BULLETIN



MARCH 1965

SPECIAL COLLECTIONS

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Nashville, Tennessee

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ANNOUNCEMENTS

1965-1966

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NASHVILLE, TENNESSEE

MARCH, 1965

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Tennessee Agricultural and Industrial State University

1965-1966 University Calendar

Fall Quarter 1965

September 1, Wednesday.....Last Date to receive Applications and transcripts for Fall Quarter
September 17-18, Friday-Saturday.....Faculty and Staff Workshops
September 20-23, Monday-Thursday .....Freshman Week
September 22, Wednesday, (8.00 a.m.-4:00 p.m.)..Registration for Freshmen and New Students; Undergraduate and Graduate
September 23-25, Thursday-Saturday (8:00-4:00 p.m.).....Registration Registration for Upperclassmen and Graduate Students
September 27, Monday .....Classes Begin at 8:00 a.m.
October 5, Tuesday.....Opening Convocation
November 3-4, Wednesday-Thursday.....Mid-Term Examination
November 25-27, Thursday-Saturday.....Thanksgiving Holidays
December 14-18, Tuesday-Saturday.....Examinations, Fall Quarter
December 18, Saturday....Christmas Recess Begins After last scheduled class

Winter Quarter 1966

January 3, Monday.....Registration, Winter Quarter
January 4, Tuesday.....Classes Begin at 8:00 a.m.
February 8-9, Tuesday-Wednesday.....Mid-Term Examinations
March 11-16, Friday-Wednesday.....Examinations, Winter Quarter
March 17-19, Thursday-Saturday.....Spring Recess

Spring Quarter 1966

March 21, Monday.....Registration, Spring Quarter
March 22, Tuesday.....Classes Begin at 8:00 a.m.
April 27-28, Wednesday-Thursday.....Mid-Term Examinations
May 30-June 3, Monday-Thursday.....Examinations, Spring Quarter
June 5, Sunday.....Baccalaureate-Commencement

SUMMER QUARTER 1966

First Term

June 13, Monday.....Registration
June 14, Tuesday.....Classes Begin at 8:00 a.m.
July 4, Monday.....Holiday
July 15-16, Friday-Saturday.....Examinations, First Six Weeks

Second Term

July 18, Monday..... Registration
July 19, Tuesday.....Classes Begin at 8:00 a.m.
August 18-19, Thursday-Friday.....Examinations, Second Six Weeks
August 21, Sunday.....Baccalaureate-Commencement Exercises

ACADEMIC ORGANIZATION OF THE UNIVERSITY

GRADUATE SCHOOL

Department of Administration, Curriculum, and Instruction
Department of Agricultural Education
Department of Animal Science
Department of Art and Music Education
Department of Biological Sciences
Department of Business Education
Department of Chemistry
Department of English
Department of History and Political Science
Department of Health and Physical Education
Department of Modern Foreign Languages
Departemnt of Plant Science
Department of Psychology
Department of Science Education and Geography
Department of Speech and Drama

SCHOOL OF AGRICULTURE AND HOME ECONOMICS

Department of Agricultural Education
Department of Animal Science
Department of Home Economics
Department of Plant Science

SCHOOL OF ARTS AND SCIENCES

Department of Biological Sciences
Department of Chemistry
Department of English
Department of History and Political Science
Department of Modern Foreign Languages
Department of Physics and Mathematics
Department of Science Education and Geography
Department of Sociology
Department of Speech and Drama

SCHOOL OF EDUCATION

Department of Administration, Curriculum, and Instruction
Department of Art and Music Education
Department of Economics and Business Administration
Department of Business Education
Department of Health and Physical Education
Department of Psychology

SCHOOL OF ENGINEERING

Department of Architectural Engineering
Department of Civil Engineering
Department of Electrical Engineering
Department of Industrial Education
Department of Mechanical Engineering

DEPARTMENT OF AEROSPACE STUDIES

(Reserve Officers' Training Corps)

DEPARTMENT OF FIELD SERVICES AND EXTENSION

ACCREDITATION

Tennessee Agricultural and Industrial State University is a member of and is accredited by the Southern Association of Colleges and Schools, The National Council for Accreditation of Teacher Education, and the Teachers College Association of Extension and Field Services. The institution is also a member of the American Association of Land-Grant Colleges and State Universities.

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Mazie O. Tyson, B.S., Howard University; M.A., Ohio State University. *Associate Professor of Geography.*

Marvin V. Ussery, Jr., B.S., Oregon State College, Captain, U.S., Air Force. *Assistant Professor of Aerospace Studies.*

Betty Van Buren, B.S., M.S., Tennessee A. and I. State University. *Instructor in Speech and Drama.*

Walter Vincent, B.S., Tennessee A. and I. State University. *Part-time Instructor in Architectural Engineering.*

Alma T. Watkins, B.S., Ohio State University; M.A., Columbia University; Ph.D., Cornell University; Foreign Study, Biblioteca Mendendez Y Pelaya, Santander, Spain; University of Toulouse, France; University of Mexico. *Professor and Head of the Department of Modern Foreign Languages.*

Sherman Webster, A.B., South Carolina State College; M.A., New York University; Ed.D., Indiana University. *Professor and Head of the Department of Sociology.*

Arthuryne J. Welch, B.S., Prairie View State College; M.S., Tenn. A. and I. State University; Ed.S., Peabody College. *Associate Professor of Education.*

Fred E. Westbrook, B.S., M.S., Tenn. A. and I. State College; Ph.D., Michigan State College. *Professor and Head of the Department of Plant Science.*

Vesta R. Wheaton, B.S., M.A., Tenn. A. and I. State University. *Instructor in English.*

Katie K. White, B.S., M.S., Tennessee A. and I. State University. *Assistant Professor of Science Education.*

Samuel R. Whitmon, B.S., M.S., Tennessee A. and I. State University. *Football Coach, Grade II, and Associate Professor of Biology.*

**Emory W. Williams, B.S., North Carolina College; Ed.M., Temple University. *Assistant Professor of Psychology.*

Jamye C. Williams, B.A., Wilberforce University; M.A., Fisk University; Ph.D., Ohio State University. *Professor of Speech.*

**Kenny Jackson Williams, A.B., Benedict College; M.A., DePaul University; Ph.D., University of Pennsylvania. *Professor of English.*

Malcolm D. Williams, B.S., Hampton Institute; M.A., Ed.D., Columbia University. *Professor of Education and Dean of the School of Education.*

McDonald Williams, A.B., Litt.M., University of Pittsburgh; Ph.D., Ohio State University. *Professor of English.*

Peggy M. Williams, B.S., Tenn. A. and I. State College; M.A., New York University. *Assistant Professor of Health and Physical Education.*

Rosa L. Williams, B.A., Virginia State College; M.A., Teachers College, Columbia University. *Assistant Professor of English.*

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; Ph.D., Indiana University. *Professor and Head of the Department of Biological Sciences.*

**On leave.

Theodore R. Wood, B.S., Tenn. A. and I. State College; M.S., Michigan State College. *Assistant Professor and Animal Science.*

Rudolph Woodberry, B.S., M.S., Tennessee A. and I. State University. *Instructor in Chemistry.*

Roberta Peddy Wright, B.S., Winston-Salem Teachers College; M.A., University of Michigan. *Associate Professor of Education.*

Charles A. Young, Jr., B.S., Hampton Institute; M.A., New York University. *Assistant Professor of Art.*

EXTENSION

Christine Alexander, B.S., Tenn. A. and I. State College; M.S., Columbia University. *Associate Professor of Extension, Home Economics.*

Arthur B. Davis, B.S., M.S., Tenn. A. and I. State University. *Instructor, Extension.*

Henry C. Hardy, B.S., M.S., Tenn. A. and I. State University. *Associate Professor of Extension, Plant Science.*

Neal McAlpin, B.S., Tenn. A. and I. State College; M.S., University of Wisconsin. *Associate Professor of Extension, Plant Science.*

Willie E. Officer, B.S., M.S., Tenn. A. and I. State College. *Assistant Professor of Extension, Animal Husbandry.*

Marylouise E. Ritter, B.S., M.S., Tenn. A. and I. State College. *Assistant Professor of Extension, Home Economics.*

Homer R. Wheaton, B.S., M.S., Tenn. A. and I. State University. *Assistant Professor of Extension, Animal Husbandry.*

Eddie Williams, B.S., M.S., Tenn. A. and I. State College. *Associate Professor of Extension, Animal Husbandry.*

TECHNICIANS

Samuel Abernathy, B.S., M.S., Tennessee A. and I. State University. *Technican in Health and Physical Education.*

Bernadette Bennett, B.S., Southern University. *Technician in Biology.*

William T. Briggs, B.S., M.S., Tennessee A. and I. State University. *Technician in Biology.*

Thomas J. Brooks, B.S., M.S., Tennessee A. and I. State University. *Technician in Engineering.*

Helen F. Coleman, B.S., Alcorn A. and M. College. *Technician in Education.*

Mildred Collins, B.S., M.S., Tennessee A. and I. State University. *Technician in Home Economics.*

Robert Derden, B.S., Alcorn College, M.S., Tennessee A. and I. State University. *Technician in Agricultural Education.*

James Hose, B.S., LeMoyne College; M.S., Tennessee A. and I. State University. *Technician in Chemistry.*

Reuben Keesee, B.S., M.S., Tennessee A. and I. State University. *Technician in Agricultural Education.*

Gwendolyn Lewis, B.S., M.S., Tennessee A. and I. State University. *Technician in Psychology (Testing Bureau).*

Pazetta V. Mallette, B.S., Wiley College. *Technician in Mathematics.*

Maxine O. Merritt, B.S., Jackson State College. *Technician in Physical Education.*

Blanche Stevens, B.S., Tennessee A. and I. State University. *Technician in Physical Education.*

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 education 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 was elevated to a full fledged Land-Grant University by the State Board of Education in August 1958. The Land-Grant University program as approved by the State Board of Education, August, 1958, includes: A School of Agriculture and Home Economics, School of Engineering, School of Arts and Sciences, School of Education, Graduate School, Division of Business, Division of Field Services, and Department of Air Science.

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

PURPOSE OF THE UNIVERSITY

The general purpose of Tennessee Agricultural and Industrial State University is to make maximum contribution to the advancement of the total civilization of the state, nation, and world by so training man that he can gain a reasonable mastery of human and natural resources.

The University aims to meet the needs and wants of the student by giving him a complete knowledge and understanding of natural and human resources and of the value of developing and utilizing these resources to the end that Tennessee may take its rightful place in the vanguard of the states of the nation.

The University aims to offer each faculty member the best possible opportunity for highest service, maximum professional growth, and advancement.

The University aims to make a maximum contribution to the development of society with respect to the following aspects of our democratic life; religious attitudes, economic efficiency, social understanding, civic responsibility, wholesome family relations, aesthetic appreciations, health habits, and the conservation and utilization of natural and human resources.

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 450 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

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, and a swimming pool.

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, erected in 1927, 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, physics, and mathematics.

The Jim Nance McCord Building, erected 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 and metal work, plumbing, welding, refrigeration, radio, electricity, business (education and administration), and science education. Several instructional staff offices and the office of the adviser to veteran students are also located in this building.

The Mechanical Engineering Building, erected 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 Jane E. Elliott Building is located west of the University library on the north campus. The building contains the cafeteria, laboratories, lecture rooms, work rooms and studios for the fine arts and crafts, home economics, nursery school, and the office of Public Relations and Center for Institutional Research.

The W. W. Lawson Agricultural Building, erected in 1956, is locted on the north side of the campus adjacent to the University agricultural laboratories. This building contains classrooms and laboratories equipped for teaching and research in scientific agriculture.

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

The Frank A. Young Poultry Plant, erected 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 experimental work in incubation, brooding, laying, nutrition, genetics, disease diagnosis and control, and poultry grading and marketing.

The Henry Arthur Kean Hall, erected in 1951 at the cost of $1,500,000, is located on the south side of the campus at Centennial Boulevard and 33rd Avenue. This modern structure contains a gymnasium with a seating capacity of 4,500; health and physical education classrooms and laboratories; staff offices; and facilities for indoor intramural sports, staff and student recreation, and physical therapy.

The William J. Hale Field House and Stadium are located on the northeast campus at Centennial Boulevard and 33rd Avenue. The Field House is a modern stone structure which contains accommodations for visiting athletes and offices and classrooms for the Air Force ROTC unit. The Stadium is equipped for night games and has a seating capacity of 6,000. The turf provides for several kinds of athletic events including football, baseball, and major and minor track sports.

The Student Health Service Building, located west of the women students' dormitories, has facilities for complete examination and limited treatment for students. It contains two wards for the accommodiation of six women and six men students respectively.

Hale Hall, located west of the University library, is a modern three-story fire proof residence hall for women students.

Wilson Hall, located north of Hale Hall, accommodates women students.

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

Edna Rose Hankal Hall, erected in 1957, is located on the north side of the campus. It is a modern three-story residence hall for women students. The building is equipped with modern conveniences for comfortable and wholesome living.

Clement Hall, erected in 1957, is located on the southeast side of the campus. This residence hall is a three-story building providing conveniences for modern living.

Veterans' Hall consists of two units of temporary buildings for the housing of men.

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 accommodations 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 Education Building, erected in 1958, is located on the south side of the campus at Centennial Boulevard and 35th Avenue. It is a modern three-story air conditioned building equipped with classroom and special laboratories; Business Education, Health and Physical Education and Music Education in Education; Industrial Arts Education in Engineering; and Agricultural Education and Home Economics Education in Agriculture and Home Economics.

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

The Student Union, erected in 1959, is a modern three story, air-conditioned brick and glass structure. The Union contains administrative offices of Student Personnel Services, offices of the Student Council and of other student organizations. Included in the facilities of the Union are lounges, meeting rooms, a game room, a grill and fountain, the University bookstore and Post Office.

The Music Hall, established in 1960, is located on the north campus. The Music Hall contains modern facilities designed to provide instruction in music education. The building contains practice studios for piano and instrumentation, classrooms, and offices.

The Chemistry Building, completed in Spring of 1961, is a modern two and one-half story air-conditioned building. The building contains undergraduate and research laboratories, classrooms, a lecture hall, offices, balance rooms, a departmental library, and a machine shop.

The Lena B. Watson Residence Center for Men, erected in 1964, is located on the southwest part of the campus. It is a modern six-story building, air-conditioned and fireproof. The building houses freshmen.

The New Women's Residence, erected in 1964, is located on the north side of the campus. It is a modern six-story building, air-conditioned and fireproof. The building houses freshmen and contains a well-appointed cafeteria.

STUDENT PERSONNEL SERVICES

The Student Personnel Services program aims to assist the student in developing the skills, attitudes, understandings, and insights which will assure full expression of his powers as a whole, dynamic person. Emphasis is on university relationships and experiences complementing formal instruction.

Reaching the interests, needs, and purposes of all students for superior educational, social, vocational, and cultural growth involves the coordinate planning of numerous university officials, faculty and staff members; among

them are the Dean of Students, the Dean of Men, the Dean of Women, the Dean of Admissions, the Director of Student Health Service, the Deans of Schools and Heads of Departments, the Director of the Placement Bureau, Director of Veterans Affairs, Director of Housing, Directors of Residence Halls, Director of Food Service, Director of Off-Campus Housing, supporting counselors such as major advisers, advisers to foreign students; directors of university agencies and organizations affecting the welfare of students; committees such as the Guidance Committee, the Freshman Week Committee, Social Committee, the Decorum Committee, the Faculty Advisory Committee; and consultant specialists in medicine, psychiatry, psychology, social work, community relations, and vocational choice and placement.

COUNSELING AND GUIDANCE

Upon being admitted to the University, each student is assigned by the Dean of Admissions on the basis of the student's choice of school to the Dean of that School, who refers the student to the head of the major department for guidance. The department head assigns every student majoring in the department to a teacher in the department known as the major adviser.

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 select. Similarly, it is the primary duty of the student to pursue courses in their proper order to meet the requirements for graduation. 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.

Major advisers counsel students not only in curricular or educational matters but give attention to varied personal and inter-personal problems of students—health, financial adjustment, social adjustment, vocational choice and proposed after-college adjustment to life.

Major advisers who counsel freshman students assist the students with innumerable matters such as adaptation to new ideas, how to study, health and emotional adjustment, budgeting time and money, extraclass activities, and residence hall and home relationships.

In solving specific problems, the Dean of Students assists students individually and in groups directly and by referral to responsible offices listed in the Student Personnel Services Directory and/or appropriate on-campus or off-campus sources of assistance.

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

UNIVERSITY COUNSELORS

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

During Freshman Orientation Week, freshman students are given the following tests: mental ability, reading, English, mathematics, and na 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.

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 treatments.

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 cause of failure.

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

THE COMMUNICATIONS CLINIC

The Communications Clinic is a University center at which work in reading, writing, speaking and listening is integrated for the purpose of helping students to improve in their communication through language. The Clinic was established to supplement class work by providing for more specialized attention to individual problems of communication skills.

The Clinic is open to all students of the University. In addition to clinical experience for students who may be deficient in communication skill, much of the work of the Clinic is devoted to students who need additional training in language skills to assure maximum benefit from university experiences. A part of the writing program is designed for seniors and graduate students who require special counsel concerning research reports.

Students may remain in the Clinic as long as they show a need for improvement, and respond favorably to corrective procedures.

THE HONORS PROGRAM

Beginning with the 1964-1965 academic year the University offered a program for its freshmen with expectional abilities. The purposes of the program are:

1. To stimulate students of exceptional abilities and enable them to perform in keeping with their potentials.
2. To give proper guidance to students with exceptional abilities.
3. To develop an academic climate that will stimulate all students at the University to perform to their intellectual capacity.

Freshmen ranking in the 90th percentile on the Placement Test will be invited to enroll in a maximum of two honors courses. Honors courses will be offered in the following subjects: Biology, Chemistry, English, History, Mathematics, and Sociology.

Participants in honors courses will attend a weekly colloquium.

Sophomore–level honors courses will be offered beginning with the 1965-66 academic year. Honors courses will be offered in the following areas: Humanities (Art, Music and Philosophy) Education and Psychology; World Literature; American History; Physics.

Departmental honors courses for majors will be offered as a part of the upper division program. These courses will be offered beginning with the 1966-67 academic year.

THE STUDENT HANDBOOK

The student handbook is a means of facilitating communication among the members of the University. It serves as a source of necessary and useful information which will help the student understand his privileges, rights, and responsibilities pertaining to student affairs. The handbook contributes to the high level of cooperative and constructive relationships between students and the various departments of the University.

LIVING ACCOMMODATIONS

On-Campus

All residence halls provide opportunities for personal, social, and intellectual companionships and experiences in group living.

Housing facilities for women are provided in the new Women's Residence Center, Hale Hall, Wilson Hall, and Edna R. Hankal Hall; and for men in the new Lena B. Watson Men's Residence Center, Clement Hall, Veterans Halls, and East Hall.

Rooms are furnished with twin beds or double decker beds, dressers, study 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, bedspreads, blankets, two pairs of curtains, towels, dresser and table covers, and any other accessories which will make his room more comfortable and attractive.

Off-Campus

There is a limited number of University-approved homes in the city where students may live. All off-campus housing is to be approved by the University.

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

CAFETERIA

The University Cafeteria serves three meals daily, Monday through Friday, and two meals daily 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.

Those individuals taking meals in the University Cafeteria will be expected to take their meals during the regular meal hours.

Schedule of meal hours will be posted on residence hall bulletin boards.

STUDENT HEALTH SERVICE

The University maintains a Health Service for students. This service includes a physical examination of all entering students, a follow-up of examinations, and regularly scheduled medical and dental clinics. The Student Health Center offers twenty-four hour service with facilities for hospitalization of students confined by illness. These services are provided by a staff of physicians and registered nurses.

RECREATION

Recreation facilities include a Student Union, indoor and outdoor swimming pools, and athletic field equipped for night activities, a gymnasium, a bridle path, Tennessee walking horses and American saddle horses.

In addition to the above, Kean Hall provides the following facilities: archery range, six badminton courts, basketball courts, boxing and wrestling room, bowling alleys, dancing studio, deck tennis, gymnasium, indoor play fields, inside handball court, recreation rooms, three shuffleboard, five volleyball courts, and a tennis court.

STUDENT ORGANIZATIONS AND ACTIVITIES

A well balanced program of activities is available to students at the University. Cultural, social and recreational activities are sponsored, particularly by the Lyceum, Social and Athletic Committees, the Student Councils, Department of Speech and Drama, and Department of Art and Music Education. Outstanding concert artists, speakers, orchestras, and dramatic productions are brought to the campus.

Intelligent and active participation in a reasonable number of extra-class activities provides opportunity for leadership, cooperation, and fellowship as well as the development of desirable skills, attitudes, appreciation and modes of behavior.

Student Government

The Student Council, the key student organization, shares with the administration in planning and regulating student affairs. It appoints student representatives to University committees, stimulates student participation in campus life and recommends student organizations to the administration for official recognition.

Student Publications

THE METER, a monthly publication of the student body, endeavors to keep students informed of the activities of the University and provides opportunity for the expression of student ideas and opinions.

THE TENNESSEAN is the University yearbook.

Athletic Organizations

Varsity and intramural athletics are promoted. (See Department of Health and Physical Education.) The "T" Club is composed of men and women students who have won the University Letter in a major sport. The Women's Athletic Association is open to all women students of the University who meet the requirements of the association.

Class Organizations

University classes (Sophomore, Junior, and Senior) organize in the spring quarter. The incoming Freshman class is organized in the fall quarter. At the meetings throughout the year, plans are made for social and other class programs. In the fall quarters, students in the Graduate School organize the Graduate Club.

Departmental Organizations

Departmental organizations at the University include:

AFROTC Drill Team ("Tiger Jets"). For outstanding cadets who possess desirable leadership potential.
AFROTC Society. A social organization open to all enrolled cadets.
American Chemical Society, Student Affiliate Chapter. For majors in Chemistry.
American Society of Agronomy. For majors in Agriculture.
Arnold Air Society. A national AFROTC organization for outstanding cadets enrolled in the AFROTC Course.
Association for Childhood Education International. For Elementary Education majors.
Biology Club. For Biology majors.
Future Business Leaders of America. For Business Administration majors.
Future Teachers of America. For Education majors.
Hepermots. For Health, Physical Education and Recreation majors.
Home Economics Clnub. For Home Economics majors.
Industrial Arts Club. For Industrial Education majors.
Institute of Radio Engineers. For junior and senior Electrical Engineering majors. Also open to junior and senior Mathematics or Physics majors.

Les Amis de la France. For students of French.
Los Buenos Vecinos. For students of Spanish.
Mathematics and Physics Club. For majors and minors in Mathematics and Physics.
Music Educators' National Conference, Chapter 381. National organization for majors in Music.
National Technical Society. For Engineering majors.
New Farmers of America. For Agriculture majors.
Psychology Club. For Psychology majors.
Science Education Club. For majors in science education and other prospective elementary and secondary science teachers.
Social Science Club. For Political Science, Sociology, and Social Administration majors.
Student Affiliate Chapter of American Chemical Society. For Chemistry majors.
Thucydidean Society. For History majors.
Town Hall. For all students. An organization dedicated to the discussion of current public issues.
TSU Aero Tigers. For Aviation Education majors.
Women's Intramural Board.
Women's Athletic Association.

Departmental Publications

The departmental student publications include:
The Bio-Log, published monthly by the Biology Club.
The Test Tube, published monthly by the Student Affiliate Chapter—American Chemical Society.
Weekly Bulletin, published by the AFROTC.
The Rocket, published by the AFROTC.
The Derivative, published by the Physics and Mathematics Club.

