. Twelve laboratory and lecture periods. Fee $2.00.

402. *Non-ferrous castings.* (6) Theory of non-ferrous castings—aluminum base, copper base, and magnesium base alloys manufacturing processes and physical properties. Practice in molding and inspection, and in melting and casting various non-ferrous alloys. Prerequisite: 401. Twelve laboratory and lecture periods. Fee $2.00.

401. *Core Making, Theory and Practice.* (6) Fundamental theory and operation common in core making practices including the study of core sands and binders, core box construction and foundry facings. Applied core making practice. Prerequisite: 402. Twelve laboratory and lecture periods. Fee $2.00.

Courses in Masonry

Undergraduate

101. *Fundamentals of Bricklaying.* (3) The study of materials; care and use of tools. Mortar making and spreading; laying bricks between vertical points, building piers. Six hours laboratory and lecture. Fee $2.00.

301. *Brick Construction.* (3) The construction of walls, steps and flues. Excavating. Ten hours laboratory and lecture. Fee $2.00.

302 *Foundations.* (6) The study and construction of simple, spread and stepped footings; foundation walls and underpinning. Ten hours laboratory, two hours lecture. Fee $2.00.

303. *Advanced Brick Construction.* (6) The study and construction of chimneys, mantels, special wall designs, arches, and bonds. Prerequisite: 302. Ten hours laboratory, two hours lecture. Fee $2.00.

401. *Fundamental Concrete Work, Cement Finishing.* (6) The study of materials; care and use of tools. Application of concrete mixtures, form building. Construction of foundations walls, walks and floors. Prerequisite: 303. Ten hours laboratory, two hours lecture. Fee $2.00.

402. *Fundamentals of Plastering.* (6) The study of common materials; care and use of tools. Mixtures and application. Prerequisite: 401. Ten hours laboratory, two hours lecture. Fee $2.00.

403. *Estimating and Specification.* (6) Methods used in and making of estimates of costs as applied to buildings. Study of specifications as ordinarily, prepared by architects. Prerequisite: 402. Ten hours laboratory, two hours lecture. Fee $2.00.

Courses in Plumbing and Heating

Undergraduate

101. *Pipe Trades-Tools and Materials.* (3) Plumbing defined; duties and responsibilities; classification of tools and materials; selection of tools and materials, developing tool handling techniques. Six hours lecture and laboratory. Fee $3.00.

301. *Pipe Trades-Plumbing.* (6) Pipe forming, mensuration, threading, joining cast iron joints, leading, sweating joints, and fitting. Prerequisite: Plumbing 101. Twelve hours lecture and laboratory. Fee $3.00.

302. *Pipe Trades—Plumbing Operations.* (6) The development of skills envolving measurements, installation of regulators, blueprint reading and laws governing plumbing regulations. Prerequisite: 301. Twelve hours lecture and laboratory. Fee $3.00.

303. *Plumbing Make-up and Testing.* (6) Drainage assembly, ventilation, main vents, continuous vents, roughing-in of water services. Application of water, smoke and air test, water treatment and purification. Prerequisite: 302. Twelve hours lecture and laboratory. Fee $3.00.

401. *Pipe Trades—Estimating and Installation.* (6) Determining the cost of labor and materials for installations. Assembly and study of fixtures and pumps. Techniques of soldering, lead wiping, welding and brazing. Prerequisite: 303. Twelve lecture and laboratory periods. Fee $3.00.

402-3. *Plumbing Layouts and Heating.* (12) Calculating heat, gas and water requirements for buildings. Making actual layouts; checking installations, steam and hot water heating systems; gas fitting, copper tubing and fittings. Prerequisite: 401. Twelve hours lecture and laboratory. Fee $3.00.

Courses in Radio

Undergraduate

101. *General Radio.* (3) Fundamentals of radio and electronics. Course will orientate student with radio principles, and give him its connection with industry. Six hours laboratory and lecture per week. Fee $2.00.

301. *Principles of Radio.* (6) Principles and practices of radio communication. The transmission procedures of both phone and code in communications. Lectures, demonstrations and laboratory experiments. Ten hours laboratory, two hours lecture per week. Fee $2.00.

302. *Maintenance and Repair.* (6) Maintenance and repair of radio, sound equipment and electronic equipment. Adjusting and servicing of radio transmitters. Ten hours laboratory, two hours lecture per week. Prerequisite: 301. Fee $2.00.

303. *Frequency Modulation Receivers.* (6) Theory of frequency modulation receivers. Lectures, demonstrations and laboratory experiments. Ten hours laboratory, two hours lecture per week. Prerequisite: 302. Fee $2.00.

401. *Servicing of F. M. Receivers.* (6) Familiarity with the equipment used for high frequency measurement is afforded together with a survey of the various techniques employed in the repair of F. M. receivers. Ten hours laboratory, two hours lecture per week. Prerequisite: 303. Fee $2.00.

402. *Transmitter Theory and Practice.* (6) A review and application of the theory underlying the operation of F. M. transmitters. Lectures, demonstrations and experiments. Ten hours laboratory, two hours lecture per week. Prerequisite: 401. Fee $2.00.

403. *Electronics.* (6) The study of the characteristics of electron tubes and their function as detectors, amplifiers, and generators. Electronics. The study of the principle of radio construction and repair. Ten hours laboratory, two hours lecture per week. Prerequisite: 402. Fee $2.00.

Courses in Sheet Metal

Undergraduate

101. *Basic Sheet Metal Work.* (3) Fundamental sheet metal operations, layout, tools and materials. Prerequisite: Eng Draw 211. Six laboratory and lecture periods. Fee $3.00.

301. *Parallel and Radial Line Development* (Shop Practice). (6) A detailed study of problems involving descriptive geometry and trigonometry relating to sheet metal pattern layouts. Prerequisite: Sheet Metal 101. Twelve lecture and laboratory periods. Fee $3.00.

302. *Triangulation* (Shop Practice). (6) Continuation of Sheet Metal 301. A course continuing in sheet metal pattern layouts directing study on two methods of triangular development. Prerequisite: Sheet Metal 301. Twelve lecture and laboratory periods. Fee $3.00.

303. *Roofing, Guttering and Cornices.* (Shop and Field Practice). (6) A course covering uses and properties of sheet metals commonly used in the trade. Construction and erection of gutters, down-spouts, cornices, pediments, mitres, and valleys. Use of ladders and scaffolds. Prerequisite: Sheet Metal 302. Twelve lecture and laboratory periods. Fee $3.00.