Fraternities and Sororities

The following national social Greek letter fraternities have chapters at the university: Alpha Phi Alpha, Kappa Alpha Psi, Omega Psi Phi, Phi Beta Sigma. Their respective pledge clubs are the Sphinx Club, Scrollers Club, Lampados Club, and Crescent Club.

The following national Greek letter sororities have chapters at the University: Alpha Kappa Alpha, Delta Sigma Theta, Sigma Gamma Rho, Zeta Phi Beta. Their respective pledge clubs are the Ivy Leaf Club, Pyramid Club, Aurora Club, and Archonian Club.

Pan-Hellenic Council

The Pan-Hellenic 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 organization to maintain high standards of intellectual and social achievement; to formulate and recommend actions of the Council; and to administer, under the jurisdiction of the Student Council, such regulations as are deemed necessary for the common interest of all fraternities and sororities.

The Independent Society

Students who are not members of a sorority, nor of a fraternity nor a pledge club, are eligible for membership in this organization.

Religious Organizations and Activities

The University is a public supported institution and teaches no creed in its classrooms. However, several religious organizations and activities are on the campus for the purpose of helping students recognize the resources of

religion and practice a desirable philosophy of life. The religious organizations and activities of the University include the Student Christian Association, Baptist Student Union, Canterbury Club, Clericus, Newman Club, The Baha'i Club, Methodist Student Movement, Inter-Faith Council, Sunday School, Quiet Hour, Sunday Morning Worship Service, Westminster Fellowship, and Religious Emphasis Week.

Residence Hall Organizations

The students in each residence hall are organized in a Residence Hall Council. These organizations regulate, as far as possible, all matters pertaining to problems and privileges of the residents.

Speech and Dramatic Organizations

The Speech and Dramatic organizations of the University include:

Children's Theatre. Open to campus and community children.
Literary Giuld. Open to all students.
Laboratory Players. Open to all students, under direction of Speech and Drama majors.
TSU Players' Guild. Open to all students.
Youth Theatre. Open to campus and community youth.

Musical Organizations

Musical organizations at the University include:

Concert Singers. For Music majors.
University Choir. Open to all students.
String Club. Open to all students and faculty members.
University Marching and Concert Bands. Open to students of Music.
Men's Glee Club. Open to all male students.

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 freshman students are advised not to seek employment on the campus or in the city.

Students who desire part-time work may apply at the Office of Student Work-Aid.

Students who are interested in obtaining part-time employment in the city may make inquiries at the University Placement Bureau.

The University may deny a student the privilege of working if such employment jeopardizes the welfare of the student or the University in any manner.

NATIONAL HONOR SOCIETIES

The National Honor Societies of the University include:

Alpha Kappa Mu Honor Society, Phi Beta Tau Chapter. An organization open to students of Junior Class standing or above with a cumulative average of 3.3 or above.

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

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

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

Phi Mu Alpha Sinfonia, Eta Xi Chapter. Music fraternity open to outstanding students in the Department of Music.

Pi Omega Pi Fraternity, Beta Psi Chapter. An organization for outstanding students interested in teaching business subjects.

Sigma Delta Pi, Gamma Eta Chapter. An organization for outstanding students in Spanish.

Sigma Rho Sigma, Gamma Chapter. An organization for future social science teachers.

Theta Alpha Phi, Epsilon Chapter. An organization for outstanding students in drama.

Pi Delta Phi, Beta Omicron Chapter. An organization for outstanding students in French.

HONORS, SCHOLARSHIPS AND AWARDS

Air Force Awards are presented annually to distinguished cadets.

Alumni Scholarship Awards and Gifts are made annually by various chapters over the United States and reunion classes.

Athletic Awards are presented annually to those active in intercollegiate sports and to those sponsoring athletic events.

Departmental Awards and Departmental Club Awards are presented annually by Business Education, Home Economics, Industrial Education, History Study Club, Literary Guild, Mathematics Club, Music Department, Student Affiliate Chapter of the American Chemical Society, and the Tennessee State Players' Guild.

Fraternity and Sorority Scholarship and Achievement Awards are made annually by Alpha Kappa Alpha Sorority, Alpha Phi Alpha Fraternity, Delta Sigma Theta Sorority, Omega Psi Phi Fraternity, Phi Beta Sigma Fraternity, Sigma Gamma Rho Sorority, and Zeta Phi Beta Sorority.

The W. J. Hale Scholarship Foundation, Incorporated Award, presented to the outstanding graduate of the University who prepares for a teaching career at Tennessee State.

Honor Roll. Students who earn a quality point average of 3.25 (B plus) 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.

Masonic Scholarships. The Most Worshipful Prince Hall Grand Lodge of Free and Accepted Masons of Tennessee and its jurisdictions give five annual scholarships to the students of the University under the following categories: (1) the highest ranking freshman students, (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 Tennessee Prince Hall Masons.

The National Honor Societies present awards annually to members elected during the year: Alpha Kappa Mu, Beta Kappa Chi, Gamma Theta Upsilon, Kappa Delta Pi, Pi Delta Phi, Sigma Delta Pi, Sigma Rho Sigma, Pi Omega Pi, and Theta Alpha Phi.

Special Awards and Trophies presented annually include the G. S. Hamilton Award, the Hamilton High School Award, the Laura M. Averitte Award, the Susie O. Bryant Trophy, and the United Business Education Association Smead Award.

Student Council members are presented awards annually.

University Counselors who are graduating seniors and who have served at least two years as University Counselors assisting with the Freshman Orientation Program and the general University Guidance Program receive awards.

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

NATIONAL DEFENSE STUDENT LOAN

Tennessee A. & I. State University is a participating member of the National Defense Student Loan program. High school seniors who have been accepted for admission to the University and currently enrolled students are eligible to apply for one of these loans.

PLACEMENT BUREAU

The Placement Bureau assists special students, seniors, and alumni in securing positions for which they are qualified, offers follow-up and counseling services and arranges interviews between prospective employees and employers. Students are also assisted in obtaining part-time employment.

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

Graduating seniors and graduate students are required to register with the Placement Bureau which is located in Room 220, Student Union Building. The services of the Placement Bureau are free to employers, students, and alumni of the University.

ALUMNI AFFAIRS

The Office of Alumni Affairs is an organization designed to keep graduates and former students informed of the University's many programs, and operates to determine the impact that alumni are making upon the national and international communities. Toward the realization of these goals the Alumni Office coordinates much of its activities with other offices of the University whose functions bear on alumni contacts. Among these are the Placement Bureau, the Bureau of Public Relations and the Center for Institutional Research. The Alumni Office maintains contact with more than ten thousand alumni through the program of the National Alumni Association and the established channels of the University.

BUREAU OF PUBLIC RELATIONS

The general purpose of the program of Public Relations at Tennessee State University is to provide an organizational entity which will serve as the chief extension of the University into public contacts that are significant to the fulfillment of its mission in higher education.

Making use of all forms of communication media, including local and national press, radio, television, educational and scientific journals, the Bureau seeks to effect creative expression and accurate interpretation of the University, its policies and activities to its many publics.

CENTER FOR INSTITUTIONAL RESEARCH

In collaboration with the deans, department heads, faculties, and heads of other program areas at the University, the general purpose of Institutional Research at Tennessee A. and I. State University is to maintain systematic inquiry into problem areas of higher education for the express purpose of providing informed assistance to the University Administration concerning trends and developments that have special relevance for the continued growth of the University.

In accomplishing its mission, the Center maintains a current collection of treatises, analyses, research reports, and other significant treatments of problems in higher education; maintains contact with appropriate offices of other land-grant colleges and universities; and encourages programs of independent study designed to enhance the academic tone of the University community through experimental student-faculty study groups.

TRAFFIC AND PARKING REGULATIONS

Any student operating a motor vehicle on the campus is required to register this vehicle each school year with the Dean of Students' Office. The University motor vehicle registration sticker which is issued must be displayed on the lower right side of the windshield.

GENERAL INFORMATION AND FEES

Quarterly Fees

Tuition:	
Residents of Tennessee	$00.00
Non-Residents of Tennessee	55.00
Composite Fee	
Undergraduate	55.00
Graduate	65.00
Part-time students:	
Undergraduate, under 12 hours (each credit hr.)	5.00
Graduate, under 9 hours (each credit hr.)	6.00
Board (in cafeteria)	105.00

Monthly and Quarterly Fees

Prices per student

Building	*Three per room*		*Two per room**	
	Month	*Quarter*	*Month*	*Quarter*
New air-conditioned dormitories	$25.00	$75.00	$30.00	$90.00
Hankal and Clement Halls	20.00	60.00	25.00	75.00
All other dormitories	17.00	51.00	20.00	60.00

Fees for piano courses are $7.00 each quarter and Organ courses, $20.00 each quarter. These fees are stated in the course descriptions. Freshmen engineering students should add $24.50 for drawing instruments.

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 $55.00 per quarter.

Composite Fees: All undergraduate students are required to pay $55.00 per quarter for composite fees. Graduate students pay $65.00 per quarter for this fee.

Payment of Fees

All fees listed below are quoted on a quarterly (12 weeks) basis. Approximately $35.00 per quarter should be allowed for books and supplies. Books and supplies can be purchased at the University Bookstore located in the Student Union.

* Permission will be granted for two persons to occupy a room only if vacancies make it convenient to place two persons in a room.

CAMPUS STUDENTS FOR QUARTER

	Tennessee Students			Out of State Students		
	New Dorms.	Clement/Hankal	Others	New Dorms.	Clement/Hankal	Others
Tuition	None	None	None	$ 55.00	$ 55.00	$ 55.00
Composite Fee	55.00	55.00	55.00	55.00	55.00	55.00
Board	105.00	105.00	105.00	105.00	105.00	105.00
Room Rent	75.00	60.00	51.00	75.00	60.00	51.00
TOTAL	$235.00	$220.00	$211.00	$290.00	$275.00	$266.00
Campus Students Making Minimum Payment						
Tuition	None	None	None	$ 55.00	$ 55.00	$ 55.00
Composite Fee	55.00	55.00	55.00	55.00	55.00	55.00
Board	35.00	35.00	35.00	35.00	35.00	35.00
Room Rent	75.00	60.00	51.00	75.00	60.00	51.00
TOTAL	$165.00	$150.00	$141.00	$220.00	$205.00	$196.00

Off-Campus Students for Quarter

	Tennessee Students	Out of Town Students
Tuition	None	55.00
Composite Fee	55.00	55.00
TOTAL	$55.00	$110.00

Off-campus students may purchase meal tickets at the Dining Hall for $35.00 per month.

Sending of Money

The University advises against the sending of cash money through the mail. In case the money is misplaced through the mails the University assumes no responsibility for the loss. All letters containing payments to the University should be addressed to the Office of the Business Manager, Tennessee A. and I. State University.

PERSONAL CHECKS ARE NOT ACCEPTED IN THE PAYMENT OF REGULAR FEES, ROOM RESERVATION FEES, AND TRANSCRIPT FEES. If the check is certified then it becomes acceptable along with other certified remittances (American Express, United States Postal Money Order, Cashiers' Check, Bank Money Order and Travelers Cheque).

Special Fees

Transcript Fees: A student may secure an official transcript of his record by the payment of a fee of $1.00. The first transcript issued and all other requests require the transcript fee of $1.00 as prescribed by the University. No transcript will be issued for a student whose university account is delinquent. All in-state and out-of-state forms for certification to be filled in by the Office of Admissions & Records require the usual transcript fee of $1.00.

Graduation Fees: A diploma fee of $15.00 shall be paid before one is eligible to receive a degree from the University.

Music Fees: Piano or Voice, one lesson weekly, $7.00 per quarter; two lessons weekly, $14.00 per quarter. Organ, one lesson weekly, $20.00 per quarter.

Class Audit Fees: A student who is not regularly enrolled may audit courses upon the payment of a fee of $5.00 per quarter for each course audited.

Late Registration: Students who register after the last regular registration day in any registration period are late. A late registration fee ($5.00) will be assessed beginning the third day after the close of regular registration.

Class Absences before and after Holidays: A penalty of $5.00 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.

Conference 600: A fee of $15.00 is charged for enrolling in Conference 600, a non-credit activity which permits a student to use university facilities after he has been enrolled in Thesis Writing or Project Writing in a previous quarter. This fee is prorated at $7.50 for each six week's term during the summer quarter.

Master's Thesis Binding Fee: A fee of $14.00 is charged for binding master theses.

ROOM RESERVATIONS

A $10.00 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 applicant has been officially notified of his acceptance by the Office of Admissions & Records, indicating that a room has been reserved.

ADMISSION

Procedures

All communications regarding admission, credit hours, transfers of credits and advance standing should be addressed to the Dean 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 Dean of Admissions. The application form and other directions will be sent from the Office of Admissions & Records 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 & Records before registration is completed. All applicants must receive official notice from the Office of Admissions & Records that they have been approved for admission before presenting themselves for registration.

The final dates for receipt of application, transcripts and medical certificate forms for admission to the University are as follows:

Fall Quarter .....September 1, 1965
Winter Quarter .....November 23, 1965
Spring Quarter .....February 21, 1966

General Requirements

1. The applicant must be at least 16 years of age.
2. The applicant must furnish satisfactory evidence of good moral character, health and personality.
3. The applicant must file an official application form with the Office of Admissions & Records.
4. The official transcript of all high school credits must be filed in the Office of Admissions & Records 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.
5. 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.
6. A college student whose education has been interrupted for more than ninety days (one regular quarter) must present a notarized statement as to whether or not he has attended another college or university during this time.
7. All required data must be filed in the Office of Admissions & Records for consideration for admission.

8. All students, except those who seek admission with advanced standing, must take the *American College Tests* and a health examination prior to admission, and the special tests required by the department in which the major is pursued. The ACT tests are given in the months of November, February, April, June and August. It is recommended that prospective applicants write the test in November of their senior year. For information on location of test centers and dates for tests write: ACT Central Registration Unit, 519 West Sheridan Road, McHenry, Illinois, or to the Director of Testing at the University.
9. All new students must attend the orientation period at the University one week prior to official registration unless given special permission by the Dean of Admissions.

METHODS OF ADMISSION—UNDERGRADUATE

Applicants who meet the requirements listed above are eligible for admission by the following methods:

Applicants must present a transcript of credits showing graduation from an approved high school. Students must present one unit in American History or they will be required to enroll for the course prior to college graduation. This requirement is waived for students coming from foreign countries. High school credits and/or graduation from correspondence schools are not acceptable at this University.

Accepted by High School Equivalency Examination

Veterans of the armed services who entered service before high school graduation, and civilians 21 years of age or older, who may have discontinued high school before graduation may be admitted to college by taking the G. E. D. High School Equivalency Examination, and earning a score that qualifies the student for a high school diploma in the State of Tennessee. The average score of 50 for civilians or an average score of 45 for veterans with no score on a single test less than 35 is required.

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 & Records, 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 afforded at Tennessee A. and 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 cleared of all financial obligations and granted honorable dismissal from the last institution attended.
5. Students who have attended other colleges or universities will be admitted to Tennessee Agricultural and Industrial State University provided they have a cumulative average which is equivalent to or above the minimum average required of students at the same level in attendance at Tennessee Agricultural and Industrial State University. A student who has attended this University and transfers to another accredited college or university will be considered for re-admission on the basis of the scholastic average earned at both institutions.
6. Students who have attended other colleges or universities cannot be admitted as freshmen solely on the basis of their preparatory school records.
7. A student who fails to present credits from all colleges which he has attended prior to registration must forfeit the right to later claims of such credits after admission.
8. Students who present transfer credits from several colleges or universities will be considered for admission on the basis of the scholastic work done at all institutions attended.

Admission with Advanced Standing from Non-Accredited Colleges

Students who desire to enter Tennessee A. and I. State University from non-accredited colleges are to register under the following stipulations:

A. Admitted on probation for the first 48 hours credit.
B. Credit for work done prior to entering Tennessee A. and I. State University be granted as:
   1. Full credit if work at Tennessee A. and I. State University is 3.00 or above.
   2. Three-fourths credit if work at Tennessee A. and I. State University below 3.00 but not less than 2.50.
   3. Half credit if work at Tennessee A. and I. State University is below 2.50 but not less than 2.00.
   4. No credit if work at Tennessee A. and I. State University is below 2.00.

Admission with Special Adult Student Standing

Young men and women who are twenty-one years of age and over, and who have not completed four years of high school work may be admitted as special students and permitted to take courses for which they are prepared provided that such special students must satisfy all entrance requirements to qualify for a diploma or a degree. Such students may want to qualify for a high school equivalency diploma.

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 & Records 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 Scholarship Standards page 36) must in addition to making application for readmission, satisfy the Dean of Admissions 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.

GRADUATE ADMISSION

Requirements for admission to the Graduate School at the University are outlined on page 49.

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 beginning freshmen 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

Students who register after the last regular registration day in any registration period are late. A late registration fee ($5.00) will be assessed beginning the third day after the close of regular registration.

Resident Address and Name

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

Physical Examination

All entering freshmen and new students are required either to present a Health Certificate or to take a physical examination under the supervision of the University and student health service staff. Appointment for the examination must be made at registration.

Completion of Registration

Registration is complete when:

1. All forms have been filled out and the two schedule cards, permit, and envelope have been stamped by the preliminary checker.
2. All fees have been paid and assessment card, two schedule cards, and the permit have been stamped by the Business Manager and returned to the student.
3. A photograph has been taken as a part of registration.
4. The physical examination has been completed.

CLASS LOADS

Normal and Minimum Class Loads: The normal class load for each quarter is one-twelfth (1/12) of the total number of quarter hours required for graduation in any particular curriculum and the minimum class load is 12.0 quarter hours. One quarter hour of required physical education or one quarter hour of choir, but not both, may be added to the normal load.

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

A minimum of twelve (12) quarter hours per quarter is allowed for a regularly enrolled student. A student may pursue less than twelve (12) quarter hours per quarter only by special approval of the Dean of Admissions.

The appropriate form for requesting a reduced load may be secured from the Office of Admissions and Records. The form is executed and the student secures the signatures of the Department Head, the Dean of the School, and the Dean of Students. If the form is approved by the Dean of Admissions, he must also approve the two schedule cards as a part of the student's registration.

Repeating Courses: A student earning a grade of "F" in a given course may not repeat the course more than two times to secure a passing grade. Any grade earned after the third time in a course will be invalid.

Probationary Student Class Loads: A student who incurs scholarship probation in any quarter (see scholarship standards, page 39) will be allowed to carry a maximum of 14 or a minimum of 12 quarter hours.

Adding Courses: A student may add courses within five calendar days after the first scheduled meeting of the class. To add a course, the student must secure a course card and obtain the signature of approval from the teacher of the course involved and the major adviser. This approval must be executed on the official add form which may be obtained from the Office of Admissions and Records.

Dropping Courses: A student is permitted with proper execution of the form to drop a twelve week's course within the first week of the course.

The student is permitted with proper execution of the drop form to drop a six weeks' course within the first week of the 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 Records 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 Dean of Admissions. All records of the student must be transferred from the former to the new adviser.

The Change of Major Form must be filed in the Office of Admissions and Records within the first week of the current quarter, if the change is to be effective the following quarter.

CLASS ADMISSION AND ATTENDANCE

Admission

A student must attend class beginning with the first class meeting; however, he is not officially enrolled until he presents the teacher a schedule card stamped "Registration Completed—office of Adm. & Records". This must be done by the *third* meeting of each scheduled class.

Class Auditors

Regularly enrolled students may enter classes as auditors with the approval of the major adviser and the teacher of the course. The regular registration procedure is followed in registering for a class to be audited. The faculty member issuing the card shall indicate "Audit—No Credit." A regularly enrolled student pays a fee of $1.00 for each course audited.

Persons other than regularly enrolled students may be permitted to audit classes only with the consent of the Dean of Admissions and with the approval of the teacher of the course. Such persons shall follow the regular registration procedure and pay $5.00 for each course to be audited.

Auditors are not under obligations of regular attendance, class preparation, recitation, or examination; nor do they receive credit. 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 and Records.

Class Attendance

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

Upon recommendation of the instructor and with the approval of the Dean of the School, a student may be dismissed from the course because of failure to attend class regularly and on time. A student who is dismissed from the course because of irregular attendance may be awarded a grade of "Failure".

ABSENCES

Student absences are counted from the first scheduled meeting of the class.

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 absences.

Any student knowing he must be absent from class during final examination will notify his instructor and the Office of the Dean of the School, who reports such cases to the Dean of the Faculty. 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 Dean of the School and the Dean of Students, who reports such cases to the Dean of the Faculty.

An official excuse: An official excuse is identified as absence granted by the University for which the University is responsible. All official excuses for absences from classes must be approved by the Dean of the Faculty.

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 assessed a penalty of $5.00 for one or more class absences incurred.

Tardiness and Leaving Classes

The student is expected to begin class on time and remain during the full class period. Tardiness in attending 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 period at the discretion of the teacher.

GRADING SYSTEM

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

"A" or "H" (Excellent)	4	quality points per quarter hour
"B" or "P" (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)	0	quality point per quarter hour
"I" (Incomplete)	0	quality point per quarter hour
"W" (Withdrawal)	0	quality point per quarter hour
"S" (Satisfactory in non-credit courses)	0	quality point per quarter hour
"U" (Unsatisfactory in non-credit courses)	0	quality point 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 "N.C." (no credit) if not removed within one calendar year.

"W" is recorded for the student who officially withdraws from the entire University.

"F" is given to a student who fails to do a passing quality of work.

"S" is given to a student who gives satisfactory performance in a non-credit course.

"U" is given to a student who gives unsatisfactory performance in a non-credit course.

"Dropped"—a student is listed as having "dropped" a course only if he has followed the established procedure and has cleared through the Office of the Registrar.

Deficiency Grades

Grades of Incomplete. "Incomplete" is a temporary grade which must be removed from the *undergraduate* 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 calendar year, the grade of "I" will be changed to "N.C." (no credit). The student is responsible for initiating all necessary steps to remove the deficiency grade:

1. Inquire in the Office of Admissions and Records regarding the course in which the grade of "I" has been awarded.
2. Pay to the Bursar's Office the fee of $1.00 (applicable only to undergraduate courses).
3. Secure from the Office of Admissions and Records the replacement grade card.
4. Take the replacement grade card to the teacher of the course in which the "I" was earned.
5. The replacement grade card must be filed in the Office of Admissions and Records in person by the teacher of the course after it has been properly filled in (name of student, grade awarded, credit hours which the course carries, title of the course, major adviser's signature, and instructor's signature).
6. The "I" removal card must be in the Office of Admissions and Records no later than the last day of the quarter in which the "I" grade expires (a 12 month period).

Repeat Grades. With the approval of the student's Major Department Head, the student may repeat courses in which he has earned "D's" or "F's." The *last* grade awarded in a course repeated will be counted in calculating the over-all scholastic (grade point) average.

SCHOLARSHIP STANDARDS AND PROBATION

Scholarship Standards

1. All undergraduate students of the University are expected to maintain twice the number of quality points as the number of credit hours received.
2. A minimum cumulative average of "C" (2.00) is required for graduation in all bachelor degree programs.
3. A minimum cumulative average of "B" (3.00) is required for graduation in the master degree programs.

Probation

A student who fails in 50% or more of the credit hours carried will be placed on probation or dismissed at the end of any quarter.

A student who is on probation cannot carry more than 14.0 quarter hours per quarter. Probation must be removed within the next two quarters in residence. A student who fails to remove the probation status during the next two quarters in residence will be suspended for an indefinite period.

A student is placed on academic probation at the end of the first quarter in which he fails to earn the required academic average for his grade or class level. When a student fails to meet the requirements set forth for probation students, he is to be suspended from the University. The first suspension is to be for a period of one quarter; the second suspension is for an indefinite period of at least one year and is to be terminated when, in the judgment of the Committee on Admissions, the student is able and willing to do acceptable class work. The implementation of this policy has been modified as stated below.

Students who have *not* previously been suspended for low scholarship will be placed on probation for the next quarter in residence when their cumulative averages are below the minimum for their classification. For the second successive quarter in which a student's cumulative average is below the minimum, the student's probation continues for another quarter. For the third successive quarter in which a student's cumulative average is below the minimum, the student will be suspended for one quarter.

For students who have previously been suspended for low scholarship, *dismissal for failure to remove probation will be done at the end of any quarter* instead of exclusively at the end of the sixth, ninth, and twelfth quarters as was formerly the case. A student who returns to the University from a suspension for low scholarship removes his probation by achieving the minimum cumulative average for his grade or class. Until he removes his probation he must maintain a per quarter average of at least "C" (2.00), and he must also follow the instructions for probationary students as regards class load and course selection. He will be suspended indefinitely at the end of the first quarter that he fails to do either of the above.

The following cumulative grade point averages are enforced.

Required Cumulative Grade Point Average

Quarter	*Cumulative Grade Point Average*
End of 1st	1.50
End of 2nd	1.50
End of 3rd	1.50

At the end of the first, second, or third quarters, a student whose average is less than 1.50 for the first time will be placed on probation.

Quarter	*Cumulative Grade Point Average*
End of 4th	1.80
End of 5th	1.80
End of 6th	1.80

At the end of the fourth, fifth, or sixth quarters, a student whose average is less than 1.80 for the first time will be placed on probation.

Quarter	Cumulative Grade Point Average
End of 7th	1.90
End of 8th	1.90
End of 9th	1.90

At the end of the seventh, eighth, or ninth quarters, a student whose average is less than 1.90 for the first time will be placed on probation.

Quarter	Cumulative Grade Point Average
End of 10th	2.00
End of 11th	2.00
End of 12th	2.00

At the end of the tenth, eleventh, or twelfth quarters, a student whose average is less than 2.00 for the first time will be placed on probation.

COURSE EXAMINATIONS

Regular Examinations

Examinations are required in all courses. Final examinations are held for a two-hour period at the end of each quarter, and at the end of each summer term.

Absence from Final Examination

Absence from the final examination will be indicated by a mark of (x). 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 received a grade of Incomplete in any subject must remove the incomplete grade three weeks prior to commencement.

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 presenting his assessment card at the Office of Admissions and Records.

Issuance of Transcripts

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 by paying the required fee of $1.00.

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.

CLASSIFICATION OF STUDENTS

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

Freshmen: Those who have completed less than 48 quarter hours.

Sophomores: Those who have completed 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 earned an average of "C" (2.00) in all work taken.

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

Engineering Majors

Sophomore ..... 58 quarter hours
Junior .....116 quarter hours
Senior .....172 quarter hours

Specials: (a) Those who meet entrance requirements and who wish to pursue particular studies but not to qualify for a bachelor's degree. Such students may be admitted with the permission of the Dean of Admissions and Records. (b) Those who are twenty-one years of age and who have not completed four years of high school work may enroll in such courses as they are prepared to take.

Unclassified: Those whose records are transferred from a non-accredited college.

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

Definition of a Quarter Hour

A quarter hour: One hour of recitation once a week for twelve weeks equals one quarter hour.

WITHDRAWAL FROM THE UNIVERSITY

To withdraw from the University, the student must make application on forms provided by the Office of the Dean of Students. The responsibility of filing for official withdrawal from the University rests with the student.

A student may withdraw from the University no later than ten calendar days prior to the beginning of final examinations in any quarter (or term).

UNIVERSITY REQUIREMENTS FOR A BACHELOR'S DEGREE

A bachelor's degree is conferred on a student who satisfactorily completes a curriculum in one of the departments. The candidate for a bachelor's degree must satisfactorily complete each of the general requirements of the University as listed below:

1. The minimum University requirement for graduation is 192 quarter hours with a minimum average of "C" (2.00).
2. A minimum of 66 quarter hours must be completed in 300 and 400 level courses.
3. The number of quarter hours per quarter should be 1/12 of the total number of hours required for graduation.
4. A minimum of 36 quarter hours must be offered for a major with a minimum of 15 quarter hours in courses on the 300 and 400 levels.
5. Six quarters of required activity courses in Physical Education.
   Note: These courses should be completed satisfactorily during the freshman and sophomore years. (This requirement is waived for veterans but no credit is awarded.)
6. Nine quarter hours of English.
7. Three quarter hours of Mathematics.
8. Nine quarter hours of American History for all students who do not present a year of American History on their high school transcripts.
9. Nine quarter hours of Social Studies.
10. Two years of basic Air Force ROTC (for male students).
11. Any departmental requirements.
12. A Sophomore English Examination.
13. A Senior Project.
14. All candidates for the bachelor's degree must spend the senior or its equivalent (the last forty-eight quarter hours offered for the degree and the last nine months), in residence at this University.
15. Transfer students must spend at least one academic year in residence at the University and earn while in residence not less than forty-eight quarter hours of credit with a minimum average of "C" (2.00).

The Sophomore English Examintaion

Candidates for the bachelor's degree are required to pass a test in the use of simple expository English. The test is administered during the fourth week of each regular quarter and the third week of the first summer term. Students must take the test in the last quarter of the sophomore year.

Those who fail the test shall be required by the University 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 literary or laboratory investigation, a collection or a compilation. The outcome of the propect 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.

Removal of Incomplete Grades

A graduating senior must remove all incomplete grades at least three weeks prior to commencement.

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 3.25. To be graduated with high distinction, the student's average must be not less than 3.50.

Application for Bachelor's Degree and Senior Status Forms

1. A candidate for a degree must file with the Office of Admissions and Records "Junior Entrance Forms" after the completion of 96 quarter hours. This must be approved by the candidate's major adviser, department head, Dean of the School, and the Dean of Admissions.
2. The candidate must file "application for Bachelor's Degree" eight months prior to the date of graduation.
3. Forms for an "Application for Diploma" may be obtained by request at the Departmental Office and must be filed in triplicate in the Office of the Business Manager after the signatures of the major adviser and Dean of the School are obtained.
4. The diploma fee (covering graduation materials and activities) must be paid and all accounts cleared at least two months prior to the date of graduation.
5. A clearance from the Placement Bureau and the Library must be filed with the Office of Admissions and Records one month prior to the date of graduation.

REQUIREMENTS FOR THE BACHELOR OF SCIENCE DEGREE IN TEACHER EDUCATION PROGRAM**

General Education Core (Both Elem. and Secondary) .....63 qr. hrs.*
Professional Education Core
(Both Elementary and Secondary) .....24 qr. hrs.
Subject Matter Concentration .....49-99 qr. hrs.*
Other Hours .....To total the quarter hour required by the University and departmental requirements.

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* Minimum quarter hours requirements.
** Home Economics Education, Agricultural Education, Business Education, and Music are exceptions. See requirements as listed in departmental programs.

REQUIREMENTS FOR THE BACHELOR OF SCIENCE DEGREE IN THE SCHOOLS OF EDUCATION AND ARTS AND SCIENCES

Liberal Arts Core .....57 qr. hrs.
Major Field Core .....36 qr. hrs.
Major Field Related Core .....Qr. Hrs. as required by the department
Effective Core .....Qr. Hrs. as required by the department

REQUIREMENTS FOR THE BACHELOR OF SCIENCE DEGREE IN THE SCHOOL OF ENGINEERING

Two Year Common Curriculum .....121 qr. hrs.
Engineering Major Curriculum ....Qr. Hrs. as required by the department

REQUIREMENTS FOR THE BACHELOR OF ARTS DEGREE

To qualify for the Bachelor of Arts degree, the student must (1) fulfill the general requirements for a bachelor's degree and (2) complete the following liberal arts courses:

English 101, 102, 103 ..... 9 qr. hrs.
World Literature 211, 212, 213 ..... 9 qr. hrs.
Foreign Language (9-27 hours) .....18 qr. hrs.
Social Science .....12 qr. hrs.
Natural Science .....12 qr. hrs.
Mathematics ..... 9 qr. hrs.
Philosophy, Music, Art, Drama ..... 6 qr. hrs.
(combination of any two courses)

and (3) complete a major program of studies in one of the following subjects: Biology, Chemistry, History, Mathematics, Sociology, Social Administration, Speech and Drama, English, Modern Foreign Languages, Physics, Political Science, Psychology.

Modern Foreign Language Requirement for The Bachelor of Arts Degree

The foreign language (French, German, or Spanish) requirement may be satisfied as follows:

a. Students who present no (0) units of a foreign language in high school when they enter the University are to take twenty-seven (27) quarter hours of work in a foreign language, beginning with the freshman course in that language.
b. Students who present two (2) units of a foreign language in high school and who desire to continue work in that same language may satisfy the language requirement by pursuing eighteen (18) quarter hours in that language, beginning with the sophomore course of that language.
c. Students who present four (4) units of a foreign language in high school and who desire to continue work in that language may satisfy the language requirement by pursuing nine (9) quarter hours in that language, beginning with the junior course.
d. When German is the language taken by the student, 18 quarter hours of German and nine quarter hours of another foreign language shall be required if 300-level courses in German are not offered.

Proficiency Test in French, German, Spanish

Students who enter the University for the first time and who present two or more high school units in a foreign language may take a proficiency test in that language. A student's proficiency in a given language may alter the number of quarter hours required to satisfy the language requirement.

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 Freshmen 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 Tennessee A. and I. State University. Therefore, persons who are interested in taking courses in Veterinary Medicine should write to President W. S. Davis, Tennessee A. and I. State University.

Medical and Dental Training

Under authority of Chapter 82, Public Acts of 1949, the State of Tennessee has entered into an agreement wtih 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 Tennessee 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.

INFORMATION FOR VETERANS

Eligibility for Training

The new G. I. Bill for veterans who have served in the Armed Forces since June 27, 1950 is known as Public Law No. 550.

To be eligible, a veteran must be out of active service and must meet the following requirements: (1) he must have been discharged under conditions other than dishonorable; (2) he must have had active military duty since June 27, 1950; (3) he must have had at least 90 days' total service, unless discharged sooner for an actual service-incurred disability.

Admission

All veterans who are entering the University as new students must file an application one month prior to date of registration.

In order to expedite time in receiving subsistence checks, veterans are advised to contact their local Veterans Administration at the earliest possible date after discharge to apply for educational benefits. If the veteran is eligible for training, he will receive a certificate of Eligibility, which he is advised to bring to the Office of Veterans' Affairs on the day of registration. Delay in submitting this certificate will cause a delay in receiving subsistence checks.

Final decisions on admission are made by the Dean of Admissions of the University. Veterans applying for college courses must have on file necessary scholastic records before applications may be approved. Approved applicants will be notified prior to date of registration.

Payment of Bills and Fees

Regular fees, including tuition, board and room, maintenance, and supplies are paid by veterans on the same basis as other students. These fees must be paid at the time of registration. War orphans who expect to receive subsistence checks as provided by the Government under Public Laws 634 and 674 must also pay all fees that are required of other students at the time of registration.

Class Load

A veteran must be registered for at least 14 quarter hours to be in full-time training and entitled to full education and training allowance.

A Public Law 550 veteran may be entered for a period longer than the normal school year and if he attends a summer session, a separate enrollment form must be submitted.

Change of Program

Public Law 550 does not permit more than one change of program in any case. If a course of training is discontinued for misconduct, neglect, or lack of application, the veteran may not be provided any additional educational benefits.

Class Attendance and Decorum

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

Veterans are required by the Veterans Administration to attend classes regularly. All absences must be reported to the Office of Veterans' Affairs, whether the absence is because of illness or for some other good reason. When a veteran is absent three days in any thirty-day period without notice to the Office of Veterans' Affairs, the office is required on the third day to notify the Veterans Administration.

All veterans interested in entering Tennessee A. and I. State University should address all inquiries to:

Office of Veterans' Affairs
101 Industrial Building
Tennessee A. and I. State University
Nashville 8, Tennessee

NOTES

GRADUATE SCHOOL

HUBERT B. CROUCH, Dean

CALVIN O. ATCHISON, Assistant

CO-ORDINATORS OF GRADUATE STUDIES AND RESEARCH

Hazo W. Carter ..... *Applied Sciences*
John M. Mallette ..... *Biological Sciences*
Nebraska Mays ..... *Education*
Alonzo T. Stephens ..... *History and Political Science*
Earl L. Sasser ..... *Humanities*
Sadie C. Gasaway ..... *Mathematics and Physical Sceinces*
Henry L. Taylor ..... *Vocational Education*

GRADUATE SCHOOL

HUBERT B. CROUCH, Ph.D., *Dean*
CALVIN O. ATCHISON, Ed.D., *Assistant*

Graduate work in all departments at the University is under the general supervision of the Graduate School. It is the purpose of this school (1) to provide a variety of studies beyond the limits required for the bachelor's degree; (2) to make available the resources of the University to meet the cultural and occupational needs of qualified students who may wish to earn the master's degree, or to engage in advanced studies for other purposes; (3) to create and maintain an intellectual climate for encouraging investigative and creative scholarship; and (4) to provide certain non-curricular services outside the Graduate School as may be delegated by the University or authorized by the State of Tennessee.

DEGREES AND FIELDS OF CONCENTRATION

The following degrees and fields of concentration are currently offered in the Graduate School:

Master of Arts: With major concentrations respectively in English, History, Romance Languages (French or Spanish), Speech and Drama, and Zoology.

Master of Arts in Education: With major concentrations respectively in Administration and Supervision, Business Education, Educational Guidance, Educational Psychology, Elementary Education, Health and Physical Education, Music Education, Science Education, and Secondary Education.

Master of Science: With major concentrations respectively in Animal Science (Agriculture), History, Plant Science (Agriculture), Psychology, Speech and Drama, and Zoology.

Minor concentrations are offered in Animal Science, Biochemistry, Chemistry, Foods and Nutrition, French, Health and Physical Education, History, Mathematics, Music, Physics, Plant Science, Social Sciences, Spanish, Speech and Drama, and Zoology. Limited numbers of courses for graduate credit are also offered in Economics and Industrial Education.

ADMISSION TO THE GRADUATE SCHOOL

Students who have completed the requirements for the bachelor's degree in a recognized four-year college, or who may be enrolled in the last quarter or semester of work for the bachelor's degree, may apply for admission to the Graduate School. Also, students who have been awarded the bachelor's degree, and who do not plan to earn another bachelor's degree at the University, must seek admission to the Graduate School in order to take course work at the University.

Unconditional Admission

Admission to the Graduate School to pursue courses for graduate credit in the first quarter of enrollment requires the following prerequisites:

1. The bachelor's degree from a fully accredited four-year college.
2. At least a 2.00 quality point average (grade of "C") on the four point system of grading.*
3. Acceptable scores on the Aptitude and Advanced Test of the Graduate Record Examination (Educational Testing Service, Princeton, New Jersey).
4. Completion of all undergraduate requirements for the selected graduate major and minor concentrations.
5. A scholarship record of good standing in the last institution attended where credits were earned in courses required in any master's degree program offered at this University.
6. Acceptable character, citizenship and health references.
7. Acceptance into the program selected for graduate study.

* Admission to teacher education programs also requires a "B" average or better in at least 30 undergraduate credit hours in education.

Conditional Admission

Conditional Admission to a degree program in the Graduate School may be granted applicants with certain admission deficiencies as follows:

1. Applicants may be admitted who have not met all prerequisite undergraduate course requirements. But this number may not exceed two full quarters of undergraduate work.
2. Applicants who have not taken the Graduate Record Examination prior to enrollment may be admitted to take undergraduate courses only until an acceptable score is attained on the Graduate Record Examination. Students may not be accepted in graduate Teacher Education courses until this requirement has been met. However, in certain other programs, under special conditions and with the approval of the departmental Chairman of Graduate Studies and the Graduate Dean, such students may be allowed up to 9 graduate credit hours before meeting the Graduate Record requirement.
3. Applicants from recognized colleges which award the bachelor's degree, but which may not have been fully accredited when the degree was awarded may be considered for conditional admission, provided that such applicants present at least a 2.50 quality point undergraduate average and an acceptable score on the Graduate Record Examination prior to first enrollment in the Graduate School. Such students shall become eligible for regular enrollment for the master's degree after completing a minimum of 15 credit hours with at least an average of 3.00.

Special Admission

Special Admission to the Graduate School may be granted applicants who do not wish to be enrolled in courses for graduate credit. Such work may not be counted at any time toward requirements for the master's degree.

Admission to Institutes and Other Special Programs

Applicants for admission to institutes and other special programs which offer graduate credit must also seek admission to the Graduate School at the same time, whether or not credits toward a degree are sought. Such applicants may become eligible to participate in these special programs only after notification of acceptance by the Director of the special program and notification of admission by the Graduate Dean. Application for admission to the Graduate School should be filed separately with the University Dean of Admissions on the regular form for Admission to the Graduate School.

Full-time enrollees in special programs may not also be concurrently enrolled in regular courses at the University or elsewhere.

APPLICATION FOR ADMISSION

A formal application is required of all students who plan to pursue studies in the Graduate School at the University. Application forms may be obtained from the Dean of Admissions or from the Dean of the Graduate School. The completed application form should be returned to the Dean of Admissions. Applicants who have attended other colleges or universities should request the Registrar of each institution attended to send transcripts of credit to the Dean of Admissions at least thirty days before the date of anticipated enrollment in course work at the University. Applicants who seek regular enrollment in the first quarter of graduate study must also file a report on the Graduate Record Examination with the Dean of the Graduate School before the date of first enrollment.

GRADUATE RECORD EXAMINATION

An acceptable score on the Graduate Record Examination is a prerequisite for all students before they may be enrolled in courses for graduate credit unless special permission is granted. This examination is given at the University in September, January, May and June of each year. Applicants for admission to the Graduate School may be admitted to this examination prior to entering the University. Seniors at the University who are within two quarters of graduation and currently enrolled graduate students are privileged to take this examination without charge.

An enrolled student who fails to achieve an acceptable score on the Advanced Test of the examination may be allowed one additional quarter of enrollment in undergraduate courses to strengthen the background in the area of the Advanced Test. Such a student may repeat the Advanced Test of the examination. A student who fails to achieve an acceptable score on the "repeat" examination at the University will become permanently ineligible to enroll in courses for graduate credit.

Students not enrolled at the University may apply for the examination through the National Testing Program by writing the Educational Testing Service, 23 Nassau Street, Princeton, New Jersey. The examination will be given under the National Testing Program in January, March, April and July, 1965. Information on the dates and testing centers may be obtained by writing directly to the Educational Testing Service.

NOTIFICATION OF ACCEPTANCE OR DENIAL OF ADMISSION

Official admission to the Graduate School requires a written notice from the University Dean of Admissions stating specifically that the Graduate Dean has approved the admission. *No student may be officially admitted to the Graduate School until he receives a written notice bearing the signatures of the Graduate Dean and the Dean of Admissions.*

Any student may be refused admission to the Graduate School who has not met one or more of the admission requirements as stated in this section of the University Bulletin. Admission to the Graduate School does not imply that the student has been accepted in any department to take graduate work, unless this is specifically stated in the letter of acceptance from the Dean of the Graduate School. Nor does acceptance in the Graduate School imply that a student may become a candidate for the master's degree.

SELECTION AND CHANGE OF MAJOR

Students enrolled in programs leading to the master's degree must upon completion of fifteen hours of graduate credit or admission to candidacy for the degree make written declaration on the major and minor field concentrations. A student who wishes to change from one degree objective to another must have the approval of the major adviser and the Dean of the Graduate School. Ordinarily, the student must earn at least thirty graduate credit hours toward the degree after the change is approved.

MAJOR-MINOR PROGRAMS

Most fields allow a major concentration of at least thirty credit hours and a minor concentration of fifteen credit hours. Teacher education requires a minor concentration in a content area of at least fifteen graduate credit hours.

DEGREE PROGRAM REQUIREMENTS

The Master of Arts degree requires a minimum of 45 credit hours of graduate residence work; a reading knowledge of French, Spanish or German; a thesis and a final oral comprehensive examination. This program is not open to students in any branch of teacher education.

The Master of Arts in Education program is open only to students in teacher education. The requirements for admission to this program include (1) a 3.00 (B) general average in at least 30 quarter credit hours in education on the undergraduate level, (2) at least a national twentieth percentile scole on the Advanced Test of the Graduate Record Examination, (3) a standard teaching certificate or qualifications for the same, (4) the removal of all undergraduate course deficiencies as determined by the student's major and minor professors, and (5) acceptance into the selected Graduate Teacher Education Program by the supervisor of that program. All candidates for the *Master of Arts in Education* degree must complete a minimum of 45 graduate credit hours of residence work, a thesis or a terminal project, and a final oral comprehensive examination. Most graduate curricula in teacher education require a 15 credit hour content area outside the department of major concentration.

The Master of Science degree program is available to all graduate students except those majoring in teacher education, English, and Romance Languages. Requirements for this degree include a minimum of 45 graduate credit hours

taken in residence, a thesis, and a final oral comprehensive examination. The minor concentration is optional.

TIME IN RESIDENCE AND TIME LIMITATIONS FOR COMPLETING REQUIREMENTS

All candidates for the master's degree must spend at least three full quarters of study in residence at the University after full admission to the Graduate School. Allowable transfer credits may not reduce the time required in residence.

All requirements for the master's degree must be completed within six calendar years, beginning with the first quarter of enrollment in courses for graduate credit. Graduate courses taken more than six years prior to completing all degree requirements must be repeated in order to be included in the credit hour requirements for the master's degree.

SCHOLARSHIP STANDARDS AND PENALTIES FOR POOR SCHOLARSHIP

A graduate student must maintain a minimum average of "B" (3.00 quality points) in all of his graduate work. Grades less than "C" are counted in compiling the general average, but they may not be included in the requirements for the degree.

A student may not repeat a graduate course for the purpose of raising the grade, unless the Major Advisor and the Dean of the Graduate School grant special approval. Such approval may be granted only after the student has presented an acceptable written statement that circumstances beyond his control contributed in a major way to his poor performance in the course which he wishes to repeat.

A student who fails to maintain a minimum average of "B" in his graduate work after receiving final grades in at least 15 graduate credit hours will be dropped from the Graduate School. A student who has been dropped from the Graduate School the first time may apply for readmission after the lapse of one ful quarter. A student who fails to maintain the minimum average required any quarter after such readmission will be dropped permanently from the Graduate School.

CLASS LOADS

When a student enrolls in any courses for graduate credit, the maximum class load shall be limited to 15 credit hours. Inservice teachers or personnel at the University may not take more than six hours of credit in a given quarter.

A student who has been placed on scholarship probation may not take more than nine credit hours during a given quarter until his work becomes satisfactory. Such a student may be allowed one quarter to raise his grades to the minimum average of "B."

CANDIDACY FOR THE MASTER'S DEGREE

A student may be recommended for degree candidacy by his major professor after he has (1) earned 15 graduate credit hours with a minimum average of "B", (2) made an acceptable score on the Advanced Test of the Graduate Record Examination, and (3) removed all course deficiencies.

TRANSFER OF CREDITS

A student may be allowed a maximum of nine graduate credit hours by transfer from another fully accredited college or university. All such credits must be residence work. No extension credits may be allowed.