401. *Heating and Ventilating.* (Shop and Field Practice). (6) A study of heat transmission and design of heating, ventilating and air conditioning systems. Construction and erection of ducts, vents, hoods, stacks, hoppers, and ventilator heads. Prerequisite: Sheet Metal 303. Twelve laboratory and lecture periods. Fee $3.00.

402. *Advanced Sheet Metal Problems.* (Shop and Field Practice). (6) A course of study involving problems in design and construction of special items such as metal cabinets, awnings, rotating ventilators, skylights, signs and projects in brass, copper and aluminum. Prerequisite: Sheet Metal 401. Twelve lecture and laboratory periods. Fee $3.00.

403. *Shop and Field Jabbing.* (Shop and Field Practice). (6) On the job estimating variables on point by point basis. Each student is required to serve as foreman of a shop and field job. Prerequisite: Sheet Metal 402. Twelve laboratory and lecture periods. Fee $3.00.

Courses in Upholstering

Undergraduate

101. *Tools and Materials.* (3) Names, makes, and proper use of tools. Methods of webbing and springing up furniture. Building of spring edges, stitched edges, and rolled edges. Six hours laboratory and lecture. Fee $2.00.

301. *Plain Upholstering.* (6) Measuring and cutting materials; fitting and tacking. Learning furniture contours and designs. Relationship of pattern material to furniture design. Twelve hours laboratory and lecture. Fee $2.00.

302. *Decorative Upholstery.* (6) A continuation of 301; larger and more complex problems are introduced as tufting, piping, channeling, button-backs, false tufting and cushion making. Prerequisite: 301. Twelve laboratory and lecture periods. Fee $2.00.

303. *Furniture Restoration and Repairing.* (6) Reglueing of old pieces, replacement of broken parts, refinishing. Prerequisite: 302. Twelve laboratory and lecture periods. Fee $2.00.

401-2. *Reupholstering and rebuilding.* (12) Reupholstering and building up complex pieces of overstuffed button, pipe and tufted furniture; special problems in designing; shop arrangement and material purchasing. Prerequisite: 303. Twelve laboratory and lecture periods. Fee $2.00.

403. *Slip Cover Making.* (6) Methods of cutting, fitting, stitching and applying slip covers to chairs and other pieces of furniture. Prerequisite: 402. Twelve laboratory and lecture periods.

Courses in Woodworking

Undergraduate

101. *Woodworking.* (3) A study of tools, materials and joints, care and use of hand tools, and the construction of simple hand projects. Six hours lecture and laboratory. Fee $2.00.

301. *Woodworking.* (6) Introduction to cabinet construction, joinery, materials and glues. Leg and drawer construction, panel construction, introduction to machine methods. Simple machine projects. Prerequisite: 101. Ten laboratory hours and two lecture periods. Fee $2.00.

302. *Woodworking.* (6) Machine woodworking, kerfing, routing and shaping more advance projects. Introduction to wood-turning, the tools and materials, spindle and face place projects. Prerequisite: 301. Twelve laboratory and lecture periods. Fee $2.00.

303. *Woodworking.* (6) Advanced Machine Woodworking. Advanced cabinet construction. Introduction to millwork, kitchen units, built-in cabinets. Use of hardwares and linoleum. Prerequisite: 302. Twelve laboratory and lecture periods. Fee $2.00.

401. *Carpentry.* (6) Wall and floor framing, types of wall framing, frame construction problems, sill construction, column girders and beams floor construction. Joists and bridging corner construction, wall plates, framing rough openings for windows and doors, wall sheating, plaster grounds, special framing problems. Prerequisite: 303. Twelve laboratory and lecture periods. Fee $2.00.

402. *Carpentry.* (6) Roof framing and stair construction. Styles of roofs, principles of roof framing, unit measurements, application of unit measurements, use of framing square, in layout of rafter length common, hip valley and jacks rafter. Roof design, types of stairs. Prerequisite: 401. Fee $2.00.

403. *Estimating and Specifications.* (6) Methods used in making estimates of costs as applied to house construction. Study of specifications as ordinarily prepared by architects. Prerequisite: 402. Twelve laboratory and lecture periods. Fee $2.00.

DEPARTMENT OF VOCATIONAL TECHNICAL TRAINING

Preston E. Stewart, *Head*

The Department of Vocational Technical Training was organized at the institution in 1945, in order to meet the demand for technically trained personnel which was brought about by increasing industrial development in this state. This department had just begun to be recognized and to be operated effectively at the time of the beginning of the Second World War.

The entire facilities of this department were made available for specialized veterans' and non-veterans' training purposes in August, 1945. Many new

courses were organized to train technicians and workmen for industries having plants in this area. The laboratories, class rooms, and shops of the School of Engineering are utilized for this training.

Specialized and special vocational courses of two years in length are offered for the purpose of meeting the needs of persons who prefer to take training leading to immediate employment. The primary purpose of this department is to train men and women for positions which occupy an area between the skilled crafts and the highly scientific professions.

The department is organized to serve effectively the following types of persons:

Persons who for financial or other reasons cannot devote four years or more to study; or

Persons who have acquired a good general educational background, but who now desire to take specialized training to enter a field of their special interest; or

Persons who have had industrial experience and who have found the particular occupation in which they are interested but who need further specialized training to advance in this field; or

Persons who possess the aptitude, ability, and interests to develop by actual doing rather than by formal study alone; or

Persons who have a career plan definitely in mind.

Graduates of the Department of Vocational Technical Training who also passes the necessary personal qualities of leadership should, with some experience, be qualified to successfully hold down such jobs as (a) Production and Maintenance Supervisors (b) Head automobile mechanics (c) Foremen and assistant foremen of construction and repair firms, (d) C A A Licensed A and E Aircraft mechanics, (e) Engineering aids (f) skilled Craftsmen and Industrial workmen and (g) Semi-technical training.

Certificates for vocational technical training will be granted those who satisfactorily complete the respective technical training curricula with a minimum of 2000 clock hours of which at least one half must be done in residence.

SPECIALIZED TRADES

Preston E. Stewart, *Head*

Course Description. Related Subjects (Taught by Staff Members of the Department). Required of all students registered in the Department.

Related English I. A study for everyday living. Fundamentals of speech and grammar, pronunciation, spelling, writing and defining technical words and terms. Writing of short sentences. Required of all first year students. Three quarters. Two one-hour periods per week. Twenty clock hours credit each quarter.

Related English II. Written and oral description of jobs performed in the related shop classes; reading and interpreting technical literature, writing job specifications and business letters. Required of all second year trade students. Three quarters. Two one-hour periods per week. Twenty clock hours credit each quarter.

Related Mathematics I. Study of fundamental principles necessary as a background for estimating, calculating of cages, materials and supplies. Re-

quired of all trade students one quarter. Two one-hour periods per week. Twenty clock hours credit per quarter.

Related Mathematics II. Estimating and calculating of job cost based upon labor and materials. Required of all trade students one quarter. Two one-hour periods per week. Twenty clock hours credit per quarter.

Related Drawing I. Reading of blueprints of ordinary working drawings and interpretation of symbols. Required of all trade students one quarter. Two to three two-hour periods per week. Forty to sixty clock hours credit per quarter.

Related Drawing II. Fundamentals of making ordinary working drawings and detail sketches. Required of all trade students one quarter. Two to three two-hour periods per week. Forty to sixty clock hours credit per quarter.

Industrial Relations I. Everyday business problems; fundamental principles of laws most needed in everyday business transactions. Required of all trade students one quarter. Two one-hour periods per week. Twenty clock hours credit per quarter.

Industrial Relations II. A study of employer-employee relations, and labor unions. Required of all trade students one quarter. Two one-hour lecture per week. Twenty clock hours credit per quarter.

Aero Mechanics

The curriculum in Aero Mechanics is designed to meet C. A. A. standards for both the Aircraft and Aircraft Engine licenses.

Unit 1. Elementary Aircraft. Regulations; airplane types; aviation history; fuselage construction; drafting layouts of wing and tail sections; construction ½ scale; metal fabrication; welding. Minimum 260 clock hours.

Unit 2. Elementary Engines. Principles of internal combustion, diesels; lubrication; oil, fuel, electrical and carburetion systems; dissection of all types engines, propellers, carburetors and magnetos. 260 clock hours minimum.

Unit 3. Advanced Fuselage. Analysis and estimation of repairs; structural repair, alignment and priming; interior finish; glass, seat, instrument and control installation. All work on "live" equipment. 255 clock hours minimum.

Unit 4. Advanced Engines. Disassembly; micrometer, microsopic and magnaflux inspection; assembly; timing; running of Continental, Lycoming, Pratt and Whitney, Kinner, Wright, and other engines; trouble shooting; labor and parts cost estimation. 260 clock hours minimum.

Unit 5. Advanced Wing. Inspection and analysis of repair work; repair methods, wood and metal; hand and spray doping, fabric covering and repairs; lettering; assembly, rigging and inspections; weight and balance procedure; C. A. A. forms. 260 clock hours minimum.

Unit 6. Field Work. Assignment to line duty at airport, practice teaching, C. A. A. practical and written examinations. 255 clock hours minimum.

Advanced Aero Mechanics

(Open only to those who have completed Aero Mechanics Units I through 6).

Unit 7. Airport Operation. Specialization course in airport operation and foremanship. 260 clock hours minimum.

Unit 8. Repair Station Operation. Specialization course in repair operation and stock control. 260 clock hours minimum.

Unit 9. Elementary Parachutes. A study of the fundamental principles involved in the elements of parachute rigging; regulations, canopy folding; and suspension line stowage. 260 clock hours minimum.

Unit 10. Advanced Parachutes. Inspection and analysis of repairs made to harness, pack and canopy; regulations governing same. Packing of Q. A. seat and back packs, standard A. N. seat, back and chest packs. Drop tests, jumping, theory and simulated jumps. 260 clock hours minimum.

Auto Mechanics

Unit 1. *Bench Work and Engines.* Familiarization of tools and equipment, care and operation of tools and equipment. Study of bolts, nuts, screws and threads. Engine design and principles, disassembly, cleaning and inspecting engine parts. Mechanical principles, assembly of engines. 260 clock hours minimum.

Unit 2. *Engine Accessories, Carburetion, and Lubrication.* Study of functions and repairs of starters, generators, ignition devices, and engine accessories. Study of combustion and fuel. Study of function, repair and maintenance of carburetors, fuel pumps, fuel lines. Study of functions, repair and maintenance of lubrication system. 258 clock hours minimum.

Unit 3. *Engine Overhaul.* Fitting and installing piston rings, inspecting and grinding valves, adjusting valve stem clearance, cleaning and adjusting spark plugs; inspecting, cleaning and adjusting ignition points. Inspecting and testing crank shafts; valve timing, ignition timing, motor analysis. 258 clock hours minimum.

Unit 4. *Chassis Maintenance and the Hydraulic Brake System.* Maintenance processes, disassembly and assembly of clutches, transmissions, hydramatic transmissions and fluid drive units. Repairs and maintenance of universal joints, drive shafts and final drives. Principles of the hydraulic brake system.

Unit 5. *Advanced Accessories and Electrical Appliances.* Starters, generators, magnetos, battery ignition systems, wiring. Relays and voltage regulators. 258 clock hours minimum.

Unit 6. *Body, Fender Work, Spray Painting, Gas and Electric Welding.* Metal bumping, shrinking, filling and sanding; lead glazing, priming, surfacing and finishing. Color tinting, lacquers and synthetic enamels. Principles and practice of gas and electric welding as applied to auto mechanics.

Advanced Auto Mechanics

Unit 7. *Carburetor and Fuel Pump.* Study of the function of the carburetor and fuel pump in relation to the power plant. 260 clock hours minimum.

Unit 8. *Electrical System.* A complete study of the electrical system of the automobile. 260 clock hours minimum.

Unit 9. *Testing Equipment.* Study and use of testing equipment for the automotive field. 255 clock hours minimum.

Cabinet-Making

Unit 1. *Technical Woodwork.* Care and use of woodworking hand tools and machines; joinery with special emphasis on accuracy; classification of lumber; introduction to cabinet joints and cabinet construction. 255 clock hours minimum.

Unit 2. *Furniture Construction and Restoration.* Methods of constructing antique and modern furniture; study and examination of completed pieces of furniture; restoring and repairing modern and antique furniture. 260 clock hours minimum.

Unit 3. *Wood Turning and Surface Decoration.* Lathe parts, speed, tool processes; spindle, faceplate, and spiral turning, decorating wood surfaces in laying, veneering and carving. 260 clock hours minimum.

Unit 4. *Wood Finishing and Simple Upholstery.* Mixing and applying water acid and oil stains wood filler, shellac, oil varnish and paint. Care and use of tools, methods of webbing and springing up of furniture, building of spring edges, stitched edges, rolled edge and pillor edge, making of various types of cushions. 260 clock hours minimum.