UNDERGRADUATE COURSES FOR GRADUATE CREDIT

All undergraduate courses approved for graduate credit are listed in the Graduate School Bulletin. A maximum of nine such credit hours may be included in the requirements for the master's degree.

Graduate students who take an undergraduate course for graduate credit must declare this intent at the time of enrolling in the course.

GRADUATE COURSES FOR SENIORS

Seniors in their last quarter of undergraduate enrollment may take a maximum of nine graduate credit hours before graduation. Such courses are limited to the 500 level courses so indicated in the Graduate School Bulletin.

READMISSION

A student whose enrollment at the University has been interrupted by one quarter or more must apply for readmission to the Graduate School.

A student who has been dropped from the Graduate School the first time may become eligible to apply for readmission after the lapse of at least one full quarter. However, favorable consideration for readmission shall be based upon previous performance and upon the probability of successful performance in subsequent studies. A maximum of one full quarter of additional study may be allowed such a readmitted student. If, at the end of that quarter the student has not achieved the minimum "B" average in all work taken after the first enrollment in the Graduate School, he shall be dropped permanently from any program leading to the master's degree at the University. He shall also be denied the privilege of enrolling in any courses which are open to graduate students only.

THESIS AND PROJECT WRITING

Candidates for the Master of Arts and the Master of Science degrees are required to write a thesis based upon successful independent and original research. Enrollment in thesis writing is allowed only after the student has been admitted to candidacy for the master's degree. The thesis shall be written in the candidate's major field of concentration. The first enrollment in thesis writing must be at least one quarter prior to the quarter in which the candidate expects to graduate. After first enrollment, the candidate shall continue to enroll in Thesis Writing 512 each quarter until the thesis is completed and accepted by the Graduate Dean. All enrollments in Thesis Writing 512, except the last, shall be entered on the permanent records as "Repeats." Only the last quarter's enrollment shall carry 3 credit hours.

Candidates for the Master of Arts in Education degree shall have the option of writing a thesis or 2 terminal projects. Those who elect the thesis shall enroll in Thesis Writing 512 after admission to candidacy for the degree. Those who elect to write terminal projects shall enroll in Project Writing 601 and 602 at least one quarter before graduation. The terminal projects shall be written on subjects connected with "on the job" improvements in teaching or administration where the candidate works, or in related situations. Admission to candidacy for the degree is required before a student may begin on his thesis or project work.

All outlines of thesis problems and terminal projects shall require the approval of the major adviser and the Graduate Dean before such work may be undertaken. The final typed documents shall also require the approval of the major adviser and the Graduate Dean. Three copies of the typed thesis and two extra copies of the abstract are to be filed with the Graduate Dean at least three days before the final comprehensive examination. Two copies of each terminal project shall be filed with the major advisor at least three days before the final comprehensive examination.

ADVISEMENT

At first enrollment, each graduate student shall be assigned a major adviser, and a minor adviser, if a minor concentration is elected. The major and minor advisers shall give general academic guidance. However, the student shall be held responsible for initiating all required activities and for maintaining all standards of the Graduate School.

EXAMINATIONS

The candidate shall be given a preliminary departmental examination before he may be recommended to the Graduate Dean for the terminal comprehensive examination. The committee for the preliminary examination shall be composed of not less than three members of the departmental graduate staff, including a representative from the minor field, if a minor is taken.

The terminal comprehensive examining committee shall be composed of at least three members. The major adviser shall serve as the chairman of the examining committee. The other members of the committee may be selected from the departmental graduate staff, or from other related departments;

provided, however, that at least two members shall be regular members of the staff in the candidate's major field.

The Graduate Dean and the Assistant Graduate Dean shall be ex officio members of all terminal comprehensive examining committees.

The two-hour comprehensive examinations shall be conducted in the conference rooms of the Graduate School.

DESCRIPTIONS OF GRADUATE PROGRAMS

Curricula leading to the master's degree are grouped in alphabetical order within their respective Areas. All undergraduate courses approved for graduate credit are listed by numbers and titles in this section of the *Bulletin*. Full descriptions of these courses may be found in the appropriate undergraduate sections of this *Bulletin*.

GRADUATE AREA OF THE APPLIED SCIENCES

HAZO W. CARTER, Ph.D., *Coordinator*

Major concentrations leading to the Master of Science degree are offered respectively in Animal Science and Plant Science. Each curriculum requires 45 graduate credit hours and a thesis. A minimum of 27 graduate credit hours must be taken in the major area and 18 graduate credit hours may be selected in another field, preferably in the related area of the undergraduate major.

Department of Animal Science

ROLAND NORMAN, Ph.D.
Head and Chairman of Graduate Studies

The Department offers a major in Animal Science and courses for graduate students in related areas. The descriptions of courses from which a major concentration may be selected are listed below.

Undergraduate Courses Approved for Graduate Credit

Animal Husbandry 401. Market Milk. (3)
Animal Husbandry 403. Dairy Farm Operations. (3)
Biochemistry 402-3. General Biochemistry. (3)
Biochemistry 423. Seminar in Biochemistry. (1)

GRADUATE COURSES

501. *Advanced Animal Feeding.* (3) Devoted to studies 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) Devoted to 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) Provides an opportunity for the student to receive advanced training in the care and management of purebred herds, commercial herds, and herd development. Prerequisites: Animal Husbandry 103-303-311 or equivalents. Two lectures and one laboratory period.

521-22-23. *Animal Husbandry Seminar.* (3) Discussion of current literature in animal husbandry as presented in scientific journals.

531. *Advanced Animal Breeding.* (3) A study of the 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 Plant Management.* (3) Problems of dairy plant management including labor union relationships, plant layout, design, procurement, marketing and sales of dairy products.

533. *Technical Control of Dairy Products.* (3) A course designed to familiarize the student with analytical methods of quality control. Prerequisites: A. H. 401, Biochemistry 312, Biology 241. One lecture and two laboratory periods.

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

534. *Poultry Problems.* (3) Offered any quarter by arrangement.

512. *Thesis Writing.* (3)

503. *Advanced Poultry Nutrition.* (3) History of nutrition, 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.

531. *Advanced Poultry Management.* (3) Deals with the 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.

Department of Plant Science

FRED E. WESTBROOK, Ph.D., *Head and Chairman of Graduate Studies*

The Department offers a major in plant science and courses for graduate students in related areas. The program is developed as an outgrowth of a well-organized undergraduate curriculum. Its primary aims are to give the student a sound scientific background in soil and plant science according to current knowledge in the field, and to provide broad basic training for students in the allied and supporting sciences.

Students admitted to the program without sufficient undergraduate training for a full graduate program of study will be given opportunities to strengthen their basic course work in this and other departments.

UNDERGRADUATE COURSES APPROVED FOR GRADUATE CREDIT

301. *Sorghums and Small Grains.* (3).
302. *Cotton and Tobacco.* (3).
303. *Plant Physiology.* (3).
321. *Farm Weeds.* (3).
403. *Legumes and Pastures.* (3).

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: Agronomy 201, Biology 101-2. Three lectures.

502. *Fiber, (Other than Cotton) Sugar, and Root Crops.* (3) A study of the distribution, characteristics and cultural requirements of flax, hemp, sugar cane, sugar beets, white and sweet potatoes. Prerequisite: Agronomy 302. Two lectures and one laboratory period.

503. *Soil Classification.* (3) Teaches the basis of soil classification, genesis and morphology of zonal soils of the United States. Emphasis placed on the important series of Tennessee. Prerequisites: Agronomy 202-401. Two lectures and one laboratory period.

511. *Thesis writing.* (3) Methods of research.

512. *Thesis.* (3) Graduate students only.

513. *Advanced Plant Pathology.* (3) Basic concepts of diagnosis, cause and control of selected plant diseases. Two lectures and one laboratory period.

521-22-23. *Seminar.* (3) Provides opportunity for the discussion of current problems in Plant Science. Prerequisites: Plant Science 201-2 and permission of the instructor. One hour credit each quarter. One meeting per week.

531-32-33. *Plant Science Literature.* (3) Acquaints the student with the literature in Agronomy and Horticulture. One 2-hour period per week.

541. *Advanced Methods in Soil Analysis.* (3) Official quantitative methods of soil and plant analysis. Prerequisite: Agronomy 402. Three laboratory periods.

542. *Special Problems in the Agronomic Sciences.* (3) A study of the principles of soil fertility maintenance, new problems and their solutions, and new solutions to old problems in the agronomic sciences.

543. *Special Problems in the Horticultural Sciences.* (3) A study of new problems and their solutions, and new solutions to old problems in the horticultural sciences.

551. *Advanced Pomology.* (3) The development and performance of fruit plants as influenced by environment and production practices. Two field trips required. Two lectures and one laboratory period.

552. *Advanced Methods in Plant Analysis.* (3) Official quantitative methods of soil and plant analysis. Prerequisites: Agronomy 402. Three laboratory periods.

553. *Advanced Propagation of Horticultural Plants.* (3) A study of the methods of propagating horticultural plants including seedage, cuttage, and grafting of both economic and ornamental plants. Two lectures and one laboratory period.

MINOR IN PLANT SCIENCE

501. *Plant Breeding.* (3).
502. *Fiber-Sugar and Root Crops.* (3).
503. *Soil Classification.* (3).
513. *Advanced Plant Pathology.* (3).
551. *Advanced Pomology.* (3).
553. *Advanced Propagation of Horticultural Plants.* (3).

AREA OF THE BIOLOGICAL SCIENCES

JOHN MALLETTE, Ph.D., *Coordinator*

Department of Biological Sciences

H. K. WOOD, Ph.D., *Head*
JOHN MALLETTE, Ph.D., *Chairman, Graduate Division*

The Department of Biological Sciences offers graduate programs in biology and zoology leading to the Master of Science and Master of Arts degrees. Both programs are designed (1) to prepare scholars for the pursuit of research in both the pure and applied branches of the biological sciences, (2) to improve the subject field training of high school and college biology teachers as well as workers in technical branches of biology, and (3) to provide service courses for graduate areas of other departments of the University whose students have the necessary prerequisites. Regular status in the Department indicates the student (1) has had the courses in biology or their equivalents as required for an undergraduate major (see Department of Biological Sciences, undergraduate curricula, in University Catalog) with a minimum of 36 acceptable quarter hours with at least a 2.50 point average (based on the 4.00 system), and (2) has met all other requirements as specified by the Graduate School.

Subsequent departmental requirements for the Master of Science degree in addition to those required by the Graduate School are (1) regular participation in Seminar, and (2) presentation of a seminar on the thesis.

A candidate pursuing a program leading to a Master of Arts degree must, in addition to fulfilling all requirements for the Master of Science degree, pass a foreign language examination based on a reading knowledge of either German or French*. This should be done prior to the end of the second quarter of the graduate program.

* Spanish may be elected upon the recommendation of the major adviser and the approval of the Head of the Department.

In fulfilling the minimum forty-eight quarter hours of approved courses for either the Master of Science or the Master of Arts degree, the basic core consists of thirty-nine (39) quarter hours of prescribed courses. The remaining nine (9) hours are based on work in the chosen area of research. These research courses are Biology 510—Literature and Methods in Research, Biology 511—Research in Biology, and Biology 512—Thesis Writing. An "I" is awarded only in Biology 512 at the end of the quarter if the thesis is not completed. Thereafter, the candidate is to enroll in Biology 512 for each additional quarter he is working on the thesis, and until it is completed. An "I" removal grade is then awarded for Biology 512.

Emphasis is placed on research in connection with which all the requirements necessary for a scholarly piece of work will be demanded. Available areas for research are in the fields of Embryology, Entomology, Genetics, Microbiology, Parasitology and Physiology. Owing to the research requirements of the Department, a student ordinarily is required to spend a minimum of five (5) quarters of work to qualify for a master's degree.

The Department offers a graduate minor in biology as a subject field for those graduate students who seek the Master of Science degree in either science education or secondary school instruction, or a Master of Education degree in secondary school instruction who have the equivalent of an undergraduate major in one of the fields of biology (for purpose and prerequisites, see the section on "Special Requirements for majors in Secondary School Instruction). A minor consists of eighteen (18) quarter hours selected from graduate courses in the basic core. Nine hours of undergraduate courses approved for graduate credit may be included.

Limited numbers of graduate and research assistantships are available to students who show unusual promise and competence in the field. Applications should be made by April 1st of the preceding school year for the summer and/or succeeding year for which the assistantships are to be awarded.

CURRICULUM IN BIOLOGY

Basic Core

Course	*Title*	*Quarter Hours*
Botany-Microbiology	400-level Electives	8
Biology and Zoology	500-level Electives	28
Biology 501-2-3	Biology Seminar	3
	Total	39 Hours

For Research

Biology 510	Literature and Methods in Research	3
Biology 511	Research in Biology	3
Biology 512	Thesis Writing	3
	Total	9 Hours
	Grand Total	48 Hours

CURRICULUM IN ZOOLOGY

Basic Core

Course	*Title*	*Quarter Hours Credit*
Zoology 521-2	General Experimental Phys. I-II	8
Zoology 531	Experimental Embryology	4
Biology 534	General Cytology	4
Zoology 542	Advanced Parasitology	4
Zoology 543	Arthropods and Diseases	4
Biology 571	Genetics of Microorganisms	4
Zoology 581	Morphology and Taxonomy of Insects—I	4
Zoology 582	Taxonomy of Insects—II	4
Biology 501-2-3	Biology Seminar	3
	Total	39 Hours

For Research

Biology 510	Literature and Methods in Research.	3
Biology 511	Research in Biology	3
Biology 512	Thesis Writing	3
	Total	9 Hours
	Grand Total	48 Hours

Undergraduate Courses Approved for Graduate Credit

Biology	411	Advanced Genetics	(4)
Biology	441	Histology and Microtechnique	(4)
Botany	411	Introductory Plant Physiology	(4)
Botany	453	Field Botany	(4)
Microbiology	412	Pathogenic Microorganisms	(4)
Microbiology	413	Immunology and Serology	(4)
Microbiology	463	Virology	(4)
Zoology	401	Invertebrate Zoology	(4)
Zoology	402-3	Mammalian Physiology	(4)
Zoology	441	General Parasitology	(4)
Zoology	461	Endocrinology	(4)
Zoology	483	General Entomology	(4)

Graduate Courses in Biology

501?2?3. *Biology Seminar.* (3) Current problems in Biology. Required of all graduate students in the Department. Meets weekly during each quarter of the regular school year, and summer terms.

510. *Literature and Methods in Research.* (3) The purpose of this course is to acquaint the student with the literature in the area of his selected research. Emphasis is placed on methods used in research. Both oral and written reports are required. This course should precede Biology 511.

511. *Research in Biology.* (3) This course provides for individual research under the supervision of the major adviser. The student must present a general statement of proposed research and obtain the approval of his Guidance Committee. Prerequisite: Biology 510.

512. *Thesis Writing.* (3) This course enables the student to receive credit for the preparation of a thesis over his research under the supervision of his Guidance Committee. The format of the thesis is expected to conform with that adopted by the Department of Biological Sciences.

534. *General Cytology.* (4) The structure and behavior of the cell and its components with special emphasis on mitosis and meiosis. Prerequisite: Consent of instructor. Three lectures and two laboratory periods.

561-2-3 *Special Problems in Plant Morphology.* (12) Individual directed study, investigation, and practice in selected areas of plant morphology. Prerequisite: Consent of instructor.

571. *Genetics of Microorganisms.* (4) The heredity of viruses, bacteria, molds, yeast, and protozoa, with emphasis on protozoan genetics. Psychologic aspects primarily relating to genetics in these forms are also considered. Prerequisite: Biology 311 and consent of instructor. In addition, Biology 411 is recommended. Three lectures and two laboratory periods.

Graduate Courses in Zoology

521. *General Experimental Physiology I.* (4) The chemical and physical nature of protoplasm. Considered are its chemical constituents and their properties, its colloidal nature and the bearing of this state on its physical properties and processes. Prerequisite: Consent of instructor. Three lectures and two laboratory periods.

522. *General Experimental Physiology II.* (4) The metabolic activities of protoplasm. Both catobolic and anabolic aspects are considered. Prerequisite: Consent of instructor. Three lectures and two laboratory periods.

531. *Experimental Embryology.* (4) The principles and mechanisms of developmental physiology. Prerequisite: Zoology 432 or equivalent or consent of instructor. Three lectures and two laboratory periods.

542. *Advanced Parasitology.* (4) Life histories, taxonomy, morphology and general importance of the parasitic protozoa and the helminths to man and animals. Prerequisite: Consent of instructor. Three lectures and two laboratory periods.

543. *Arthropods and Diseases.* (4) A study of the relationships of arthropods to diseases of man and animals. Special considerations are given to the mites, ticks, lice, bugs, fleas, mosquitos, and flies. Prerequisite: Consent of instructor. Three lectures and two laboratory periods.

581. *Morphology and Taxonomy of Insects I.* (4) A study of the comparative morphology of insects with special emphasis on the taxonomic applications of morphology; including a survey of the various insect groups, with emphasis on the characters used in determining adult insects to family and beyond. Some attention is given to methods of collecting, mounting and preparing insect material for study. All the orders are covered except Coleoptera, Lepidoptera, Diptera, and Hymenoptera. Prerequisites: Zoology 483 or consent of the instructor. Three lectures and two laboratory periods per week.

582. *Taxonomy of Insects.* (4) A continuation of Zoology 581, covering Coleoptera, Lepidoptera, Diptera, Hymenoptera. Prerequisites: Zoology 483 or consent of the instructor. Three lectures and two laboratory periods per week.

GRADUATE AREA OF EDUCATION

NEBRASKA MAYS, Ph.D., *Coordinator*

Graduate concentrations leading to the master's degree are offered in several fields of education.

The Master of Arts in Education:

Administration and Supervision
Business Education
Educational Guidance
Educational Psychology
Elementary Education
Health and Physical Education
Music Education
Science Education
Secondary Education

Inasmuch as the several curricula have different requirements, the student should determine early in his studies which program he plans to pursue. Preliminary advice may be obtained from the Coordinator of Graduate Studies in Education. More detailed information may be received from the Chairman of Graduate Studies in the selected curriculum.

Department of Administration, Curriculum and Instruction

CHARITY M. MANCE, Ph.D., *Head*

The Department offers master's degrees in Administration and Supervision, Elementary Education, and Secondary Education. In all curricula, the student must present at least 36 quarter hours in undergraduate education and the necessary prerequisites for courses on the graduate level. The major adviser may prescribe the completion of additional undergraduate courses to meet the required background for a full graduate program of study.

CURRICULUM IN ADMINISTRATION AND SUPERVISION

NEBRASKA MAYS, Ph.D., *Chairman of Graduate Studies*

Required and Elective Courses

Required:			*Electives:* (Select 15 quarter hours)
Education	500 or 526	3	Education 524
Education	502	3	Education 546
Education	503	3	Education 551
Education	505	3	Education 554
Education	511	3	Education 561
Education	512	3	Education 572
Education	601-602	3 or 6	Education 573
Education	564	3	Education 595
Education	587	3	Education 596
Psychology	501 or 502	3	Psychology 531
Psychology	543	3	Psychology 532
			Psychology 551
Total hours required		33 or 36	Spec. Educ. 465
			Spec. Educ. 467
			Spec. Educ. 471

CURRICULUM IN ELEMENTARY EDUCATION

DOROTHY DRAPER, Ed.D., *Chairman of Graduate Studies*

Required and Elective Courses

Required:			*Electives:* (Select 15 quarter hours)
Education	500	3	Education 473
Education	511	3	Education 502
Education	512	3	Education 514
Education	601-602	3 or 6	Education 524
Education	526	3	Education 534
Education	527	3	Education 538
Education	529	3	Education 546
Psychology	501 or 502	3	Education 547
Psychology	543	3	Education 548
Sci. Educ.	505	3	Education 562
Math.	523	3	Education 564
			Education 573
Total hours required		33 or 36	Education 587
			Psychology 551
			Spec. Educ. 465
			Spec. Educ. 467
			Spec. Educ. 471

Subject Matter Areas for Majors in Graduate Elementary Education

Elementary Education Majors who present the following courses in English and Speech may pursue a graduate minor of 15 credits in *Communications:*

Undergraduate Prerequisites–	
English 101-2-3	9
English 211-2-3	9
Speech 201-2	6
Speech 323	3
Total	27
Graduate Minor in Communications–	
English 421	3 or
English 422	(3)
English 451	3
English 501	3
English 581-2-3	9 or
Speech 50½-3	(9)
Total	18

Elementary Majors who present the following courses in history may pursue a graduate minor in *History:*

Undergraduate Prerequisites–	
History 121-2-3	9 or
History 301-2-3	(9)
History 201-2-3	9
History 311	3
History 341	3 or
History 342	(3)
History 491	3 or
History 492	(3)
Total	27
Graduate Minor in History–	
History 501-2-3	9 or
History 511-2-3	(9)
History 531-2	6
Total	15

CURRICULUM IN SECONDARY EDUCATION

SOLOMON D. SHANNON, Ph.D., *Acting Chairman of Graduate Studies*

Required and Elective Courses

Required:			*Electives:* (Select 9 quarter hours)
Education	500	3	Education 473
Education	511	3	Education 502
Education	512	3	Education 525
Education	601-602	3 or 6	Education 528
Education	526	3	Education 534
Psychology	501 or 502	3	Education 573
Psychology	543	3	Psychology 532
			Spec. Educ. 465
Total hours required		21 or 24	

Select 15 or 18 Graduate Credit Hours in the subject field of the undergraduate major or minor for the content area.