Unit 5. *History of Furniture and the Art Periods.* The identification, development and construction of furniture through the many art periods: basic to buying, selling, restoring and reproducing antique and modern furniture. 255 clock hours minimum.

Unit 6. *Estimating Specifications and Designing.* Methods used in making of estimates as applied to the construction and restoration of modern and antique furniture as ordinarily prepared by furniture designers, designing and drawing of furniture. 260 clock hours minimum.

Advanced Cabinet-Making

Unit 1-A. *Advanced Furniture Construction.* Methods of constructing the more difficult pieces of modern furniture also the methods and construction for built-in furniture. 255 clock hours minimum.

Unit 2-A. *Advanced Wood-Turning.* Methods, processes, and materials used in large turned work, off-center turning and fancy work. 260 clock hours minimum.

Unit 3-A. *Advanced Wood-Finishing.* Finishing and refinishing methods used to obtain the modern types of furniture finishes. 260 clock hours minimum.

Carpentry

Unit 1. *Tools, Machines and Materials.* Historical study of development of tools and materials in woodworking. Care and use of tools and materials. Classification of lumber, fundamental operations in carpentry work. Methods of construction involving the selection of building materials on the basis of their structural and aesthetic merits and the broad application of the principles of modern wood frame construction, according to approved practices. 260 clock hours minimum.

Unit 2. *Woodworking Processes.* Sizing, joining, panel construction, kerfing, routing, introduction to cabinet construction and carpentry construction. 260 clock hours minimum.

Unit 3. *Framing.* Study of types and methods of house framing. Construction of foundations, wall and roof. 260 clock hours minimum.

Unit 4. *Exterior Carpentry.* Methods and applying of sheathing and siding, cornices, water tables. Construction of window and door frames, screens, blinds, porches and steps. 255 clock hours minimum.

Unit 5. *Interior Carpentry.* Methods and applying of standard trims, flooring, ceiling, wainscotings and wall boards. Fitting doors and windows. Installing hardware. 255 clock hours minimum.

Unit 6. *Estimating and Specifications.* Methods used in and making of estimates of costs as applied to buildings. Study of specifications as ordinarily prepared by architects. 260 clock hours minimum.

Advanced Carpentry

Unit A-1. *Advance Units in Millwork and Stair Building.* Picture window construction. Doors and window sash construction. 260 clock hours minimum.

Unit A-2. *Architecture Woodwork Construction.* Door entrances, kitchen unit construction, built-in closets units. 260 clock hours minimum.

Unit A-3. *Advance Stair Building.* Stair finish, stair layout, arrangement of stairs in house plan. 255 clock hours minimum.

Commercial Refrigeration and Air Conditioning

Unit 1. *Commercial Refrigeration.* Elementary principles of mechanical refrigeration. A study of the various automatic refrigerating mechanisms used in commercial installations. 260 clock hours minimum.

Unit 2. *Commercial Refrigeration.* Assembly, disassembly, and repair of compressors, motors, and the various controls used in commercial refrigeration. A detailed study of refrigerants; charging and converting refrigerants; testing and inspection procedures. 260 clock hours minimum.

Unit 3. *Installation and Servicing.* A study of coded and non-coded installations. Location and servicing of condensing units. Cooling coils and refrigerant controls in the storage rooms, and locker plants. 255 clock hours minimum.

Unit 4. *Air Conditioning.* The fundamental operations of sheet metal practices as used in the design of heating and air conditioning systems, developing patterns and laying out work, hand and machine operations. 260 clock hours minimum.

Unit 5. *Air Conditioning.* Cooling and heating load calculations. A study of the properties of air and the methods of treating it for human comfort. The development of refrigerating mechanisms for cooling and dehumidifying air. 255 clock hours minimum.

Unit 6. *Air Conditioning.* Design of air conditioning and refrigeration systems for small buildings. A study of heating and air conditioning contracts and specifications. Costs and estimating. 260 clock hours minimum.

Drafting

Unit 1. *Introduction to Architecture.* Survey of the building industry; architects procedure; use of drawing tools; lettering; planning indication; simple design problems. 300 clock hours minimum.

Unit 2. *Analysis and Solution of Simple Buildings.* Study of space and mass; structural details; outline specifications. 300 clock hours minimum.

Unit 3. *Analysis of Simple Interiors, Color, Furnishings.*

Unit 4. *Analysis and Solution of Buildings of Moderate Complexity.* Emphasis on domestic, civic and recreational problems. 300 clock hours minimum.

Unit 5. *Description and Analysis of Heating.* Air conditioning, water supply, plumbing, electrical wiring, illumination, and accoustical treatment. 300 clock hours minimum.

Unit 6. *Material Quantities.* Estimating, builders' organization and procedure job records. 300 clock hours minimum.

Electricity

Unit 1. *A. C. and D. C. Theory.* Nature of the flow of electricity, resistance, Ohm's Law, Kircchhoff's Laws, series circuits, parallel circuits, battery E. M. F., primary and secondary battery magnetism, D. C. generators, A. C. circuits, power factor, A. C. vectors, impedance resistance polyphase circuits, A. C. generator transformers. 260 clock hours minimum.

Unit 2. *Electrical Wiring.* Wiring symbols and basic devices, basic circuits, types of conductors, sizes, proper selection of wires, wire connection, wiring methods, branch circuits, over-current prot. devices, installation planning, farm wiring, nature of apartment wiring, National Electrical Code, residential lighting, festoon wiring, wiring for motors, wiring for offices, store wiring, low voltage wiring, measurement of power grounding. 260 clock hours minimum.

Unit 3. *Electric Motor Repair.* Split phase motor, capacitor motors induction motor, synchronous motors. A. C. motor controls, D. C. motor controls, polyphase motors, speed regulation. 255 clock hours minimum.

Unit 4. *Advanced Electrical Wiring.* Wiring layouts, industrial electrical wiring, non-residential lighting, multi-dwelling, National Electric Code, insulation testing trouble shooting, wiring old buildings, wiring isolated lighting plants, domestic heating, installation of ranges, installation of hot water heater, electrical appliance repair, estimating and biding, exit and emergency lighting. 260 clock hours minimum.

Unit 5. *Lighting.* Light and color reflection, incandescent lights, fluorescent lights, distribution of light maintenance factor, utility factor, room index, show window lighting, candle power, candle power curve shadows, glare. 260 clock hours minimum.

Unit 6. *Wiring.* Industrial equipment, switchboards and panelboards, electrical welder, industrial lighting, power factor correction, power meters. 255 clock hours minimum.

Advanced Electricity

Unit 1-A. *Wiring for Power.* Industrial Electrical Motors and Wiring; transformers and connections; industrial lighting; theater wiring; distribution; power service calculation. 260 clock hours minimum.

Unit 2-A. *Electrical Drafting.* Drafting instructions; symbols; generators and motor feed panels; three phase panels; out-of-door sub-stations; wiring layouts; illumination; switch and bus structures. 260 clock hours minimum.

Unit 3-A. *Electrical Contracts and Specifications.* Contract writing; types of contracts; specifications. 255 clock hours minimum.

Electrical Household Appliances

Unit 1. *History and elementary principles* of electrical household appliance. Use of tools and equipment in soldering, bending, flaring and swedging. 260 clock hours minimum.

Unit 2. *Transferring, removing and charging* a system with refrigerant. Converting from one type system to another. 260 clock hours minimum.

Unit 3. *Testing and overhauling* refrigerant control valves. 260 clock hours minimum.

Unit 4. *Installation, testing, replacing* of heating elements, insulation, thermo switches, in domestic and commercial appliances. 255 clock hours minimum.

Unit 5. *Installation, testing, replacing, adjusting* part of mechanical, domestic and commercial appliances. 255 clock hours minimum.

Unit 6. *Motor and compressor testing and rebuilding.* 260 clock hours minimum.

Foundry

Unit 1. *General Foundry.* A historical study of the development of the foundry. Care, use and maintenance of tools, materials and foundry equipment. An elementary study of general foundry operations and practices; shop rules, safety regulations and general accepted molding practices. 255 clock hours minimum.

Unit 2. *Molds and Molding.* A detailed study and practice of the various molding and casting methods such as green sand, metal, novelty and centrifugal molding. 260 clock hours minimum.

Unit 3. *Cupola.* Operation and maintenance of the cupola; fundamental methods and principles of cupola operation charges, combustion and alloying principles. 260 clock hours minimum.

Unit 4. *Metallurgy of Cast Iron.* Manufacture of cast iron with relation to physical properties. A practical study of pouring, chipping, grinding, sandblasting and inspecting. 255 clock hours minimum.

Unit 5. *Core Making.* Practical applied study and operation of core making including core box construction, foundry facings, core sands and binders. Applied practice in core making. 260 clock hours minimum.

Unit 6. *Malleable Iron, Steel and Non-Ferrous Metals.* A detailed study of the physical properties of malleable iron, steel and non-ferrous metals with relation to foundry procedure. Practical application of molding and casting various non-ferrous metal. 260 clock hours minimum.

Masonry

Unit 1. *Fundamentals of Bricklaying.* The study of materials; care and use of tools. Mortar making and spreading; laying brick between vertical points, building piers, plumbing and leveling. 255 clock hours minimum.

Unit 2. *Foundations and Brick Construction.* The study and construction of simple, spread and stepped footings; foundation walls and underpinning. Excavating and construction of walls, steps and flues. 260 clock hours minimum.

Unit 3. *Advanced Brick Construction.* The study and construction of chimneys, mantles, special wall designs, arches, and bonds. 260 clock hours minimum.

Unit 4. *Fundamental Concrete Work and Cement Finishing.* The study of materials; care and use of tools. Application of concrete mixtures, form building. Construction of foundation walls, walks and floors. 260 clock hours minimum.

Unit 5. *Fundamentals of Plastering.* The study of common materials; care and use of tools. Mixtures and application. 260 clock hours minimum.

Unit 6. *Estimating and Specification.* Methods used in and making of estimates of costs as applied to buildings. Study of specifications as ordinarily prepared by architects. 255 clock hours minimum.

Advanced Masonry

Unit 1-A. *Layout Work.* Hillside work; setting batter boards; laying-out first courses; building corner leads; locating joists; locating doors, etc., building window sills; building water table. 259 clock hours minimum.

Unit 2-A. *Contracts.* A study of contracts making; local building codes; general building laws. 258 clock hours minimum.

Unit 3-A. *Estimating.* Study of and making of estimates on labor costs, materials costs, overhead, taxes, and insurance. 250 clock hours minimum.

Unit 4-A. *Glass Block Construction.* Theory of glass block construction; glass block windows, curved glass block panels; glass block reinforcing, expansions and anchorage. Glass block shower stalls, doorways, and walls. 258 clock hours minimum.

Plumbing and Heating

Unit 1. *Pipe Trades. Tools and Materials.* Plumbing defined—develop tool handling technique, duties and responsibilities, classification and selection of materials. 250 clock hours minimum.

Unit 2. *Pipe Trades. Plumbing.* Pipe forming, threading, yarning cast iron joints, leading, sweating and making pipe joints. 260 clock hours minimum.

Unit 3. *Pipe Trades. Plumbing Operations.* Development of skills involving measurements, installations of regulators, tapping mains, plumbing laws and regulations, blueprint reading. 260 clock hours minimum.

Unit 4. *Pipe Trades. Plumbing Make-Up Testing.* The assembly of drainage, ventilation, main vents, continuous vents. The roughing in of water services, the application of water, smoke and air tests. Water treatment method and purification. 260 clock hours minimum.

Unit 5. *Pipe Trades. Plumbing Estimating and Installation.* Determining cost of labor and materials for installations. The assembly and study of fixtures, pumps, technique and practical soldering, wiping lead joints. Welding and brazing. 260 clock hours minimum.

Unit 6. *Pipe Trades, Plumbing Layouts.* Calculating heat, gas and water requirements for buildings, making layouts for actual jobs, checking installation. Steam and hot water heating systems. Copper tubing and fitting. 260 clock hours minimum.

Radio

Unit 1. *Principles of Radio.* Principles and practice of radio communications, lectures, demonstrations and laboratory experiments. 330 clock hours minimum.

Unit 2. *Maintenance and Repair.* Maintenance and repair of radio receivers and sound equipment. 330 clock hours minimum.

Unit 3. *Receiver Design.* Methods and circuits of modern radio receivers theory and practice. 339 clock hours minimum.

Unit 4. *General Servicing.* General servicing techniques used in the repair of modern radio receivers and electronic equipment. 337 clock hours minimum.

Unit 5. *Communications.* Laws and procedures governing the transmission of radio waves as prescribed by F.C.D. 330 clock hours minimum.