Undergraduate Courses Approved for Graduate Credit

Education 461, Institute: Organization of School Staffs for Curriculum Improvement (3)

Special Education 465. Introduction to Special Education. (3)
Special Education 467. Characteristics and Needs of the Mentally Retarded. (3)
Special Education 471. Methods and Materials for Teaching the Mentally Retarded Child. (3)
Education 473. Audiovisual Aids in Education. (3)

Graduate Courses

500. *Foundations of Education* (3) A critical analysis is made of the sociological, psychological, philosophical, and ethical foundations of education.
501. *Educational Statistics.* (3) See Psychology for course description.
502. *Advanced Statistics.* (3) See Psychology for course description.
502. *School Administration.* (3) Includes 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) Problems of administrative organization and relationships, financial control and assistance, legislative and regulatory standards, and various types of supervisory service are studied. The history of supervision is traced, its background is sketched, and details concerning the methods now in use are described. Techniques for problem solving by the group process are explored.
505. *Legal Basis for Public School Organization and Administration.* (3) A Study is made of legal principles that relate to such matters as authority, responsibility, and liability of school boards; districts, state and federal organizations. The legal status of principals and teachers are considered. The present interpretation and application of the school laws of Tennessee are examined.
505. *Problems in Science for Elementary Teachers.* See Science Education for Course description.
511. *Methods of Research.* (3) A study and practical exploration of the techniques of research. A critical analysis is made of the various types of research and the various manuals of acceptable styles for writing data.
512. *Thesis Writing.* (3) This course involves the writing of a thesis. The adequate set-up of the problems, the collection of data, their use, and conclusions to be reached are emphasized.
514. *Principles of Teaching.* (3) Critical survey of elementary and secondary education; current trends, administration, pupil guidance, teaching methods and evaluation.
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.
523. *Math. Advanced Course in Teaching of Arithmetic.* (3) A study of methods and materials used in teaching arithmetic in the elementary grades. Emphasis is placed on methods leading to mathematical understanding, methods of teaching computational skills and applications in quantitative problems of everyday living.
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.* (3) Considers secondary school problems in the fields of curriculum materials and patterns, general techniques and evaluation of the outcome of instruction.
526. *Philosophy of Education.* (3) A critical examination of the purpose of education in our elementary and secondary schools and the bearing of this purpose on problems of organization and administration, the selection of subject-matter, and classroom practice. Consideration will be given to the significance of our educational purpose and practice to our concept of a democratic society.
527. *Advanced Course in Social Studies for Teachers.* (3) This course is designed for students who desire to explore the newer practices and materials existing in the social studies program of the elementary schools. It

offers the individual student an opportunity for creative expression and directed study in areas of need and interest.
528. *The Junior High School.* (3) Designed for students who are looking forward to securing teaching positions in the junior high school and for in-service teachers who would like to concentrate their work around the problems of instruction, organization of materials, selection of materials, and evaluation of pupil growth.
529. *Advanced Course in Language Arts for Teachers.* (3) A study of the current trends and newer practices in the teaching of subjects which make up the language arts. It offers the individual student an opportunity for creative expression, and directed study in areas of need and interest.
534. *An Evaluation of Public School Programs.* (3) Designed to help the student analyze and interpret state, regional, and national public school evaluation programs. Consideration will be given to the intelligent use and interpretation of standardized and teacher-made tests and other procedures for collecting data aimed at the newer objectives of education.
537. *Evaluating the Elementary School.* (3) Offers a student the opportunity to construct and use the evaluative criteria for analyzing the total elementary school program or aspects of such programs of special interest and need to the individual student. Consideration of probable outcomes of the evaluative process is stressed.
538. *Basic Principles of Elementary Education.* (3) A critical analysis of child-centered and society-centered points of view in elementary education; purposes or values basic to a balanced, functional instructional program in the elementary school.
543. *Advanced Educational Psychology.* (3) See Psychology for Course Description.
546. *Organization and Administration in the Elementary School.* (3) Designed for administrators and teachers who desire to study purposes, practices, and trends in elementary school administration. The special areas include: the elementary school in the organization of the public school system; objectives of elementary education; school and community relationships; organization of the curriculum and pupil personnel work; evaluating various phases of the school organization and facilities; and research in elementary school organization.
547. *Current Issues, Trends and Practices in the Elementary School.* (3) Designed to give teachers, supervisors and administrators an opportunity to examine the current issues, trends, and practices in the elementary school as they refer to procedures, equipment and materials of instruction. Practical suggestions will be made to problems involving the improvement of instruction.
548. *Personnel Problems in the Elementary School.* (3) Emphasis on operation of groups in schools and communities stressing personnel policies and practices in schools and communities. Special consideration is given to pupil-teacher, teacher-principal, principal-staff problems and the interrelationships of these persons to each other and the community.
549. *Supervising the Elementary School.* (3) Designed to acquaint the students with organization and personnel factors in the elementary school with special emphasis on methods and techniques, problems, and practices of supervision. Attention is given to problems of human relations in the supervisory job.
551. *The Principal at Work.* (3) A systematic study and analysis of the work of a principal in a given school situation 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.
554. *Group Dynamics.* (3) Designed to provide opportunities for pre-service and in-service teachers to gain experience in group organization, planning and evaluation, and to develop skills in group leadership and participation, recording, observing role playing, and interpretation of group interaction.
555. *Comparative Education.* (3) This course is designed to help students gain insight into the development of educational systems in other countries,

and how various national groups induct the young into society. Using education in the United States as a convenient point of reference, the systems of educational operation, administration, finance and control of major nations will be comparatively studied. Some stress will be given to educational developments in South America, Canada as well as to the educational efforts of newer nations.

562. *Techniques of Teaching Reading in the Elementary School.* (3) A consideration of the modern trends in the teaching of reading techniques and materials for children on the primary, middle and upper grade levels.

564. *School and Community Relations.* (3) The relation of school and community in developing responsible citizens; awareness of the role of the local community on the national and international scenes; insights into social needs, processes and problems; effective use of the community and community resources in providing life experiences for developing citizens.

572. *Public School Finance.* (3) A consideration of the financial support of elementary and secondary education involving sources of income, methods employed in financing, and expenditures. The school finance problems of the local administrator is given special attention.

573. *Problems in Audio-Visual Education.* (3) Analysis of the development and function of audio-visual programs in schools. Includes problems of organization, selection and utilization of materials and equipment, unit costs, and school plant requirements. Some laboratory experience with equipment is required.

575. *Review of Research Studies in Elementary Education.* (3) Provides for a study of the emerging trends in education and their implications for elementary school teachers. A review of the best literature and research available in the field studied, with direct applications to elementary school problems.

587. *Curriculum Construction and Practices in the Public Schools.* (3) Critical appraisal is made of the development and present status of the elementary and secondary school curriculum policies and practices in terms of functional value and social needs; implications for reorganization and basic changes and trends. The team work of group process used in curriculum construction is critically studied.

588. *Supervision of Student Teaching.* (3) A course designed primarily to increase the effectiveness of in-service teachers and administrators as they participate in student teaching programs. The course seeks to develop greater insight into the nature of teacher education programs, with major attention devoted to the student teaching phase of teacher education and the role of the supervising teacher as an important determinant of the quality of neophyte members of the teaching profession. Duties and responsibilities of supervising teachers are identified and critically studied.

595. *Curriculum Planning and Programming in the Elementary School.* (3) Designed for principals, supervisors and teachers who desire to become acquainted with the current procedures, practices and trends in curriculum planning and programming in the elementary school.

596. *Visiting the Teacher at Work and Improving Instruction.* (3) Designed primarily for elementary teachers, principals, and supervisors. The students are expected to visit and observe, along with the instructor, a teacher or teachers instructing children in as normal classroom situation as can be provided. The course work will be concerned with an evaluation of the classroom visitation and observation and suggested methods and materials for improving instruction.

601. *Education Seminar.* (3) This course consists of a survey of the current literature and subject matter in the major field. Required for the Master of Education degree in Administration and Supervision, Elementary Education, and Secondary School Instruction.

602. *Project Writing.* (3) This terminal course consists of writing a project centered around some problem in the area of the candidate's teaching or administrative responsibilities.

Department of Art and Music Education

EDWARD C. LEWIS, JR., Ph.D., *Head and Chairman of Graduate Studies*

CURRICULUM IN MUSIC EDUCATION

The privilege of graduate study in the area of Music Education is open to those applicants who have satisfactorily completed a four-year curriculum in music and/or music education, and who meet all other requirements for admission set up by the University and the Graduate School. The purpose of the graduate program in music education is two-fold: to advance the fund of knowledge in the specific area of music instruction through scholarly research, and to broaden specific aspects of the art and science of teaching music through intensive study of established practices as well as new trends.

In addition to admission requirements set up by the University and/or the Graduate School, the Department expects that the following requirements be met by all students admitted to candidacy for the master's degree in music education:

1. The bachelor's degree earned by any prospective masters candidate must be substantially the same (in content and experiences required) as the undergraduate curriculum in music education at this University. Any differences in subject content must be construed as under-graduate deficiencies to be made up within the first several quarters of matriculation here.
2. Each student shall be expected to pass proficiency examinations in the following areas:
    1. Music theory
    2. Music history and literature
    3. Conducting
    4. Major and minor performance areas

Required and Elective Courses

The sequence of course work at the graduate level leading to the Master of Arts in Education degree in Music Education is divided into three categories as follows:

A. Core requirements in education

Education 511—Methodology in Research	3
Education 502 or 503—Administration or Supervision	3
Education 526—Philosophy of Education	3
Psychology 501—Educational Statistics	3 or
Psychology 502—Advanced Educational Statistics	3
Psychology 543—Advanced Educational Psychology	3
Total	15

B. Core requirements in Music and Music Education

Music 500—Intro. to Grad. Study in Mus. Ed.	3
Music 506—Psychology of School Music Teaching	3
Music 501 or 510—Vocal or Instrumental Methods and Materials	3
Music 525—Seminar in Music Education	3
Music 512—Thesis Writing in Music Education	3
Total	15

C. Electives in Music Education

Candidates for the Master of Arts in Education degree in Music Education may elect the remaining fifteen (15) quarter hours of course work from the following four groups of graduate courses in Music, Music Education, and Education with the provision that at least one course must be elected from Groups I, II, III.

Group I—Music Education Electives

Music 524—Band Pageantry	3
Music 526—Seminar in Music Education	3
Music 527—Supervision and Administration of School Music	3
Music 501 or 510—Vocal or Instrumental Methods and Materials	3

Group II—Music Theory Electives

Music 532—Advanced Theory	3
Music 533—Advanced Theory	3
Music 534—Harmonic Counterpoint	3
Music 428—Physics of Music	3
Music 420, 421—Form and Analysis	3 to 6
Music 430—Orchestration	3
Music 433—Composition	3

Group III—Musicology Electives

Music 507—The Symphony	3
Music 508—The Opera	3
Music 509—Twentieth Century Music	3

Group IV—Education Electives

Education 500—Foundations of Education	3
Education 514—Principles of Teaching	3
Education 524—History of Education	3
Education 573—Problems in Audio Visual Education	3

Candidates for the Master of Education degree are required to take Music 601 and 602 instead of Music 512.

Undergraduate Courses Approved for Graduate Credit

Applied Music

41A, B, C.	(6)	Fourth Year Piano
42A, B, C.	(6)	Fourth Year Organ
43A, B, C.	(6)	Advanced Violin or Viola
44A, B, C.	(6)	Third and Fourth Year Voice
45A, B, C.	(6)	Third and Fourth Year Advanced Cornet
46A, B, C.	(6)	Third and Fourth Year Trombone
47A, B, C.	(6)	Third and Fourth Year Clarinet
48A, B, C.	(6)	Third and Fourth Year Flute
49A, B, C.	(6)	Third and Fourth Year Saxophone

Music Education

420-1	(6)	Forms and Analysis
430	(3)	Orchestration
428	(3)	Physics of Music
433	(3)	Composition

Graduate Courses

500. *Introduction to Graduate Study in Music Education.* (3) A concentrated survey of bibliographical material, current periodical literature, library resources, and research techniques applicable to graduate study in Music Education. Three lectures.

501. *Vocal Methods and Materials.* (3) A detailed study of vocal problems met in public schools; methods, materials and problems of organization. Also psychological and physiological problems in the teaching of voice production; diagnosis, breath control, resonance, diction; repertory and interpretation. Three lectures.

506. *The Psychology of School Music Teaching.* (3) The relationships of psychological research to practical applications in Music Education. The relationship of the learning process to music learning; executant factors in music education; evaluation, tests and measurements. Three lectures.

507. *The Symphony.* (3) The historical background of the growth and development of the modern symphony orchestra along with a critical study of the symphony. Listening and analysis of selected masterworks of symphonic literature. Three lectures.

508. *The Opera.* (3) A study of operas illustrating the basic types. A history and analysis of the operatic literature. Actual singing of scores and recorded music will illustrate the discussion. Three lectures.

509. *Twentieth Century Music.* (3) A study of the principal personalities and trends in music since 1900. An analysis of the form, style and idiom of modern music. Three lectures.

510. *Instrumental Methods and Materials.* (3) A detailed study of instrumental problems met in public schools; methods, materials and problems of organization. Discussions of financing, instrument testing, storage and repair; rehearsal technique; and other problems relating to the work of the instrumental director. Three lectures.

512. *Thesis Writing in Music Education.* (3)

524. *Band Pageantry.* (3) An intensive study of problems unique to the marching band, rudimentary technic of the drum major's baton; problems of cadence, alignment, and formations; selecting and scoring music for maneuvers and stunts. Three lectures.

525-26. *Seminar in Music Education.* (6) A survey of research studies and an evaluation of current methods in Music Education. Criteria for selection of materials and classroom procedure. Review and criticism of philosophies and curricula in music education. Three lectures.

527. *Supervision and Administration of School Music.* (3) An analysis and evaluation of principles, practices and trends in the organization, administration, and supervision of music education in public school system. Three lectures.

532-33. *Advanced Theory.* (6) Analysis of representative compositions of all major eras and in all major forms, and the application of the techniques observed. Three lectures.

534. *Harmonic Counterpoint.* (3) An intensive study of the contrapuntal style of Bach; the writing of three and four-part contrapuntal works employing techniques of the Baroque Era. Three lectures.

601. *Music Seminar.* (3) This course is designed to survey the current literature in the field of music education. It is required for the Master of Education degree in music education.

602. *Project Writing.* (3) This terminal course consists of writing a project centered around a problem in music education. The finished product must meet the approval of the project supervisor in the course and the major adviser. Music Seminar 601 must be taken at least one quarter or summer term before enrollment in this course.

Department of Business Education

CECILLE E. CRUMP, Ed.D., *Head and Chairman of Graduate Studies*

The curriculum is designed to give instruction in the improvement of teaching in business subjects, to offer opportunity for guided research in experimental problems in the field, and to develop leaders in business education throughout the state and nation.

The program consists of courses which are of interest to (a) prospective teachers for business subjects, (b) business teachers in secondary schools, colleges, and universities who are interested in securing additional training or advanced degree in the field of business education, and (c) school administrators and supervisors of business education programs.

Admission Pre-requisites: A student must have completed at least 45 quarter hours of undergraduate work in business with not less than a 2.5 general average to be admitted in good standing.

A minimum of the following credits or their equivalents must be present for regular admission to the department.*

A minimum of the following credits must be present for regular admission to the department.

	Quarter Hours
Typewriting	9
Shorthand	9
Principles of Business Education	3
Office Machines	3
Principles of Economics	9
Methods of Teaching Business Subjects	6-9
Student Teaching in Business Education	6-9
	45

* Equivalent is interpreted to mean teacher certification in the subject.

Requirements for the Master of Arts in Education Degree.—This curriculum offers professional training for expertness in programs, procedures, methods, and techniques in education; plus an understanding of the psychological and sociological bases of education.

The required and elective courses to complete the forty-eight credit hour program are as follows:

Required		*Electives*	
Core:		Education 500 3	
Education 502 3		Education 503 3	
Education 511 3		Education 514 3	
Education 526 3		Education 524 3	
Psychology 502 3		Education 525 3	
Psychology 543 3		Education 528 3	
		Education 534 3	
Total Core Course Hours...	15	Education 554 3	
Business Education:		Education 564 3	
**Bus. Educ. 501-502-503....6		Education 573 3	
**Bus. Educ. 512.....3		Education 587 3	
Bus. Educ. 521.....3			
Bus. Educ. 522.....3		Total Selected Hours	9
Bus. Educ. 523.....4			
**Bus. Educ. 524.....3			
Bus. Educ. 601.....3			
Bus. Educ. 602.....3			
Total Bus. Ed. Hours.....	30	Total Required Hours ...	51

Minor, cognate or related field 15
(English, History, Speech, Guidance, Psychology, etc.)

Undergraduate Courses Approved for Graduate Credit

Business Education 400. (3) Principles of Business Education.

Business Education 413. (3) Curriculum Development in Business Education.

Graduate Courses

BE 501. *Improvement of Instruction in Shorthand and Typewriting.* (3) For experienced and prospective teachers of typewriting, shorthand, and related office practice. Materials of instruction available to teachers presented and methods of developing original materials considered and applied through lectures, demonstrations, outside reading, and reports. Course may be subdivided as A and B.

BE 502. *Improvement of Instruction in Office Practice.* (3) The organization of materials and records used in office practice and office machines courses. Course objectives: teaching techniques, achievement standards, curricula, pupil and testing evaluation. Concurrently, the ability to operate the more common business machines is developed.

BE 503. *Improvement of Instruction in Bookkeeping, Accounting, and Related Subjects.* (3) Important problems and procedures in the mastery of bookkeeping and related office knowledge and skills from the standpoint of the teacher. Includes materials, tests, standards, and teaching procedures. Teaching problems of students emphasized.

BE 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.

BE 512. *Research in Business Education.* (3) Completion of the required thesis.

BE 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.

BE 521. *Current Problems in Business Education.* (3) Significant problems as evidenced by the study and evaluation of the current literature 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 given to specific problems of members of the class.

BE 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.

BE 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.

BE 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 program.

BE 541. *Seminar in Advanced Economic Theory.* (3). Readings, independent investigations, reports and critical discussions of debatable topics in the field of economic theory. An intensive study of selected writings of modern economists, particularly in the areas of value, distribution, and price theory.

BE 542. *Seminar in Monetary and Banking Policy.* (3) Readings, independent investigations, reports, and critical examination of money and banking policy, with emphasis on money and price levels, Federal Reserve policy and stabilization, control of the monetary market by the Federal Reserve System and the Treasury. Selected problems in monetary policy, monetary theory, and monetary reform.

BE 543. *Seminar in Current Economic Problems and Policies.* (3) Readings, independent investigations, reports, and critical study of current economic problems and policies considered in relation to their historical background and to the economic principles underlying them.

BE 601. *Business Education Seminar.* (3) Methods of educational research applied through a critical evaluation of selected problems and review of current literature in the field of business education. Includes a complete over-view of the field.

BE 602. *Project Writing.* (3) Completion of the project required for the Master of Arts in Education degree.

Department of Health and Physical Education

ROBERT S. COBB, Ph.D., *Head and Chairman of the Graduate Division*

The Department provides facilities and faculty for a wide range of advanced and specialized training for teachers, leaders, administrators, coaches, recreation workers, and creative scholars.

GRADUATE DIVISION OF HEALTH AND PHYSICAL EDUCATION

The Master of Arts in Education

Aside from a course program of 48 credit hours in the curriculum, compentence in pure and applied research in health and physical education is regarded as one of the fundamental requirements for the attainment of this degree. The curriculum offers advanced training in all areas offered by the Department on the undergraduate level.

Requirements: Applicants for graduate majors in the curriculum must have completed a minimum of 30 undergraduate quarter credit hours in the combined field are expected to present at least 18 undergraduate credits in this area before they may become eligible to pursue graduate courses in health and physical education.

Students who plan to pursue a major in health and physical education must have successfully completed at least ten (10) courses and 30 credit hours from the following list (the first three courses listed are required):

** Required courses.

1. Principles of Physical Education
2. Organization and Administration of Health and Physical Education
3. The Teaching of Physical Education or Methods and Materials in Physical Education, or Practice Teaching in Physical Education
4. Applied Anatomy and/or Kinesiology
5. Athletic Coaching (Football and Basketball)
6. Group Games
7. Community Recreation
8. Conditioning Exercises, Stunts or Tumbling
9. First Aid and Safety, or Safety Education, or Treatment of Athletic Injuries
10. History of Physical Education
11. Health Instruction, or Materials and Methods in Health Education, or The Teaching of Health
12. Individual Physical Education, or Restricted, or Corrective Physical Education
13. Intramurals or Program Planning
14. Nutrition
15. Personal Hygiene and/or Community Hygiene
16. Playground Supervision or Camp Craft and/or Camping
17. Philosophy of Physical Education and/or Psychology of Physical Education
18. Physical Diagnosis or Anthropometry
19. Physiology of Exercise
20. Courses in Physical Therapy
21. Adult Sports and/or Recreational Games
22. Rhythms
23. Modern Dance and/or Social Dance
24. Dance Composition and Theory
25. Individual Sports
26. Swimming
27. Measurement in Physical Education
28. Measurement in Health Education

To be admitted to the graduate curriculum, a student must also show proficiency in at least two of the following areas:

1. Team Sports
2. Individual Sports, or Self Testing Activities
3. Rythms
4. Acquatics
5. Group Games

The Department reserves the right to determine proficiency by administering written and/or skill performance tests.

A student whose undergraduate record does not satisfy the above course requirements, or who has not pursued an undergraduate major or minor in health, physical education or recreation, but who has had six (6) or more courses in the combined areas; or who has done two or more years of successful teaching in physical education or the combined areas; or who has done two or more years of successful coaching, may be admitted to graduate preparation by special permission.

In such cases, as specified above, the student will be considered as a provisional student in the area and will be required to pursue specific undergraduate courses in addition to his graduate requirements.

The Curriculum: This curriculum requires 15 credit hours in the general education core, 27 credit hours in the major field courses, and 3 or more elective credit hours (depending upon the needs of the student) as follows:

The Education Core (15 quarter credits required)—
Education 502—Public School Administration .....3, or
Education 503—Public School Supervision 3
Psychology 501—Descriptive Statistics .....3, or
Psychology 502—Advanced Statistics 3
Education 511—Methods of Research 3
Education 526—Philosophy of Education 3
Psychology 543—Advanced Educational Psychology 3

Field of Specialization (27 quarter credits required)—
Health 501—Materials and Methods in Health Instruction 3
Health 502—School Health Problems 3
Health 503—Communicable Disease Control 3
Physical Education 503—Camping 3
Physical Education 511—Methods of Instruction and Supervision in Physical Education 3
Physical Education 512—Thesis Writing 3
Physical Education 513—Test and Measurements in Physical Education 3
Health and Physical Education 601—Research Seminar 3
Health and Physical Education 602—Research Seminar and Project Writing 3

Electives—3 or more credit hours may be selected from the following courses:
Education 514—Principles of Teaching 3
Education 524—History of Education 3
Education 573—Problems in Audio-Visual Education 3
Education 587—Curriculum Construction 3
Physical Education 403—Individually Adapted Physical Education 3
Physical Education 413—Program Planning 3
Physical Education 481—Organization and Administration of Intramural Activities 3
Psychology 551—Emotional, Social and Mental Growth of Children 3
Special Education 467—Characteristics and Needs of the Mentally Retarded 3

Physical Education 512, Thesis Writing, is regarded as one of the most important requirements in the student's program; inasmuch as this intellectual activity is the most direct measurement of the student's ability to do original and independent investigative work, to do reflective thinging, to organize research materials, and to report both orally and in written form his findings in a formal document. The minimum standards for thesis writing are outlined elsewhere in the general requirements of the Graduate School.

Related Courses (may be chosen as Professional Electives)
Physical Education 503—Camping
Physical Education 381—Organization and Administration of Intramural Activities
Physical Education 431—Program Planning
Bacteriology 401—Applied Bacteriology
Zoology 441—Introduction to Parasitology
Health and Physical Education 401—Seminar in Health and Physical Education
Physical Education 403—Individual Phy. Education for Handicapped Students

Major-Minor Combination

Majors in graduate health and physical education are allowed to minor in related subject areas on the graduate level. The areas of general biology, zoology, social administration, education administration and supervision, psychology and physiology are suggested as appropriate areas for the selection of a minor field of concentration. A student may elect to pursue a minor field of concentration; however, he must complete a minimum of twenty-hour (24) hours in the major area requirements.

A graduate major in Health and Physical Education pursuing a Master of Arts in Education degree with a minor area of concentration must complete the following courses:

1. Health 501 ..... 3 hrs.
2. Health 502 ..... 3 hrs.
3. Health 503 ..... 3 hrs.
4. Physical Education 503 ..... 3 hrs.
5. Physical Education 511 ..... 3 hrs.

6. Physical Education 512 ..... 3 hrs.
7. Physical Education 513 ..... 3 hrs.
8. Physical Education 521 ..... 3 hrs.

Total .....24 hrs.