Unit 6. *Shop Practices.* Methods and procedures used in a modern radio repair shop. 334 clock hours minimum.

Advanced Radio

Unit 1-A. *Sound and Its Reproduction.* Theory of sound waves and their development. Developing systems for the reproduction amplification of sound. Public address systems, installation and repair. 260 clock hours minimum.

Unit 2-A. *Recording of Sound.* The cutting of disk recordings, wire and tape recordings. The repair of recording instruments. 255 clock hours minimum.

Unit 3-A. *F. M. Receivers.* Advanced theory on frequency modulated receivers. Maintenance repair and alignment. 255 clock hours minimum.

Unit 4-A. *Introduction to Television.* Basic theory of operation, types of tube sets, and antennas. 260 clock hours minimum.

Sheet Metal

Unit 1. *Sheet Metal Tools and Materials.* The fundamental operations of sheet metal practice, hand and machine operations, use of tools and materials. 260 clock hours minimum.

Unit 2. *Sheet Metal Pattern Work and Development.* Use of parallel and radial line development in sheet metal layouts. A study of geometrical problems and mensuration in relation to sheet metal pattern drafting. 255 clock hours minimum.

Unit 3. *Sheet Metal Pattern Work and Development.* (continued) Sheet metal pattern drafting by use of two methods of triangulations and typical problems in trigonometry and descriptive geometry relating to sheet metal layouts. 255 clock hours minimum.

Unit 4. *Roofing, Guttering and Cornice Work.* The construction and erection of sheet metal work with relation to building construction and a study of technical information concerning same. 260 clock hours minimum.

Unit 5. *Heating and Ventilating.* The theory of heat transmission and the design of heating, ventilating and air-conditioning systems. The construction and erection of typical sheet metal features of these systems and the study of problems involved. 260 clock hours minimum.

Unit 6. *Sheet Metal Job Methods.* Time study of methods. Theory of labor and material cost estimation in a practical job application. Each student is required to assume full responsibility for the design, construction and erection of a complete job in guttering or heating. 260 clock hours minimum.

Upholstering

Unit 1. *Tools and Materials.* Names, makes, and proper use or tools. Methods of webbing and springing up furniture. Building of spring edges, stitched edges, and rolled edges. 260 clock hours minimum.

Unit 2. *Plain Upholstering.* Measuring and cutting materials: fitting and tacking. Learning furniture contours and designs. Relationship of pattern material to furniture design. 260 clock hours minimum.

Unit 3. *Decorative Upholstering.* A continuation of unit 2. Larger and more complex problems are introduced as tufting, piping, channeling, buttonbacks, false tufting and cushion making. 255 clock hours minimum.

Unit 4. *Furniture Restoration and Repairing.* Reqlueing of old pieces, replacement of broken parts, refinishing. 255 clock hours minimum.

Unit 5. *Reupholstering and Rebuilding.* Reupholstering and building up complex pieces of over-stuffed button, pipe and tufted furniture; special problems in designing; shop arrangement and material purchasing. 260 clock hours minimum.

Unit 6. *Slip Cover Making.* Methods of cutting, fitting, stitching and applying slip covers to chairs and other pieces of furniture. 260 clock hours minimum.

Advanced Upholstering

Unit 1-A. *Tufting.* Upholstering and reupholstering Victorian styles in tufts. Platform building and stuffing, measuring and marking backs marking and measuring cloth for tufts, applying buttons, stuffing tufts and tacking. 260 clock hours minimum.

Unit 2-A. *Advanced Slip Cover Making.* Measuring, cutting, fitting, according to pattern of material, pleated skirts, gathered skirts, use of moss fringe. 255 clock hours minimum.

Unit 3-A. *Refinishing.* Use of oil stain, varnish stains, use of lumber, lamp black in stains in matching and retouching. 255 clock hours minimum.

DEPARTMENT OF AIR SCIENCE AND TACTICS

RESERVE OFFICERS TRAINING CORPS

Faculty and Staff

JACK D. HOLSCLAW, Captain, U.S. Air Force; D.C. *Professor of Air Science and Tactics.*

PAUL L. ALLEN, Major, U.S. Air Force; B.S. *Assistant Professor of Air Science and Tactics.*

CHARLES E. WALKER, Captain, U.S. Air Force; B.S. *Assistant Professor of Air Science and Tactics.*

ELDRIDGE F. WILLIAMS, Captain, U.S. Air Force; B.S. *Assistant Professor of Air Science and Tactics.*

DARIUS A. KING, Master Sergeant, U.S. Air Force; B.A. *Instructor in Air Science and Tactics.*

JAMES W. MASON, Master Sergeant, U.S. Air Force. *Instructor in Air Science and Tactics.*

NATHANIEL G. BROOKS, Technical Sergeant, U.S. Air Force. *Instructor in Air Science and Tactics.*

ISRAEL L. HEARD, Technical Sergeant, U.S. Air Force. *Instructor in Air Science and Tactics.*

ROBERT E. CHESTNUT, Staff Sergeant, U.S. Air Force. *Instructor in Air Science and Tactics.*

Purpose of the Air Force Reserve Officers' Training Corps

The purpose of the A F R O T C is to develop in prospective college graduates the qualities of leadership and other attributes essential to their progressive advancement to positions of increasing responsibility in both military duties and in civil enterprises. Courses of study and other training activities are designed to impart the specialized knowledge and skills for the achievement of these objectives. The primary mission of the A F R O T C is to serve as the principal source of junior officers for the Reserve Forces of the United States Air Force and a major source of officers for the Regular Air Force.

Requirements

In keeping with the provisions of the Morrill (Land Grant) Act, Tennessee A. & I. State University requires as a pre-requisite for graduation that all physically qualified male students take A F R O T C training until they become academically classified as Juniors.

Enrollment and Continuances Requirements

In order to qualify for enrollment and continuance in the A F R O T C, each male participant must be (a) a citizen of the United States, (b) physically qualified as prescribed by Army Regulations, (c) accepted by the institution as a regularly enrolled student, and (d) not less than fourteen years of age and not have reached his twenty-third year at the time of enrollment in the basic course, nor twenty-five years of age at the time of enrollment in the advanced course, (with exceptions applying to veterans of World War II). Applicants must successfully complete such general survey or screening tests as

may be prescribed. To be eligible for admission to the advanced course, students (a) must have successfully completed the two-year basic course or possess officially recognized equivalent credits, (b) must be selected by the head of the institution and the Professor of Air Science and Tactics (PAS & T), and must execute a contract in writing agreeing to complete the advanced course and to accept a Reserve Commission if tendered, unless relieved from contract obligations by proper authority or by action of law.

Credits for Previous ROTC Work or World War II Service

Successful completion of three Junior (High School) ROTC years with an average grade of "C" or better is credited as the equivalent of the first year of the Senior (College) Division basic course. Students who present a record of three years of Junior ROTC work, signed by the PAS & T of the Junior unit attended, are eligible to enroll for second year of basic training if otherwise qualified. (Note: Credit cannot be allowed for military training given at schools under the provision of par 55c of the National Defense Act.) Full credit is allowed for Senior ROTC work successfully completed at other institutions.

Credits for Honorable Active Service

Credit for honorable active service in World War II will be given as follows:

1. For not less than one year active service, credit in lieu of the first year of the basic course.
2. A veteran with three years of active service may be exempt from enrollment in AFROTC by the approval of the President of the Institution and the PAS & T.

Emoluments

All students enrolled in the Senior Division AFROTC are furnished texts and uniforms (or commutation in lieu of uniform) by the government through the Military Property Custodian, Tennessee A. and I. State University. Enrollees are required to deposit $10 with the University as surety against loss or damage of uniforms or equipment for which the University is accountable to the government. At the end of the spring quarter, this deposit is returned to the student provided he obtains a proper clearance for uniforms and equipment. In addition to being furnished texts, uniforms and other equipment, students enrolled in advanced AFROTC are paid commutation in lieu of rations, but not to exceed 595 days. For the fiscal year 1951-52, this amounts to ninety cents per day. Mileage to and from summer camp is paid by the government at the present rate of five cents per mile. While attending summer camps each enrollee receives the pay of the seventh grade (about $75 per month) in addition to receiving rations in kind.

Conduct, Organization, and Administration

The National Defense Act of 1916 vests control of AFROTC units stationed at educational institutions in the head of each institution. At Tennessee A. & I. State University, General Orders governing conduct, organization, and administration of the AFROTC units are published annually as approved by the President of the University. Each enrollee is furnished a copy of these orders.

Sponsored Activities

The Military Department sponsors the following activities:

(1) The AFROTC Rifle Team. Annually, enrollees are selected to represent Tennessee A. and I. State University AFROTC in small bore rifle competition with other colleges and institutions. Members of this team are awarded an athletic letter award.

(2) The Arnold Air Society, a national AFROTC society for outstanding advanced students.

College Credits

Tennessee A. and I. State University grants the following credits for Air Science Courses:

Basic—Freshman and Sophomores (male)

Air Science I .....3 quarter hours per year
Air Science II .....3 quarter hours per year

Advanced—Selected Juniors and Seniors (male)

Air Science III .....9 quarter hours per year
Air Science IV .....9 quarter hours per year

The Senior AFROTC Program

College level AFROTC is termed "Senior Division AFROTC." Tennessee A. and I. State University has a Senior Division AFROTC Unit. The program for the unit includes four (4) years of College and Military Subjects and is divided into two divisions:

1. *Basic Courses*—required of all physically qualified freshmen and sophomores as prerequisites to graduation.

2. *Advanced Courses*—Students who have successfully completed the basic courses, who are academically classified as juniors, and who have displayed qualities essential for further training or potential officers in the U. S. Air Force may enter the Advanced Course.

PROGRAM OF STUDY

1. *Basic Courses*

a. Freshman Year..Air Science I—151, 152, 153, *World Political Geography*

Scope—Air Science I consists of sixty (60) hours devoted to World Political Georgraphy and thirty (30) hours of Leadership Drill and Exercise of Command.

(1) *World Political Geography* is the study of the areas and resources of the various states organized as political units, together with the people who live in those areas.

This course is designed to give the student an understanding of the climate, landforms, surface configurations, oceans, seas, and other bodies of water, vegetation, location of natural resources, and the manner and degree to which these resources are efficiently utilized.

(2) *Leadership, Drill, and the Exercise of Command.* The purpose of this phase of training is to assist the student in developing qualities of leadership and discipline essential to successful Air Force Officers and to acquaint him with the fundamentals of drill.

(b) Sophomore Year ..... Air Science II—251, 252, 253

Scope—This course is divided into two major parts; sixty (60) hours for basic Air Force subjects; and thirty (30) hours devoted to Leadership, Drill and the Exercise of Command.

The academic phase is broken down as follows:

(1) Organization for the Defense of the U. S. (14 hrs.).
(2) Maps, Aerial photographs, and aerial navigation (10 hrs.).
(3) Aerodynamics and propulsion (15 hrs.).
(4) Meterology and navigation (5 hrs.).
(5) Applied Air Power (12 hrs.).
(6) Personal Maintenance (4 hrs.).
(7) Field Trip to local Air Force Base.

Leadership, Drill and Exercise of Command (Same as for Air Science I).

2. *Advanced Courses*

This phase of Air Science Courses is divided into three Career training options:

a. *Administration and Logistics*

Air Science III—351, 352, 353 (90 hrs.) junior year.

Scope—This course begins with a short study of individual records of the officer and airman and follows with non-appropriated funds. It proceeds to a study of Air Force Supply to include organization, publications, stock control, receipt and turn-in, storage, issue, accounting for and disposal of property. Finally, a study is made of transportation to include motor, air, and commercial transportation.

Air Science IV—451, 452, 453 (50 hrs.) senior year.

Scope—This course begins with a study of the purpose and basic functions of the Staff. It then proceeds to the administration of personnel from the level of the Wing Base Staff. The course then proceeds to a brief study of the function of the Air Comptroller and Food Service Supervisor.

b. *Flight Operations*—Physical qualifications for flight training are prerequisite for selection to pursue this career training option. Upon successful completion of this option and receipt of commission, Officer attends Flight Training School.

Air Science III—351, 352, 353 (90 hrs.) Junior year.

Scope—This course is designed to provide instruction which will facilitate and materially augment the academic phases of training in the Flying Schools of the Air Training Command. The first thirty (30) hours of instruction will be devoted to the Major Commands to include the mission, organization, types of equipment and method of operation of each. The remaining sixty (60) hours will be devoted to instruction in Principles of Flight, Aircraft Engineering and Introduction to Instruments, Air Navigation, Meterology and New Developments.

Air Science IV—451, 452, 453 (50 hrs.) Senior year.