The 500 Level Courses Required for the Graduate Minor in Health and Physical Education (18 hours)

Health 501 Materials and Methods in Health Education (3)
Health 502 School Health Problems (3)
Health 503 Communicable Disease Control (3)
P.E. 511 Methods of Instruction and Supervision in Physical Education (3)
P.E. 513 Tests and Measurements in Physical Education (3)
P.E. 521 Current Administrative Problems in Physical Education (3)

Undergraduate Courses Approved for Graduate Credit

Health 301	Community Hygiene and Sanitation	(3)
Health 304	Family Health	(3)
HPE 401	Seminar in Health and Physical Education	(3)
HPE 402	Organization and Administration of Health and Physical Education	(3)
HPE 403	Individually Adapted Physical Education for Handicapped Children	(3)
PE 333	Principles and Philosophy of Physical Education	(3)
PE 404	Care and Prevention of Athletic Injuries	(3)
PE 412	Organization and Administration of Recreation	(3)
PE 413	Program Planning	(3)
PE 414	Organization and Administration of Camping	(3)
PE 434	Festivals and Demonstrations	(3)
PE 471	Materials and Methods in Physical Education	(3)
PE 481	Organization and Administration of Intramurals	(3)

Graduate Courses

Health 501. *Materials and Methods in Health Education.* (3) Concerned with the more progressive methods used in the teaching of health education on the elementary and secondary school levels. The use of and the evaluation of appropriate teaching aids and materials are emphasized. The course is especially designed to acquaint prospective teachers with those fundamentals necessary for discovering those health needs, interests and problems that students or pupils may have. Emphasis is placed on the methods and techniques necessary for integrated and correlated teaching of health in all areas of the school curriculum as well as the utilization of health activities in schools as teaching aids. (Required of all graduate majors and minors in the Department —No graduate prerequisites.)

Health 502. *School Health Problems.* (3) Organized to acquaint the prospective teacher, the in-service teacher, and the administrator with common health problems as may be found in schools. Special attention is given to the problems potentially inherent in a school's environment and in the utilization of and administration of school health services. There is discussion given to the protective and corrective services in the school health education program with emphasis given to the teacher's role in such a program. (Required of all graduate majors and minors in the Department—No graduate prerequisites.)

Health 503. *Communicable Disease Control.* (3) Covers the etiological and epidemiological factors in communicable diseases. All types of control measures are discussed; special emphasis is given to the area of immunology. The course is primarily designed for teachers, school administrators and public health workers. (Required of all graduate majors and minors in the Department. Prerequisite: Bacteriology 401.)

HPE 512. *Thesis Seminar.* (3) Designed to assist students in the selection and adequate conduct of research problems in the area of health education or health education. Credit is given upon completion of the research problems and the submitting of the thesis. (Required of all graduate majors desirous of doing research in health and physical education—Prerequisites are Education 511—*Elements of Research* and Psychology 501, or 502.)

Physical Education 503. *Camping.* (3) Special emphasis is given to recreational activities for various age groups which would be compatible with the physical, mental and social characteristics of each group. The selecting, planning and equipping of camp sites are emphasized. Consideration is given to the planning and initiating of programs of activities for camps including nature study, first aid and safety factors, cooking and meal preparation, water sports and events, and general recreational activities. (Required of all graduate majors in the Department—No graduate prerequisites.)

Physical Education 511. *Methods of Instruction and Supervision in Physical Education.* (3) Practical methods and materials employed in the teaching of play activities, fundamental skills and athletic games are emphasized. Special attention is given to the in-service preparation of personnel. Program evaluation and improvement, facilities and equipment as well as criteria for determining their adequacy are stressed. Emphasis is placed on the working relationships of the physical educator and other personnel within the schools and in the communities. (Required of all graduate majors and minors in the Department—No graduate prerequisites.)

Physical Education 513. *Tests and Measurements in Physical Education.* (3) Designed to acquaint the student with the role of testing the measurement in a total program of physical education. The coverage of the content includes anthropometric measurements, measurements of general health status, strength, agility, and stamina indices, cardiac functioning tests, and those statistical methods used in determining motor ability and skill in physical education activities. (Required of all graduate majors and minors in the Department—Prerequisites Psychology 501 or Psychology 502 *Advanced Statistics for Research in Education and Psychology.*)

Physical Education 521.*Current Administrative Problems in Physical Education.* (3) Designed to assist teachers in the area, supervisors and administrators in solving those problems peculiar to a program of physical education. The content includes a study of philosophies in the area, policies of governing a total program which would encompass classification of students, gradration in activities, progression in teaching, evaluation of student achievement, teaching loads, time schedules, selection of teachers, evaluation of in-service teaching and teachers, marking of students, financing a program and departmental budgeting. (Required of all graduate majors in the Department—Prerequisite: P.E. 511 *Methods of Instruction and Supervision in Physical Education.*

Physical Education 523. *Community Recreation.* (3) The nature, significance and extent of recreation in a community are stressed. City, county, state, and national recreation programs and their organization are emphasized. Principles, techniques and skills needed in organizing and promoting leisure time activities for home, school and community are included in the experience. Those essential elements peculiar to all recreational programs such as leadership, areas and facilities, programs features and inclusiveness, recruiting of recreation workers and training programs for voluntary workers are covered in the content of the course. Opportunities are afforded students to experience actual recreation work and responsibility, as well as to organize and lead recreational activities. (Required of all graduate majors in the Department.)

Health and Physical Education 601. *Seminar.* (3) The current literature in health and physical education is reviewed in this course.

Health and Physical Education 602. *Project Writing.* (3) In this course, the student writes a terminal project under the supervision of the teacher of course 602.

DEPARTMENT OF PSYCHOLOGY

M. I. Claiborne, Ph.D., *Head*

The Department offers curricula leading to the Master of Arts in Education degree in Guidance and Counseling, and in Educational Psychology. The Master of Science degree is offered in General Psychology.

CURRICULUM IN GUIDANCE AND COUNSELING

F. J. D. McKinney, Ed.D., *Chairman of Graduate Studies*

The graduate program of study in Guidance and Counseling is designed for students who wish to prepare for a career in personnel work or guidance and counseling in elementary and secondary schools. The program of study includes the courses required for certification of guidance counselors in Tennessee, and in other states which certify guidance counselors on the basis of the master's degree-level training.

Since school counseling is professional work and persons who complete degree requirements are eligible for certification as guidance counselors, the department admits and retains in the program only those students who show potentiality for counseling and evidence of character suitable for serving as guidance counselors to young people.

Requirements for Admission and Retention in the Degree Program in Educational Guidance.

1. Admission to the Graduate School based on an earned bachelor degree from an accredited college with a grade point average of not less than 2.00 on a four point grading system.
2. Graduate Record Examination Advanced test in education or psychology.
3. Undergraduate major (or equivalent) in psychology, or an undergraduate major in education which includes credit for terminal courses in general psychology, human development of adolescent psychology, educational psychology, elementary statistics, psychometrics or a course in measurement, and a course in personality or human adjustment or mental hygiene. Note: Applicants for admission who do not statisfy above prerequisites must earn credit for necessary courses before pursuing graduate work in guidance or take prerequisite courses during the first quarter of enrollment. Applicants accepted in the Graduate School on provisional status must remove the provisional status during first quarter enrolled in the Guidance Curriculum.
4. To be retained in the graduate degree program in guidance, the student must: (a) maintain a minimum grade point average of 3.0, (b) exhibit potentiality for guidance and counseling, and (c) exhibit a sensibility to professional ethics and traits of character deemed suitable for school counseling.

Degree Requirements.

1. Complete a minimum of three quarters in residence and forty-five quarter hours of work as prescribed below.
2. Do five hours per week (non-credit) of supervised observation and practice in the Psycho-Educational Clinic during the first two quarters in residence, and participate in a guidance practicum (3 hours credit) during the terminal quarter in residence.
3. Complete a research problem and satisfactorily defend the same in an oral examination on subject matter and thesis.

Note: Supervised observation and practice. During the first quarter of residence as a student fully accepted in the Guidance Curriculum, the student will spend five hours a week processing freshman test scores, making individual profiles, and interpreting test scores. During the second quarter the student *shall* spend five hours a week observing and assisting staff members in individual testing of students to determine ability, aptitudes and interests, and in advising students with respect to failure, learning difficulties, change of major, etc. Visits shall be made to local high schools to observe guidance in action.

Program of Courses

Required:

Psychology 502	Advanced Statistics	3
Psychology 511	Research in Psychology	3
Psychology 525	Theories and Measurement of Personality	3
Psychology 531	Psychometrics	3
Psychology 532	Principles of Guidance	3
Psychology 535	Interviewing and Counseling	3
Psychology 536	Individual Appraisal	3

Psychology 539	Guidance Practicum	3
Psychology 512	Thesis Seminar	3

Electives: (Elect a minimum of six courses—18 credit hours)

Psychology 461	Individual Differences	3
Psychology 462*	Psychological Testing (may be substituted for Psychology 531)	3
Education 511*	Methods of Research in Education (may be substituted for Psychology 511)	3
Psychology 523	Advanced Mental Hygiene (may be substituted for Psychology 525)	3
Psychology 533	Group Dynamics	3
Psychology 534	Student Personnel Services in Secondary Schools	3
Psychology 537	Counseling Theory & Behavior Dynamics	3
Psychology 538	Occupational Information and Vocational Guidance	3
Psychology 541	Advance Social Psychology	3
Psychology 543	Advanced Educational Psychology	3
Psychology 571-72	Clinical Testing (may be substituted for Psychology 531)	6
Psychology 573-74	Clinical Psychology (may be substituted for Psychology 525)	6

Note: Psychology 571-72 and 573-74 may be elected by students who have completed an undergraduate major in psychology or who otherwise satisfy prerequisites.

CURRICULUM IN EDUCATIONAL PSYCHOLOGY

M. I. Claiborne, Ph.D., *Chairman of Graduate Studies*

The graduate program of study in educational psychology is designed for students preparing for a career in public school work, especially students preparing to teach in the elementary grades, and others who desire psychological training in areas such as growth and development, psychological measurement, and diagnosis and remedial instruction, as a background for public school work.

Requirements for Admission to the Degree Program in Educational Psychology. The graduate program in educational psychology is treated as a major in professional education, thus, in addition to satisfying general requirements for admission to graduate study, students majoring in educational psychology should have satisfied teacher certification requirements, or should have earned 36 quarter hours of undergraduate credit in education including one or more courses in general psychology, educational psychology, human development or child or adolescent psychology and test and measurement.

Students who have not satisfied the above requirements, but who have been granted conditional admission to the department, must satisfy the requirements by taking the appropriate undergraduate course or courses before being granted regular status. Likewise, students who have earned the above undergraduate credit, but who exhibit basic deficiencies in the required undergraduate subjects may, at the discretion of the departmental staff, be required to remove the deficiencies by taking appropriate undergraduate courses before being granted regular status.

Graduate majors in educational psychology who majored in general psychology on the undergraduate level may elect the Advanced Test on the Graduate Record Examination in the field of psychology.

Required Education Core Courses (15 credit hours)

Psychology 502
Education 502
Education 526
Psychology 511
Psychology 543

Required Basic Educational Psychology Curriculum (18 credit hours)

Psychology 523
Psychology 525
Psychology 531
Psychology 545
Psychology 551
Psychology 512 (thesis)

* A student may not receive graduate credit for both Psych. 462 and Psych. 531, nor for Psych. 511 and Educ. 511.

Electives:

The remaining twelve (or more) hours may be elected in one area of concentration, namely: psychological measurement, diagnosis and remedial techniques, or guidance. Teachers in elementary or secondary schools may elect a maximum of nine credit hours in a subject area, but not in education, as a part of the twelve hours for fulfilling this requirement.

CURRICULUM IN GENERAL PSYCHOLOGY

CALVIN O. ATCHISON, Ed.D., *Chairman of Graduate Studies*

The graduate program of study in General Psychology is designed for the following students: (1) those preparing for a career in professional psychology, and thus plan further study toward the doctor's degree; (2) those preparing to work as psychometrists, school psychologists, junior or assistant psychologists in agencies or institutions, and other psychological work such as interviewing, counseling; (3) those preparing to teach psychology in junior colleges or teacher colleges; and (4) those who desire psychological training as a background for a career in psychiatry, medicine, social work, and other related professions.

Requirements for Admission to the Degree Program in General Psychology. In addition to general requirements for admission to graduate study, students desiring to major in general psychology should have completed an undergraduate major in psychology, or 36 quarter hours in undergraduate psychology appropriately distributed to give the student basic information and methodology in the field. In addition, and of equal importance, the undergraduate credits should include at least one year of laboratory science, mathematics, history, and sociology, and a course in philosophy, art, music appreciation. (Note: Undergraduate foreign language credits are not specifically required for admission; however, students who plan further study in psychology toward the doctor's degree, or those who plan research in Psychology should recognize that a reading knowledge of French and/or German is a necessity.)

Students who have not satisfied the above requirements, but who have been granted conditional admission to the department, must satisfy the requirements by taking the appropriate undergraduate courses before being granted regular status. Likewise, students who have earned the required undergraduate credit, but who exhibit basic deficiencies in undergraduate subjects may, at the discretion of the departmental staff, be required to remove these deficiencies by taking appropriate undergraduate courses before being granted regular status.

Required Courses

Psychology 502
Psychology 505
Psychology 511
Psychology 512 (thesis)
Psychology 525
Psychology 541
Psychology 551
Psychology 571
Psychology 572
Psychology 573
Psychology 574
Psychology 575

Electives

Psychology 506-07
Psychology 523
Psychology 531
Psychology 543
Psychology 535
Psychology 481*

Graduate Courses

501. *Educational Statistics.* (3) Required of students majoring in graduate programs in which the course is specified as satisfying the requirements for a course in statistics in the core curriculum. Topics include measures of central tendency, measures of variability, tabular and graphic methods, the normal probability curve, and zero order correlation.

502. *Advanced Statistics for Research in Education and Psychology.* (3) 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. Core course, required of all graduate students majoring in education, pre-supposes a knowledge of elementary statistics.

* Psychology 481, History and Schools of Psychology, is required of students who have not taken an equivalent course.

505. *Advanced General Psychology.* (3) Basic course required for a major in general 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.

506-07. *Advanced Experimental Psychology.* (6) Experimental methods of investigation of psychological problems primarily in the areas of physiological and comparative psychology. One lecture and four laboratory periods.

511. *Research in Psychology.* (3) Deals with methods of research peculiar to psychology. Included are: type of problems of psychology, methods of collecting data, interpretation of data, and reporting of findings.

512. *Educational Psychology Thesis Seminar.* (3) 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. Required of (and limited to) Psychology majors, and to be taken in conjunction with the doing of the research project.

523. *Advanced Mental Hygiene.* (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.* (3) Deals with the theory and practice of psychological measurement. Training and practice offered in the use of individual and group measures of intelligence, achievement, aptitude and personality.

532. *Principles of Guidance.* (3) Introductory course in guidance. Survey of principles, philosophy, nature and extent of guidance services.

533. *Group Dynamics.* (3) Deals with the nature of groups and with group approach to guidance; factors in group organization, the dynamics of group interactional processes, the effect of group sanctions, and means of making group activities more effective.

534. *Student Personnel Services in Secondary Schools.* (3) Critically examines student personnel problems and services in secondary schools, and offers training in organizing and coordinating such services.

535. *Interviewing and Counseling.* (3) Offers training and practice in acquiring skill in interviewing and in counseling. Includes specific training in interviewing both pupils and parents and other adults, and in using the various methods of counseling.

536. *Individual Approval.* (3) Offers training designed to aid the student in acquiring skill in the appraisal of the individual, with attention focused on the use of the diagnostic interview, the selection, administration and interpretation of appropriate tests, and the use of the cumulative record and other background for individual appraisal.

537. *Counseling Theory and Behavior Dynamics.* (3) Designed to give the student a conceptual frame of reference for counseling by a thorough study of counseling theory and behavior dynamics, with attention focused on understanding the value systems, needs, and motivations of youth, as a basis for counseling.

538. *Occupational Information and Vocational Guidance.* (3) Designed to give information leading to a knowledge of occupations and occupational trends, and competence in evaluating and using occupational information in vocational guidance.

c. Psychology 539A Institute: *Practicum in Guidance and Counseling Able Underachievers and Other Potential Dropouts.* (3). This course is designed to offer training and practical experience in identifying and counseling able underachievers and other potential dropouts.

541. *Advanced Social Psychology.* (3) Lectures and discussions of social behavior; dynamics of group interaction is stressed.

543. *Advanced Educational Psychology.* (3) 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. (Core course, required of all students majoring in education.)

545. *Psychology of Learning.* (3) Consists of a critical examination of the theories of learning and a practical application of such theories to learning in the school situation. Required of Educational Psychology Majors.

551. *Emotional, Social, and Mental Growth of Children.* (3) A study of the emotional, social and mental growth of children from infancy to adolescence, with emphasis on the inter-relatedness of growth and the nurture necessary for growth. Observation in the college nursery school required as a part of the course. Required of Educational Psychology majors.

561. *Diagnosis and Remedial Techniques.* (3) 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 correct the difficulty. The students will be given an opportunity to work with a retarded reader.

571-72. *Clinical Testing.* (6) 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 and the WISC 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.

Psychology 595. Institute: *Vocational Choice Theory and Occupational Information,* (3). This course is designed to give the enrollee a frame of reference for vocational counseling of underachievers and other potential dropouts through an understanding of the theories of vocational choice—an awareness of the needs, the self concept, the level of aspiration, and the values of the individual as well as a measure of the individual's abilities, aptitudes and interests. Attention shall be given to occupational trends under the influence of automation, the space age population growth, manpower needs, and the training and skills needed for the various occupational areas. Some attention shall be given to "opening doors" to youth by acquainting them with many fascination occupations and opportunities with which the youth in some areas are not acquainted.

b. Psychology 596. Institute: *Identifying and Counseling Able Underachievers.* (3). This course is designed to give the enrollees an opportunity to: (1) critically examine current literature and research relating to high school underachievers and dropouts in the effort to become conscious of the seriousness of the problem, and aware of the symptoms of unrest, discouragement, dissatisfaction, waning interest, etc. which frequently precede dropping out of school; (2) discover how to use test scores, school grades, and other cumulative record data to distinguish between able underachievers and pupils of limited ability; and (3) examine school factors such as curricula, individual pupil program, teacher-pupil relationships, etc. and out-of-school factors such as home, community, and economic and social conditions which may contribute to underachieving and dropping out of school.

Department of Science Education and Geography

KENNETH F. JERKINS, Ph.D., *Head and Chairman of Graduate Studies*

CURRICULUM IN SCIENCE EDUCATION

The graduate program in science education is designed to provide experienced teachers, or those persons who have earned a bachelor's degree with a teaching major in a natural science, with further training basic to positions of increased responsibility and leadership, especially in the secondary school.

The program terminates with the awarding of the Master of Arts in Education degree in Science Education. In general, this program will include graduate work in a natural science or a combination of two areas in natural science, advanced courses in education and the teaching of science, a research project, and a thesis.

It is assumed that all majors in the program will have completed an undergraduate course of study with at least twenty-seven quarter hours in education, including practice teaching, and a major in a natural science or a combination of natural sciences with an average of 2.50 or better. A minimum of forty-eight quarter hours in natural science constitutes an undergraduate major.

If a minor is desired in science education the student must have completed an undergraduate course of study with a minimum of 36 quarter hours in one of the natural sciences and a minimum of twenty-seven quarter hours in education, including practice teaching. The student's cumulative average must be 2.50 or better for regular admission to the Department.

Fifteen credit hours must be taken in biology, chemistry, or physics, or a combination of any two; and 15 credit hours must be taken in education and science education, respectively.

A minor in science education requires a minimum of 18 graduate credit hours. Nine credit hours are required in biology, chemistry, or physics; and nine credit hours are required in science education.

Courses Required for a Major in Science Education

Science 500	No credit	Education 526	3
Science 501	3	Psychology 502	3
Science 502	3	Psychology 543	3
Science 512	3	Science Electives and Science Education Electives	21
Education 502	3		
Education 511	3		

Courses Required for a Minor in Science Education

Science 500	No Credit	Science Education Elective	3
Science 501	3	Science Electives	9
Science 502	3		

Undergraduate Courses Approved for Graduate Credits

Bacteriology 401—Applied Bacteriology	4
Biology 411—Advanced Genetics	4
Biology 411—Microtechnique	4
Zoology 411—Introduction to Parasitology	4
Zoology 483—General Entomology	4
Chemistry 440 Institute:—Fundamentals of Chemistry	4
Chemistry 441 Institute:—Elementary Analytical Chemistry	4
Chemistry 451-2-3—Modern Chemistry	9
Chemistry 462-3—Organic Qualitative Analysis	6
Mathematics 431-2-3—Mathematics for Jr. High School Teachers	9
Mathematics 434-5—Analytic Geometry and Calculus	6
Mathematics 436—Statistical Analysis	3
Mathematics 441-2-3—Introduction to Modern Mathematics	9
Physics 324—Heat and Thermodynamics	3
Physics 331-2-3—Electrical Measurements	9
Physics 412-3—Atomic and Molecular Structure	6

Physics 414—Radioactivity and Nuclear Physics 3
Physics 440 Institute:—Fundamentals of Physics 4
Physics 441 Institute:—Atomic, Molecular and Nuclear Physics 4
Science 425—Laboratory Practicum for Science Teachers 3
Science 427—Philosophy of Science 3

Graduate Courses

500. *Seminar: Current Problems in Science Teaching.* (No Credit.) Required of all graduate students in the department. Meets weekly during the summer quarter.

501. *Problems in the Teaching and Supervision of Science in Secondary Schools.* (3) The place of science in the secondary school. Objectives, curricula, recent trends, concept formation, and sequences investigated for clues as to desirable organization and supervision of a curriculum in science. Prerequisite: Teaching or supervising experience.

502. *Materials for Teaching Science.* (3) An advanced course treating the location, collection, and use of curriculum materials in science teaching. Prerequisite: Science Education 471. Three lecture periods.

505. *Problems in the Teaching of Elementary Science.* (3) This course is offered for majors in Elementary Education only. Acquaintance with educational research and other literature concerned with the teaching of elementary science. Consideration of problems related to the purpose, content, materials, activities, and evaluation in elementary science.

512. *Thesis in Science Education.* (3)

Science 517I. *Astronomy for Teachers.* (3) A general survey of astronomy and its present day importance. An introductory unit includes the nature and development of the science of astronomy, astronomical tools and methods, current applications of astronomy in our present day endeavors. Other topics include: (1) The Earth as an Astronomical Body. (2) Relationships Between the Moon and the Earth. (3) The Solar System. (4) Stars and Galaxies. (°Fall Quarter)

Science 518I. *Meterology (Weather Elements) For Teachers* (3) A general survey of the meteorological elements and their interrelationships which produce weather. The following topics are to be considered: Weather and Every Day Living. The Nature of Weather. The Atmosphere, its Character and Composition. The Meteorological Elements, their Observation, Measurement and Expression, Insolation and Air Temperature. Atmosphere Pressure and Wind. The Humidity of the Air and Related Forms of Moisture. The Lesser Disturbances. Air Masses and Fronts. Cyclonic Circulations and Storms. Interpreting the Weather Map. The Bases for Weather Forecasting. The Operation of the Weather Bureau and the Weather Station. °(Winter Quarter)

Science 519.I. *Geology for Teachers.* (3) A general survey of the composition of the earth, the geologic processes and resulting topographic features. The following topics will be considered: (1) The Development of the Science of Geology. (2) Theories Relating to the Origin of the Earth. (3) The Composition and Zonation of the Earth. (4) The Processes of Gradation and Weathering. (5) The Processes of Vulcanism and Diastrophism. (6) The Development of Landscapes. (7) Interpretation of Geologic Processes on Topographic Maps. (8) Field Geology and the Organization of the Field trip. °(Spring Quarter)

Science 521-22-23. Institute: *Modern Biology for Teachers.* (12) This three quarter course is intended to present to high school teachers of biology some of the modern concepts in the biological sciences. Where possible, the more sophisticated concepts such as Diversity, Function, Development, Adaptation, and Evolution will be related to their implementation and use in the high school biology classroom. This will be done by supplementing the lecture-discussion content with BSCS Biology (Green Version) Textbook contents, laboratory exercises, Research Investigations, and Laboratory Block(s). Other supplementary materials from BSCS; Philosophy and Rationale, Technique Films, Evaluation Devices, other Versions, and Related Programs. (The laboratory block will be selected by the staff from the following: Animal growth and Development, Plant Growth and Development, or Interdependence of Structure and Function.)

° Offered 1963-64 and every third year there after.

GRADUATE AREA OF HISTORY AND POLITICAL SCIENCE

Department of History and Political Science

ALONZO T. STEPHENS, Ph.D., *Coordinator, Head, and Chairman of Graduate Studies*

The Department offers a major concentration leading to the Master of Arts or Master of Science Degree in History.

A student may elect either to major in the American or Modern European area of History. In his hosen area he will do the greater portion of his course work and select and develop a research problem for his thesis. All majors are required to complete courses 511, 512, and 533 or 534, depending upon the area of history in which they desire to specialize. A major constitutes forty-five quarter hours in history; students may select fifteen graduate hours in another field or graduate study with approval of the Major Advisor.

A minor consists of fifteen quarter hours of regular series (not to be included are: History 511, 512, 533 or 534), selected from the offerings at the 500 course level.

Students with a bachelor's degree in the fields other than history, including a minor in history, shall take nine (9) undergraduate hours in history at the 300 or 400 level in the area he seeks specialization at the Graduate (500 courses) level. At the discretion of the Supervisor and members of the Department, an examination may be administered to determine the student's ability and potential. If the student's undergraduate average is below 3.00 quality points he shall be given a comprehensive history examination designed to recall facts, interpret data and develop topics at an accepted level of writing.

Students planning graduate work in history should have a social science major with a minimum of 36 undergraduate credits in history. Written and oral comprehensive examinations are required after a student has earned 15 quarter hours of history or before he is allowed to continue his study.

Students are required to take History 511, 533 or 534 before they are allowed to register for History 512.

Minor in Education

Student majors in History who wish to pursue minors in education must complete the education requirements for Teacher Certification before taking courses in education for graduate credit.

Undergraduate Courses Approved for Graduate Credits

331. American Colonial History (3)
371-72. Economic History of United States (6)
381-82. Civil War and Reconstruction (6)
385-6-7. Vital Topics (9)
391-92-93. Russian History (9)
401-2-3. Contemporary World History (9)
421-22-23. Diplomatic History of the United States (9)
451-52-53. Latin American History (9)
481-82-83. World Civilization (9)
491-92. The Negro in American History (6)

Students who seek a minor in history must complete fifteen quarter hours of the 500 course level. If there is a deficiency in undergraduate preparation the student must be enrolled in at least three courses listed above before he may be enrolled in courses on the 500 level.

Not to be included in this requirement are History 511, 512 or 534.

Graduate Courses

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.

521-2-3. *Regional American History.* (9) The study of problems of regions or sections of the United States with special emphasis on the South and West.

531-2. *Recent United States History.* (6) The study of contemporary problems to historical literature through an analysis of American historians and their writings. Required of all candidates for the advance degree who have selected the area of American History for specialization.

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 in the European field similar to History 533. Required of all candidates for the advanced degree who have selected the area of European History for specialization.

541-2-3. *Seminar in European History.* (9) The study of Europe in the nineteenth century, with emphasis on the cultural developments of Western Europe. Prerequisite History 301-2-3.

551-2-3. *Problems in American Constitutional History.* (9) An intensive study of selected problems relating to the origin and evolution of the principles, institutions, practices, and laws which are embodied in the American Constitutional system. Prerequisites: History 361-2-3.

571-2-3. *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 America. Prerequisites: Twenty-seven hours in History, of which nine must be in American History.

GRADUATE COURSES IN SOCIOLOGY

SHERMAN N. WEBSTER, Ed.D., *Head Department of Sociology*

COURSES FOR GRADUATES AND ADVANCED UNDERGRADUATES:

Soc. 421—*Population Problems*

Soc. 491—*History of Sociological Theory*

COURSES FOR GRADUATES:

Soc. 501—*Society.* (3) This is an advanced sociological analysis of society. It deals with the basic concepts of social behavior that are fundamental to an understanding of the structure and nature of society.

Soc. 502—*Personality and Social Adjustment.* (3) The adjustment of the individual is approached from the point of view of the cultural anthropologist and sociologist. The impace of the culture and group life upon the personality are examined.

Soc. 503—*Social Control.* (3) An examination of the agencies and methods of social control both formal and informal.

Soc. 504—*Educational Sociology.* (3) This course explores the social significance of education and the educational significance of the social process. It examines possible solutions to social problems through a knowledge of the social process. It explores the educative process as experienced by the individual in his cultural and group life.

GRADUATE AREA OF THE HUMANITIES

EARL L. SASSER, Ph.D., *Coordinator*

Major concentrations leading to the Master of Arts degree are offered respectively in English, Romance Languages, and Speech and Drama. The Master of Science is offered in Speech and Drama and in Zoology.

Department of English

C. B. LINDSAY, Ph.D., *Head and Chairman of Graduate Studies*

Students in English may qualify for the degree of Master of Arts only. A candidate for the Master of Arts degree in English must pass a foreign language examination administered by the Department of Modern Foreign Languages. A graduate student in English may take a graduate minor in education, in speech and Drama, in a foreign language, or in some other area.

CURRICULUM IN ENGLISH

Undergraduate Courses Approved for Graduate Credits

English 311	3	Literature of the Romantic Movement
English 312	3	The Victorian Era
English 331	3	Literature of the Sixteenth Century
English 332	3	Literature of the Seventeenth Century
English 333	3	Literature of the Eighteenth Century
English 393	3	Literature of Negro Life
English 401	3	The Metaphysicals
English 411	3	Shakespeare
English 412	3	Shakespeare
English 421	3	The English Novel
English 422	3	The American Novel
English 423	3	The Continental Novel
English 431	3	Milton and Bunyan
English 451	3	History of the English Language
English 452	3	Chaucer

Graduate Courses

511-512. *The English Seminar.* (6) English 511 is a course in methods and materials for the study of English language and literature. English 512 is the writing of the thesis itself.

521-522-523. *Studies in Nineteenth Century English Literature.* (9) A few of the British authors of the period covered will be studied. Each student will be required to complete one or more papers of a scholarly nature.

531-532-533. *Studies in the Development of the Novel in the United States.* (9) Research is required in some of the principal works of fiction of the United States.

541. *Studies in English Drama.* (3) Fall. The English Drama from its origin to 1642 is considered.

542. *Studies in English Drama.* (3) Winter. The English Drama from 1660 to 1800 is considered.

543. *Studies in English Drama.* (3) Spring. The English Drama from 1880 to the present is considered.

561-562-563. *Studies in Restoration and Eighteenth Century Literature.* (9) Research is conducted in British literature, 1600-1800. Topics will vary according to student interest.

572. *Grammar and Language Institute.* (3) A workshop designed to guide participants in acquiring knowledge in and experience with applying recent linguistic findings concerning the nature of language and the communication process. Special attention will be given to new developments in English grammar and their implications for instruction in the language arts.

581-582-583. *Studies in American Literature.* (9) Topics vary according to student interest.

591-592-593. *Studies in Shakespeare.* (9) Topics will vary according to student interest.

Department of Modern Foreign Languages

ALMA T. WATKINS, Ph.D., *Head and Chairman of Graduate Studies*

The Department of Modern Foreign Languages offers the Master of Arts degree in Romance Languages.

Students may elect 27 hours in French and 18 hours in Spanish or they may elect 27 hours in Spanish and 18 hours in French.

Students in Secondary Education may elect 15 hours in French or Spanish.

Undergraduate Courses Approved for Graduate Credit

French or Spanish 311-12-13. Aspects of French or Spanish Literature (9)
French or Spanish 411-12-13 (9)
French or Spanish 421-22-23 (9)
French or Spanish 441-42-43 (9)

French or Spanish 451-52-53 (9)
French 411-12. The Classical Age of French Literature (6)
French 413. Main Ideas of the Eighteenth Century (3)
French 421. Phonetics (3)
French 422-23. Advanced Grammar, Oral and Written Composition (6)
French 441-42-43. French Civilization (9)
French 451-52-53. Modern French Literature (9)
Spanish 411-12-13. Spanish Prose and Poetry of the Golden Age (9)
Spanish 421. Phonetics (3)
Spanish 422-23. Advanced Grammar, Oral and Written Composition (6)
Spanish 441-42-43. Spanish and Spanish American Civilization (9)
Spanish 451-52-53. Modern Spanish Literature (9)

Graduate Courses in French

501. *Old French.* (3) An introductory course to medieval French. The course includes reading, phonology and morphology of old texts in prose and poetry.

511-12. *Research in Thesis Writing and the Thesis.* (6) Required of all candidates for the Master's degree in French.

521-22-23. *French Literature of the Sixteenth Century.* (9) An intensive study of French Literature of the French Renaissance with emphasis on the Pleiade, Rabelais, and Montaigne.

541-42-43. *The French Novel.* (9) Consists of the origins and development of the French Novel.

551-52-53. *The French Drama.* (9) Consists of the development of the French Drama from Corneille to the present. Offered in alternate years with French 541-42-43.

Graduate Courses in Spanish

501. *Old Spanish.* (3) A study of Old Spanish language and literature. The course includes reading, phonology and morphology of old texts in prose and poetry.

511-12. *Research in Thesis Writing and the Thesis.* (6) Required of all candidates for the Master's degree in Spanish.

521-22-23. *Origins and Development of the Spanish Novel.* (9) First Quarter: The Celestina-authorship, sources and influences. Second Quarter: The Quixote. Third Quarter: The Picaresque Novel.

531-32-33. *The Modern Spanish Novel.* (9) An intensive study of modern novel beginning with Fernan Caballero.

551-52-53. *The Spanish Drama from its Origin to the Present.* (9) Research in the drama from the Medieval period to the present. Offered in alternate years with Spanish 531-32-33.

Department of Speech and Drama

T. E. Poag, Ph.D., *Head and Chairman of Graduate Studies*

Graduate work in speech and drama is designed to qualify students for the teaching of speech and drama in secondary schools, colleges, and universities, or to qualify them for positions in the professional and non-professional theatre as actors, playwrights, directors and technical directors; and in the speech area as speech correctionists. Candidates for the degree of Master of Arts or Master of Science must have had preliminary training in the areas selected for graduate work equivalent to that required in like subjects in this University (48 hours) for the Bachelor of Arts or the Bachelor of Science degree in the speech and drama areas or in closely related fields. Eighteen hours in speech and drama are required for a graduate minor. The student must have completed 18 hours or more on the undergraduate level for admission to this program. The graduate courses for the minor include: Speech 501, 503, 541, 551, 561, 581, or related courses.

The Master of Arts or Master of Science degree is offered in speech and drama. The speech and drama program includes six hours in dramatic literature; 21 hours in drama and theatre; and 18 hours in speech.

The program in speech includes 30 hours in speech and 15 hours in drama or related courses. The program in drama includes 30 hours in drama and 15 hours in speech or related courses.

Students working toward the Master of Arts degree are required to pass an examination in a modern foreign language; and pass a departmental qualifying examination at the end of thirty hours.

Students working toward the Master of Science degree in Speech and Drama are not required to take a modern foreign language, but must pass a departmental qualifying examination at the end of thirty hours.

The University provides opportunities for public presentation of the work of graduate students in dramatic interpretation, acting, directing, technical production, and playwriting. Facilities are also provided for public address, and speech and audiology.

Undergraduate Courses Approved for Graduate Credit

301. General Dramatics (3)
311-12-13. Theatre History (9)
323. Psychology of Speech (3)
361. Parliamentary Procedure (3)
371. Radio and Television Production (3)
381. Voice Science (3)
382. Anatomy and Physiology of the Vocal Mechanism (3)
383. Hearing Disorders (3)
421. Stage Design (3)
422. Stagecraft (3)
423. Stage Lighting (3)
431. Costume Design (3)
452. Advanced Public Speaking (3)
461. Public Address I (3)
462. Public Address II (3)
463. Advanced Public Discussion (3)
471. Teaching of Speech and Drama (3)
481. Audiometry and Hearing Aids (3)
482. Language Disorders and Cerebral Palsy (3)
483. Clinical Methods and Practice in Speech Pathology (3)

Graduate Courses in Speech

501. *Phonetics and Speech Training.* (3) Study of the physiological requirements for the production of American speech sounds. Application to the special needs of speech and hearing therapists, teachers, actors and other students of English pronunciation. Extensive reading, broad and narrow transcription. Prerequisite: Speech 212.

502. *Regional and Historical Phonetics.* (3) Study of American speech sounds in context of the historical development of English pronunciation. Also consideration of dialectal areas of America, variations in vowel color and consonant production. Special application for pedagogy and research investigations. Prerequisite: Speech 212 or 501.

503. *Voice Science.* (3) Consideration of aspects of the phonetic, anatomic, physiologic, and physical bases of speech. (Laboratory practice) Prerequisite: Speech 201.

504. *Speech Pathology.* (3) An extensive study of organic speech disorders. Prerequisite: Speech 201 or 213.

505. *Lip Reading.* (3) Positions and movements involved in English speech and the current methods used in teaching Lip Reading.

506. *Psychology of Speech.* (3) Basic factors in persuasion, technique of persuasion, attention, suggestion, motivation, the audience, semantic and interview. Prerequisite: Psychology 242.

507. *Anatomy and Physiology of the Vocal Mechanism.* (3) Respiration, articulation, resonance, and phonation. Practical application to speech improvement. Prerequisite: Speech 381 or 503.

508. *Hearing Disorders.* (3) Physiology and anatomy of auditory mechanism, symptomatology and pathology of hearing disorders, their surgical treatment, clinical and classroom management. Prerequisite: Speech 381 or 507.

509. *Experimental Phonetics.* (3) Study of parameters of acoustic spectra by spectrum analysis. History of experimental phonetics. Students learn to use wave analyzing equipment and to interpret acoustic information in connection with individual problems. Prerequisite: Speech 212 or 501 and consent of instructor.

511-512. *Speech and Drama Seminar.* (6) Methods of research and thesis writing in speech and drama.

513. *Research Problems.* (3) Minor and major research problems in Speech and Drama.

521. *Public Address I.* (3) A study of speech making from ancient time through the Renaissance and includes attention to the development of rhetorical theory. Prerequisite: Speech 201 or 202.

522. *Public Address II.* (3) A study of speech making from the Renaissance to the modern times and includes attention to the development of rhetorical theory. Prerequisite: Speech 201 or 202.

Speech 523—*American Public Address* (3) Study of the careers of representative American speakers in relation to basic historical issues from Colonial times to the twentieth century. Analysis and criticism of their leading speeches and debates.

Speech 524—*British Public Address* (3) Study of the careers of representative British speakers from the Renaissance to the twentieth century. Analysis and criticism of their leading speeches and debates.

Speech 525. *Contemporary Public Address* (3) Analysis and criticism of current speakers and speeches since World War II.

531. *Speech Correction.* (3) 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. Prerequisite: Speech 201 or 213.

533. *Audiometry and Hearing Aids.* (3) Theory and practice in hearing disorders, causes, and remedial training; types of cerebral palsy, causes and treatment of cerebral palsy speech. Prerequisite: Speech 213 or 531.

591. *Advanced Public Discussion.* (3) Critical evaluation of the major principles and techniques of persuasion employed in public address and informal discussion.

Subsequent additional requirements for the Master of Science degree are (1) admission to candidacy (for requirements see section on "Admission")

Graduate Courses in Drama

Drama

541. *Dramatic Structure I.* (3) A study of dramatic history and theory, with reading of respresentative tragedies.

542. *Dramatic Structure II.* (3) A study of dramatic history and theory, with reading of representative comedies.

551. *Technical Productions Stagecraft.* (3) The theory and practice of stage production; planning of small theatres, stage arrangement, problems and practice in scene construction; design, and elements of stage lighting. Prerequisite: Speech 301 or 422.

552. *History of the Theatre.* (3) A study of the development of the theatre from the Greeks to the present; its place in the history of civilization and its changing relations to social conditions. Prerequisite: Speech 311 or 341.

553. *American Drama and Theatre.* (3) A study of the American theatre and of the principle American plays, with special emphasis on the drama as an expression of national life and culture. Prerequisite: Speech 341 or 552.

561. *Advanced Play Directing.* (3) Theory and practice in the training of actors and in directing, the making of a prompt book and designing of a full length play. Prerequisite: Speech 301 or 302.

562. *Directing and producing the full length play for experimental and public production.* (3) Prerequisite: Speech 302 or 561.

571. *Playwriting I.* (3) The principles of dramatic construction and practice in the writing of the full length play. Prerequisite: Speech 303.

572. *Playwriting II.* (3) Practice in writing the one-act and full length plays for the stage with experimental and public productions. Prerequisite: Speech 303.

581. *The English Drama I.* (3) The English Drama from its origin to 1800. Prerequisite, English 213 or Speech 341.

582. *The English Drama II.* (3) The English Drama from 1660 to 1800. Prerequisite, English 213 or Speech 581.

583. *The English Drama III.* (3) The English Drama from 1800 to the present. Prerequisite: English 213 or Speech 582.

The following courses are required for the graduate speech and drama major: Speech Courses: 501, 502, 521, 591 or related courses; Drama and Theatre courses: 541, 542, 551, 561, 562 or related courses; Thesis: 511, 512; Dramatic Literature: 581, 582; Concentration in Speech and Audiology: 501, 502, 503, 504, 505, 507, 508, 509, 511, 512. The other 15 hours are in Psychology and Special Education or Speech and Drama courses.

GRADUATE AREA OF MATHEMATICS AND PHYSICAL SCIENCES

SADIE C. GASAWAY, Ph.D., *Coordinator*

The following Departments offer courses which may offer graduate credit in special programs:

CHEMISTRY

Chemistry 440. *Institute:* Fundamentals of Chemistry (4)

Chemistry 441. *Institute:* Elementary Analysis (4)

Chemistry 551-552-553-I. *Modern Chemistry.* (9) This three-quarter course is designed to extend teacher's understanding of basic concepts in general inorganic and organic chemistry. The entire course will focus upon atomic and molecular structure. Recent advancements in chemistry will be emphasized. (Offered 1964-65 and every third academic year thereafter.)

MATHEMATICS

Mathematics 472. Numerical Analysis (3)

511-512I. *Modern College Geometry.* (6) Material from the *School Mathematics Study Group* on plane and solid geometry will be integrated with the following topics: The Fundamental Framework of Plane Geometry; Loci of Plane Geometry; Fundamental Theorems of Euclidean Geometry; Similar Geometric Figures; Auxiliary Figures of the Triangle; The Harmonic Range; Solid Euclidean Geometry. (Offered 1962-63 and every third academic year thereafter)

513I. *Elementary Analysis.* (3) Material from the *School Mathematics Study Group* on elementary functions will be integrated with the following topics: The Number System; Equations and Inequalities; Functions; Limits and Derivatives; Integration; Differentiation and Integration. Prerequisite: Mathematics 511-512I.

514-5-6. *Modern Algebra.* (9) This three-quarter course is intended to present to high school teachers of mathematics some of the modern concepts and mathematical systems. Where possible, the more sophisticated concepts, mathematical systems and operations in these systems will be related to more elementary concepts, mathematical systems, and operations. (Offered 1963-64 and every third year thereafter)

Mathematics 534-535-I. *Analytic Geometry and Calculus for Teachers.* (6) A two-quarter course designed for in-service secondary school teachers. Basic theory of analytic geometry and the calculus will be developed. The development will be simultaneous and integrated. Applications and theory will be emphasized. (Offered 1964-65 and every third academic year thereafter.)

Mathematics 536-I. *Statistical Analysis for Teachers.* (3) This course is designed for in-service secondary school teachers. Basic concepts underlying descriptive and inferential statistics will be emphasized. Special attention will be given those aspects of statistics that can be taught in secondary schools. Prerequisite: Mathematics 534-535-I. (Offered 1964-65 and every third academic year thereafter.)

523 *Math. Advanced Course in Teaching of Arithmetic.* (3) A study of methods and materials used in teaching arithmetic in the elementary grades. Emphasis is placed on methods leading to mathematical understanding, methods of teaching computational skills and applications in quantitative problems of everyday living.

PHYSICS

Physics 440. *Fundamentals of Physics:* (3) A review and extension of the fundamental principles of physics, with special emphasis on the conservation principles, waves, and fields. Subject matter will be taken largely from the areas of mechanics and electricity. Four quarter hours credit. Five hours lecture and four hours laboratory per week for eight weeks.

Physics 441. *Atomic, Molecular, and Nuclear Physics:* (3) A comprehensive treatment of the background of current knowledge of atomic and molecular structure, and the radioactive properties of atoms. Attention is also given to the relationship between physical and chemical properties of matter and its atomic and molecular structure. Four quarter hours credit. Five hours lecture and four hours laboratory per week for eight weeks.

Physics 534-535-536I. *An Introduction to Modern Physics.* (9) (Formerly Physics 451-452-453). This course will be a survey of current knowledge of atomic, nuclear, molecular, and solid state physics. Elementary analyses of the bases of that current knowledge will be presented. Reviews of the fundamental ideas from classical physics will be given when necessary. A considerable portion of the course will be devoted to the solution of problems. The course will meet for four hours per week during the academic year. Approximately half of this time will be spent in the laboratory, and half in lecture-demonstration and recitation. (Offered 1962-63 and every third academic year thereafter.)

GRADUATE AREA IN VOCATIONAL EDUCATION

HENRY L. TAYLOR, Ph.D., *Coordinator, Head and Chairman of Graduate Studies*

A major in Agricultural Education leading to the Master of Science degree is offered in this area. A minimum of 45 graduate credit hours is required.

Department of Agricultural Education

The required 45 credit hours are distributed as follows:

Agricultural Education	15 hours
Education Core	15 hours
Animal or Plant Science or Agri. Econ.	15 hours

The education core consists of the following courses:

Education 502 (3) School Administration.
Education 511 (3) Methods of Research.
Education 526 (3) Philosophy of Education.
Psychology 502 (3) Advanced Statistics.
Psychology 543 (3) Advanced Educational Psychology.

These courses are described in the graduate education section of this *Bulletin.*

Undergraduate Courses Approved for Graduate Credit

Agricultural Economics 301 Agricultural Marketing
Agricultural Economics 312 Marketing Methods and Problems (3)
Agricultural Economics 322 Farmers' Cooperative (3)
Agricultural Economics 401 Tabular and Graphic Presentation of Data (3)
Agricultural Economics 403 Agricultural Finance
Agricultural Economics 451-52, (6) Special Problems in Agricultural Economics Research.

Graduate Courses in Agricultural Economics

501 *Statistics.* (3) Training and skill in the methods of descriptive statistics and statistical inference. The presentation of numerical data will be emphasized.

502. *Policies and Programs in Agriculture and Business.* (3) An evaluation of policies and programs designed to solve the farm problem and promote business.

Graduate Courses in Agricultural Education

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

502. *Educational Problems in Programs of Teachers of Vocational Agriculture.* (3) A critical study of the high school curricula offerings in agriculture. Experience 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 considered.

506. *Problems of Rural Teachers.* (3) A study of transitional problems faced by rural dwellers in an attempt to stabilize and advance rural communities.

512. *Thesis Writing.* (3) Involves the actual writing of the thesis. Consideration given to form, statement of problems, collection of data, their use, and conclusions 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) Programs of vocational education in agriculture in local situations as a basis for elective program planning evaluated.