Scope—This course is designed to offer advanced instruction in Navigation and Bombing to include the theory of Radar as applied to both. Instructiton, also, will cover, in general, the duties and responsibilities of an Electrical Counter Measures Officer, AFSC—Radar Observer, and All Weather Fighter AFSC—

c. *General Technical*

Air Science III—351, 352, 353 (90 hrs.) Junior year.

Scope—This course is designed to point out the primary technical fields and the related equipment used in the U. S. Air Force, and how certain specialists contribute to the accomplishment of the assigned mission. The role of the Air Force as a whole, and the general organization, function, and operation of each major command is presented. Courses included in this option are: Problem Solving and writing, Familiarization and use of Technical Publications, Organization and Mission of the U. S. Air Force, The Wing Air Base, Technical Careers in the U. S. Air Force, Atomic Theory and Radiological Defense.

Air Science IV—451, 452, 453 (50 hrs.) Senior year.

Scope—This course is a continuation of the primary objectives pointed out in Air Science III. It will further develop the understanding of technical areas of endeavor within the Air Force and will indicate their application to specific missions and problems. New technical and scientific development and trends will be pointed out such as: New metals and plastics, aircraft and aerodynamics, engines and propulsion units, armament and weapons, Air Force Equipment, guided missiles and Nuclear energy.

UNIVERSITY EXTENSION AND FIELD SERVICES

W. V. HARPER, *Coordinator*

Purpose

The Division of University Extension is an administrative unit of Tennessee A. and I. State University organized for the purpose of granting educational services to those citizens of the state's social and economical structure not served by other academic areas on the campus. The division serves to integrate off-campus services with campus facilities.

Scope of Instruction

Extension courses at Tennessee A. and I. State University are classified into three groups to meet certain definite needs that are apparent in this state.

Group I. Courses of college grade are offered in the interest of those persons who have adequate preliminary training but whose occupations or means will not permit their attendance at the college. Students who find their college careers postponed or interrupted may well avail themselves of the opportunities in this group. By meeting certain requirements, students may secure credit towards the bachelor degree at Tennessee A. and I. State University; however, not more than 48 credit hours of work taken in extension will be counted towards resident credits for the bachelor degree.

Group II. A maximum of twelve hours of graduate credit may be secured through extension courses; however, such extension credit will only reduce the residence requirements for the master degree by six weeks. Courses earned in extension will be counted towards the minimum, 45-credit-hours requirement only when they meet the specific needs of the student as outlined by his graduate committee. In-service teachers may pursue a maximum of six credit hours per quarter.

Group III. Non-credit courses are designed as general cultural courses or as vocational courses for the person who is employed and who desires to further his efficiency in a particular field, or for general cultural improvement. College credit or college entrance credit may be secured through these courses, and certificates of proficiency will be awarded where justified.

Courses Available

Courses will be organized to meet specific needs provided such courses are described in the latest edition of the regular catalogue.

Other Extension Services

In addition to courses found in the college catalogue, provisions are made to meet the specific needs of special interest groups in the following areas: work shops, lectures, demonstrations, conferences and institutes. Arrangement for these services may be made through the Committee on Extension Education, Tennessee A. and I. State University, Nashville, Tennessee.

Who May Enroll

While most students admitted to these extension courses are high school graduates, anyone qualified by industrial business or military experience may enroll. Additional information regarding enrollment in extension courses may be secured by writing to W. V. Harper, Coordinator, Tennessee A. and I. State University, or by calling Nashville 42-5345.

Organization of Extension Courses

Extension courses, where offered for college credit, parallel similar courses offered for resident instruction and are taught by members of the college extension faculty. A three-hour credit course is divided into at least twelve assignments. The time necessary for preparation of a satisfactory report by a student on any assignment should be six hours. Each assignment requires certain reading in specified textbooks and the reflection necessary for proper organization of the material read and its application to the principles that the expected to be developed. The student is required to write his conclusions (in clear English) in the form of a report on each assignment, which is to be returned to the instructor for criticism and correction. Supplementary reading and reports may be demanded of the student on any assignment, when, in the judgment of the Committee on Extension Education, they are necessary. College entrance courses and vocational subjects are taught in much the same manner as collegiate courses.

Admission and Registration

No entrance examination is required for admission to the extension courses, but the right is reserved to reject any applicant who does not furnish complete or satisfactory data upon the official application form furnished him. Application for entry may be made at any time. For registration procedures, see bulletin on "Announcement of Educational Extension Program."

Credit

College credit or college entrance credit, as the case may be, will be given for completion of the courses in Group I, (see announcement) when requirements of the instructor concerned have been met and examinations have been passed and officially approved by the head of respective departments through which the course is offered. Students who enroll for degree credit, however, must meet the entrance requirements of the college.

Not more than 48 credit hours in extension courses will be accepted towards the bachelor degree. Of the total credits approved for certification, not more than one fourth may be earned through extension. Not more than six hours of such credit will be allowed for renewal of certificates. Courses numbered 300 (junior) and 400 (senior) earned through extension will not be accepted as meeting certification requirements for the elementary crtificates granted on the two-year college level.

Extension credits earned in other institutions will be accepted only if these have been earned in an institution which is a member of the Teachers College Extension Association or the University Extension Association. In no case will credits be accepted in excess of the maximum totals allowed for extension work as set forth in the above paragraphs regarding credits, and/or grades earned indicate that the student has profited from course or courses pursued.

Certificate Courses

The certificate courses are designed particularly for individuals or groups who wish to increase their knowledge in special fields. High school graduates having the specified prerequisites or citizens of Tennessee, twenty-one years of age and apparently capable of successfully completing the required work, may enroll in certificate courses. Tennessee A. and I. State University certificates will be awarded students who satisfactorily complete the course.

Credit for work completed in an extension course shall be based on: (a) The number of clock hours, and (b) the quality of work performed.

Twelve clock hours of class meetings are required for one quarter hour's credit, or thirty-six clock hours for three quarter hours credit.

Judgment of the quality of work performed is passed on by the heads of the several departments at this University and the Committee on Extension.

Veterans

Veterans of World War II may enroll in any of these courses under the G. I. Bill upon presentation of Certificates of Eligibility, which may be obtained from the Veterans Administration. Veterans should consult their local veteran's administration office before registering for any course.

In keeping with the general policies of the University, veterans enrolling in extension courses under the G. I. Bill will be required to pay tuition. In addition to the registration or maintenance fee of $5.00 credit, the veteran will be assessed $4.92 per quarter credit hour for tuition.

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