Department of Home Economics Education

M. B. ANDERSON, *Chairman of Graduate Studies*

The Department offers a curriculum leading to the Master of Arts Degree in Education in the area of Home Economics Education. Programs are designed to provide (1) advanced preparation for teaching, teacher-training, and supervision, (2) improvement in subject training and quality of leadership for high school, college, and technically trained teachers in home economics, and (3) personal enrichment in Home Economics.

Requirements for a graduate major: A student entering the program should have completed an undergraduate course of study in Vocational Home Economics. General acceptance requirements follow those stated in the Graduate Admission Policy. Students who desire to enter the graduate program but exhibit basic deficiencies in required undergraduate subjects necessary for admission are invited to remove these deficiencies by taking appropriate courses under the guidance of the graduate Home Economics faculty.

Graduate requirements consist of 30 hours in education which include major area and general education courses, and a minimum of 15 graduate credit hours in child development for a minor.

Requirements for a graduate minor in Child Development: Any student who has been accepted in the graduate major in home economics education will qualify for a minor in child development. Students who are majoring in other programs should have had at least 6 credits in the physical and biological sciences, 12 hours in the social sciences (which must include a basic course in sociology and one in psychology), and 6 hours in child development and family relationships.

Major Area—Required Courses

Evaluation in Home Economics	3	H. Ec. 502
Seminar in Home Economics	3	H. Ec. 505-6-7
Research Methods in Home Economics	3	H. Ec. 511
Thesis	3	H. Ec. 512
Tabular and Graphic Presentation of Data	3	Ag. Ec. 401
Philosophy of Education	3	Ed. 526
Advanced Education Psychology	3	Psy. 543
Total required hours	21	

Minor Area—Required Courses

(At least 9 quarter hours must be 500 level courses)

Parent Education	3	CDFR 513
Theories of Child Development	3	CDFR 514
Seminar in Child Development	3	CDFR 515
Problems in Child Development and Family Relationships	3	CDFR 516
The Pre-school Program	3	CDFR 517
Advanced Creative Activities with Children: Books, Storytime, and Pictures	3	CDFR 518

Undergraduate Courses Approved for Graduate Credit

		CDFR 466
Nursery School Organization	3	*Minor Area*
Family Relationships	3	CDFR 451
Later Periods of Childhood	3	CDFR 463
Survey of Development Throughout Adulthood	3	CDFR 464
Field Work in Child Development (required)	3	CDFR 465

Electives for the Major Area

(Select a minimum of 9 quarter hours)

Federal Relations to Vocational Education	3	Ag. Ed. 501
School Administration	3	Ed. 502
Advanced Educational Statistics	3	Psy. 502
Current Trends in Home Economics	3	H. Ec. 501
Supervision of Student Teaching in Home Economics	3	H. Ec. 503
Curriculum Laboratory in Home Economics	3	H. Ec. 504
Home Economics Instruction at the College Level	3	H. Ec. 508
Demonstrations in Foods	3	Fds. 509
Special Problems in Clothing and Textiles	3	C. & T. 510
Parent Education	3	CDFR 513

Graduate Courses in Home Economics

H. Ec. 504 ———Current Trends in Home Economics (3) Opportunity for home economists to study newer developments in education. Planned for teachers who have had experience in teaching home economics.

H. Ec. 502 ———Evaluation in Home Economics (3) Deals with the selection and construction of evaluation devices and the use of findings from these devices in program planning and revision.

H. Ec. 503 ———Supervision of Student Teachers in Home Economics (3) Conferences, objectives, techniques and organization of supervised programs of home economics in secondary schools are stressed. Attention is given to practical teaching materials and devices for class work and to the introduction of student teachers into teaching responsibilities.

H. Ec. 504 ———Curriculum Laboratory in Home Economics (3) A laboratory course in problems of curriculum building involving individual problems in this field. Frequent individual and group conferences are held. Planned for teachers who have had experience in teaching home economics.

H. Ec. 505-6-7 ———Seminar in Home Economics (3) Opportunity for reading, reporting and discussing recent findings in relation to selected topics and developments in education for family living. One hour credit each quarter. One 2 hour meeting per week.

H. Ec. 508 ———Home Economics Instruction at the College Level (3) Methods of selection and presentation of subject matter suitable for college instruction in home economics. Planned for prospective home economics college teachers.

Fds. 509 ———Demonstrations in Foods (3) This course includes instruction in the technique of food demonstrations and in planning and giving demonstrations for different groups.

C&T 510 ———Special Problems in Clothing and Textiles (3) Problems of particular interest to the student may be selected for advanced study.

H. Ec. 511 ———Research Methods in Home Economics (3) Emphasis is placed on types of problems, methods of collecting data, interpretation of data, and reporting of findings peculiar to areas in home economics. Prerequisite: One course in statistics.

Graduate Courses in Child Development

CDFR 515 ———Parent Education (3) A study of types of approaches. experiences, and programs which can be used effectively to help parents in working constructively toward parent-child relations. Planned for mature students with some experience in the field of child development and family relationships.

CDFR 514 ———Theories of Child Development (3) Study of the historical background of major theories concerning child development and behavior and their application. Prerequisite: Nine hours child development and psychology.

CDFR 515 ———Seminar in Child Development (3) Opportunity for reading and reporting on recent findings in child development. Prerequisites: Six credits in child development, education, or child psychology.

CDFR 516 ———Problems in Child Development and Family Relationships (3) Problems involve individual research in library, laboratory, or field projects.

CDFR 517 ———The Pre-school Program (3) A study of historical development, objectives and philosophy; emphasizes the present position and future development. Prerequisite: Six hours child development, psychology, and education.

CDFR 518 ———Advanced Creative Activities with Children: Books, Storytime, & Pictures (3) An examination and evaluation of books, stories, pictures and filmstrips for preschool age children. Practice in writing and telling stories. Prerequisite: Six hours child development.

Department of Industrial Education

WILLIAM V. HARPER, M.S., *Chairman of Graduate Studies*

Graduate students majoring in Secondary School Instruction who have completed undergraduate majors or minors in industrial education may select two of the following courses for graduate credit:

Industrial Education 401. *Industrial Arts Design.* (3)

Industrial Education 412-13. *Job Analysis.* (3)

Industrial Education 431. *Curriculum Building in Trade and Industrial Subjects* (3)

Industrial Education 435-36. *Problems in Trade and Industrial Teaching.* (3)

THE HONORS PROGRAM

JACK O'NEILL, M.A., *Director*

Beginning with the 1964-1965 academic year the University offered a program for its freshmen with exceptional abilities. The purposes of the program are:

1. To stimulate students of exceptional abilities and enable them to perform in keeping with their potentials.
2. To give proper guidance to students with exceptional abilities.
3. To develop an academic climate that will stimulate all students at the University to perform to their intellectual capacity.

Freshmen ranking in the 90th percentile on the Placement Test are invited to enroll in a maximum of two honors courses. Honors courses will be offered in the following subjects: Biology, Chemistry, English, History, Mathematics, and Sociology.

Participants in honors courses will attend a weekly colloquium.

Sophomore–level honors courses will be offered beginning with the 1965-66 academic year. Honors courses will be offered in the following areas: Humanities (Art, Music and Philosophy) Education and Psychology; World Literature; American History; Physics.

Departmental honors courses for majors will be offered as a part of the upper division program. These courses will be offered beginning with the 1966-67 academic year.

Honors Courses

181-2 *Honors Colloquium.* (6) Lectures, discussions and student writing based on central theme, "Changing Concepts of the Nature of Man"; original work, and interpretations and adaptations of original works are bases for discussions. The course is interdisciplinary and hence requires two to three instructors, one each from the natural sciences, the humanities and/or the social sciences.

181-2-3H. *Honors Animal Biology.* (12) A course designed for students of exceptional caliber. Emphasis is placed on individual critical and original thinking based on recent research findings dealing with animal biologic principles. As such the student will be expected to do extensive reading of literature, make special reports and participate in guided discussions. Laboratory problems are so designed as to challenge the ingenuity and creativity of the student. Three lectures and two laboratory periods.

181H, 182H. *Honors Chemistry.* (8) An elementary study of the fundamental laws and theories of chemistry and of the descriptive chemistry of important elements and compounds. Two lectures, one recitation, two two-hour laboratory periods per week, and additional reading from original literature.

183H. *Honors Chemistry.* (4) A study of the principles underlying ionic equilibria in solutions and a laboratory study of the separation and identification of the common cations and anions. Two lectures, two two-hour laboratory periods per week, and additional readings from original literature. Prerequisites: Chemistry 181H-182H.

181H-2-3. *Honors Mathematics.* (9) Freshman mathematics at an accelerated pace. Algebra, trigonometry and analytic geometry from the modern point of view. The course terminates with a brief introduction to differential and integral calculus.

181H-2-3. *Honors English.* (9) An Honors Course in Freshman English designed for students with special competence in English to work at an advanced level. Class enrollment is limited and restricted to students notified as having qualified for the English Honors section.

281-282-283H. *Honors World Literature.* (9) An Honors Course in World Literature designed for students with special interest and aptitude in literary studies at an advanced level. Class enrollment is limited and restricted to students who have been selected for inclusion in the Honors Section of World Literature.

181H. *Honors History.* (3) The Course of Civilizations: Classical Age of Greece and Rome: Fertile Crescent, Egypt, India. An intensive investigation of the development of man from the dawn of history to the modern period. Advanced scholastic students (top percentile) will engage in intensive and extensive study of the social, intellectual, economic, geographical, and political developments of man to the classical civilizations of Greece and Rome.

182H. *Honors History.* (3) The Course of Civilization: The Early Middle Ages. Later Middle Ages—Man's development in Asia, Europe, Mediterrean, African and the Middle East and the Western Hemisphere.

183H. *Honors History.* (3) The Course of Civilizations: Renaissance and Reformation, Absolutism, Rationalism, Commercialism, Nationalism, Industrialism. Democracy and the Age of Total War and Revolution to the Present.

181H-2-3. *Honors Social Sciences.* (9) This course is designed to acquaint the student with the many facets of the Social Sciences including the evolution of man's culture from both the Anthropological and Sociological viewpoint. A comparative study of primitive and contemporary ways of life of the various groups of mankind throughout the world; projections into the future relative to the different philosophies and idealogies and their effect on the technological advancements of the peoples of the world.

281H. *Honors American History.* (3) An intensive and extensive investigation of the history of the United States for high performance young people, the voters, lawmakers and potential leaders who may seek higher professional training. The emphasis is upon man and his ideas and ideals and issues and personalities—and how they met responsibilities and challenges in their time and for posterity. The following topics are to be considered: (L) A new nation is born; (2) The United States Establishes itself at home and abroad; (3) Nationalism, Sectionalism and Jacosonian Democracy.

282H. *Honors American History.* (3) Topics Considered: (1) Expansion and Slavery lead to the Civil War; (2) The United States Shapes its Future; (3) The United States Takes its Place Among the Nations of the World.

283H. *Honors American History.* (3) Topics Considered. (1) World War I and Its Aftermath; (2) Franklin Roosevelt faces a Crisis at Home and Abroad. (3) Can the United States Point to a Better World Order?; (4) The United Nations, 1945-1965; (5) An Introduction to the History of Africa, India, Southeast Asia, and Far East and America's response to and challenge in these areas; (6) The Age of Kennedy, Johnson, and Goldwater.

281H. *Honors Foundations of Education* (3) This course is designed to challenge the abilities of exceptional students toward a clear understanding of the historical, philosophical and sociological aspects of education and how these areas of education have relevancy to the work of contemporary schools. The method will include presentation of basic theoretical and methodological principles essential to the investigation and solution of education problems. Emphasis will be placed on aiding and encouraging creative thinking.

282H. *Human Development.* (3) A contemporary approach to the important processes of human development as viewed chronologically from infancy through senescence. The student will pursue a case study approach in analyzing the various stages of growth and development. Emphasis will be placed upon an interdisciplinary approach within the developmental process. Individual interest projects coordinated with existing research data will be an integral part of the course content.

283H. *Honors Psychology of Learning.* (3) Development of an overall knowledge of learning theories and theorists through the use of leading research studies. Students will be given the opportunity to become familiar with an interdisciplinary approach by examining materials in related fields such as cultural anthropology, psychiatry, biology, and sociology. Individual projects, seminars, and related exepriences will be provided as part of the overall learning process.

281H. *Honors Art Appreciation.* (3) A comprehensive survey of the Art of pre-history: Eqypt, Greece, Rome, and the Romanesque and Gothic periods; the Art of the Renaissance; Baroque and Rococo periods. Emphasis on comparing these periods historically as well as stylistically. Three lectures, three quarter hours credit.

282H. *Honors Music Appreciation.* (3) A study of basic materials of music; analysis of masterpieces of music with reference to cultural, social, and economic life of the times; group attendance of concerts and recitals with preliminary discussion periods. Three lectures, three quarter hours credit.

283H. *Honors Philosophy.* (3) The course covers a wide range of readings which include selections from the philosophical "greats" of the past and the more recent representatives of traditional systems or types of philosophy. It assumes independent work of a critical and analytic nature with source material, periodic reports and the preparation of an honors paper.

SCHOOL OF AGRICULTURE AND HOME ECONOMICS

DAVID A. HAMILTON, Dean

FACULTY:

Department of Agricultural Education

David A. Hamilton, and Henry L. Taylor.

Department of Animal Science

Ozie L. Adams, Arthur B. Davis, Walter S. Davis, Edward G. High, I. Miller, Roland Norman, W. E. Officer, Frederick D. Smith, Early J. Thornton, R. G. Seals, Theodore H. Wood, H. R. Wheaton, and E. Williams.

Department of Plant Science

Hazo W. Carter, H. C. Hardy, Neal McAlpin, and Fred E. Westbrook.

Department of Home Economics

Mabel B. Anderson, Dorothy Coley, Augustine S. Dartis, Mattye C. Flowers, Geraldine B. Fort, Luther Franklin, Mary H. Greer, Ruth A. McDowell, Cathryn B. McKinney, Miriam L. McTeer, Lillie B. Redmond, Marylouise Ritter, and Miriam G. Towns.

SCHOOL OF AGRICULTURE AND HOME ECONOMICS

DAVID A. HAMILTON, Ph.D., *Dean*

The School accepts the aims of the University in striving to meet the needs, ideals and aspirations of its students. It accepts the responsibility of directing them in the various areas of the School and the University for instruction in the hope that a greater knowledge and understanding of human and natural resources will be obtained so that the individual, the State and the nation will be benefitted.

The School recognizes that the home and family life are fundamental and primary to the individual and to the survival of our economic structure. Therefore, the School's philosophy recognizes and accepts the responsibility for preparing people for homemaking and the maintenance of better homes; for producing and processing more and better agricultural products; for intelligent and respectful participation in the democratic life of the community and the State.

Instruction is offered in the several general and specialized fields of agriculture and home economics. The curricula provide training for students who desire:

(1) to teach vocational agriculture and home economics;
(2) to engage in agriculture and home economics extension;
(3) to pursue specialized careers in agriculture and home economics.

The bachelor of science degree is offered in Agricultural Education, Animal Science, Biochemistry, Foods and Nutrition, Home Economics Education, Child Development, Clothing and Textiles, Agronomy and Horticulture. A minimum of 198 quarter hours with a minimum average grade of "C" (2.00) is required for graduation, with not less than 66 quarter hours in 300 and 400 level courses.

The master of science degree is offered in Agricultural Education, Animal Science and Plant Science.

CURRICULUM IN AGRICULTURE

Freshman Course & Number	F	W	S
Agriculture 111, 112, 113	1	1	1
Air Science 151, 152, 153	1	1	1
Animal Husbandry 101, 102, 103	3	3	3
Chemistry 111, 112, 113	4	4	4
English 101, 102, 113	3	3	3
*Math 111, 112, 113	3	3	3
Physical Education 11, 12, 13	1	1	1
	16	16	16

Sophomore Course & Number	F	W	S
Agricultural Economics 201	3		
**Agronomy 201, 202	3	3	
Art 133		3	
English 211, 212, 213	3	3	3
Horticulture 101, 102, 103	3	3	3
Poultry Husbandry 201, 202	3	3	
Psychology 242			3
Education 201			3
Air Science 251, 252, 253	1	1	1
Physical Education 20's, 50's	1	1	1
*Electives			3
	17	17	17

Courses in Agriculture

Undergraduate

111-12-13. *Agricultural Orientation.* (3) Designed to orient freshmen in agriculture to the life of the University and into the field of agriculture. Required of freshmen. One lecture.

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* Biochemistry 161-2-3.
** Animal Science, Plant Science, Agronomy 203, 213, Biology 101-2, P. H. 203 instead of Art, Education and Psychology.

DEPARTMENT OF AGRICULTURAL EDUCATION

HENRY L. TAYLOR, Ph.D., *Head*

The Department of Agricultural Education is designed primarily to prepare students to teach vocational agriculture in secondary schools of Tennessee. Students may major in this department without taking the prescribed courses for teacher education. Such students must complete a minimum of 198 quarter hours of credit. The general curriculum for freshmen and sophomores in Agriculture will serve as a basic guide for such majors. Changes in the junior and senior years will be made in accordance with the needs of the students.

To qualify for teaching vocational agriculture in Tennessee, a student must complete 201 quarter hours including all required courses with 21 quarter hours in Agricultural Education and 27 hours in education and psychology. For a minor in Agricultural Education a student must complete 18 quarter hours in the subject. The degrees of bachelor of science and master of science are offered in this department.

CURRICULUM IN AGRICULTURAL EDUCATION

All freshmen and sophomore students take courses outlined in the general curriculum for freshmen and sophomores.

Junior Year	*Quarter Hours Credit*			*Senior Year*	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*	*Name of Course*	*I*	*II*	*III*
Agricultural Economics 301, 302	3	3		Agronomy 401	3		
Agricultural Engineering 202, 302		3	3	Psychology 463	3		
Health 151	3			Agricultural Economics 403			3
Poultry Husbandry 302		3		Agricultural Education 371a, 371c, 472,		15	
Horticulture 363			3	Agricultural Engr. 303			3
Psychology 243		3		Animal Husbandry 401, 403	3		3
Education 301	3			Education 462	3		
Music 131			3	Agricultural Education 371	3		
Sociology 211, 212, 213	3	3	3	Political Science 221			3
Psychology 312		3		Effective (Technical Agriculture)			3
Animal Husbandry 311	3			Agric. Educ. 450	3		3
Education 387			3				
Ed. 471, Ag. Ed. 302	3		3				
	18	18	18		18	15	18

COURSES IN AGRICULTURAL EDUCATION

302 *Teaching Agriculture in the Secondary Schools.* (3) A study of the factors to be considered in determining what to teach and how to teach students enrolled in vocational agriculture classes including farm mechanics.

371a (401) *Survey and Analysis of Community Agriculture Problems.* (3) A study and analysis of current problems affecting farmers and prospective farmers in selected communities. Such problems will serve as a basis for planning teaching units and supervised farm visits in vocational agriculture. Field work is required.

371b (402) *Material and Methods in Special Rural Education.* (3) A study of the factors which must be considered in determining what to teach and how to teach out-of-school rural youth and adults.

371c (412) *Planning Programs of Vocational Education in Agriculture.* (3) A study of the principles and practices involved in organizing and developing an annual and long-time program of work. Special attention is given to each major phase of vocational education in agriculture, with emphasis placed on ways and means of solving problems encountered by farmers and prospective farmers of given communities. Field work is required.

472 (422) *Student Teaching in Agricultural Education.* (9) A course designed to familiarize and give experience to prospective teachers of vocational agriculture in all phases of the program.

403 *Special Devices, Reports and Seminar.* (3) A study of the use of special devices to meet special situations. Reports to state and county authorities and means of carrying on publicity included.

433. *Methods of Organizing and Directing Supervised Farming Programs.* (3) Designed to give students a broad concept of planning comprehensive supervised farming programs in agriculture.

450. *Special Problems in Vocational Agriculture.* (3) A specific research problem dealing with some phase of agricultural education or other fields in agriculture.

COURSES IN AGRICULTURAL ENGINEERING

202. *Farm Mechanics.* (3) A general course in farm shop work to develop skills, 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.

302 (203) *Farm Buildings and Rural Electrification.* (3) A study of skills, judgment and resourcefulness in the construction and maintenance of farm buildings, and in the maintenance of rural electrification as it may be applied to the farm and farmstead. May include an analysis of building materials, and the development of skills involved in construction and maintenance. One lecture and two laboratory periods.

303. *Farm Power and Machinery.* (3) 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 includes a study of the construction, operation, and servicing of gas engines and tractors in the laboratory. One lecture and two laboratory periods.

COURSES IN AGRICULTURAL ECONOMICS

201 (203). *Agricultural Economics.* (3) A study of the historical perspective on present-day agriculture; adjustment of agriculture to natural and economic environment; principles of production and comparative 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) A study of 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.

311. *Farm Records and Accounts.* (3) A study of the principles and techniques involved in keeping farm records and accounts; inventory, compiling, analyzing and interpreting farm financial and operating statements. 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; marketing cost reduction. Two lectures and one laboratory period. Prerequisite: Agricultural Marketing 301.

322. *Farmers' Cooperative.* (3) A study of the 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.

323. *Land Economics.* (3) A study of the income, valuation, taxation, and classification of land with special emphasis upon the land in Tennessee. Consideration will be given to the economic principles of conservation; minerals and power resources. Two lectures and one laboratory period.

331. *Land Appraisal.* (3) A study of factors governing the utilization and price of land; the appraisal process and other factors affecting the land. Consideration will be given to deeds, mortgages, leases and project development. Two lectures and one laboratory period.

401. *Tabular and Garphic Presentation of Data.* (3) A study of 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.

402 *Agricultural Prices.* (3) Concerned with the analysis of prices and price movements of farm products and the relation of prices of farm products to other prices. Consideration given to agricultural outlook, production cycles, and price forecasts. 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.

413. *Farm Costs and Farm Labor.* (3) A study of unit costs; methods of measuring and reducing unit costs including equipment and building costs. Special attention given to farm labor and its effect upon farm organization and management as well as wages, hours, insurance and other problems. Two lectures and one laboratory period.

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.

451-52. *Special Problems in Agricultural Economics Research.* (6) A program designed to give first-hand experience to individuals who plan to engage in graduate study or governmental work. It deals with the construction of schedules; gathering, tabulating, and interpreting data. Field work is required. Prerequisite: Agricultural Economics 450.

DEPARTMENT OF ANIMAL SCIENCE

ROLAND NORMAN, Ph.D., *Head*

The department of Animal Science consists of three (3) areas of instruction, namely, Animal Husbandry, Poultry Husbandry, and Biochemistry. A curriculum is offered in each of these areas. The courses are designed to give instruction in the principles of livestock production and management, sanitation and health and processing and caring for animal products. Students are trained for the successful operation of livestock and poultry enterprises as owners, dairy farm operators, herd managers, market milk producers, extension livestock specialists, and for employment as agricultural biochemists, animal nutritionists, and other research workers.

CURRICULUM IN ANIMAL HUSBANDRY

ROLAND NORMAN, Ph.D., *Coordinator*

A major in Animal Husbandry is offered leading to the degree of bachelor of science. To satisfy the requirements for the degree, the student must complete a minimum of 198 quarter hours. Not less than 36 hours must be completed in the major field, with a minimum of 15 hours in 300 and 400 level courses. Students who desire to minor in Animal Husbandry must complete a minimum of 18 quarter hours in the department.

Work leading to the degree of master of science is also offered.

CURRICULUM IN ANIMAL HUSBANDRY

Freshman and sophomore students take courses outlined in the general curriculum for freshmen and sophomores.

Junior Year	*Quarter Hours Credit*		
Name of Course			
Chemistry 361	4		
Biochemistry 302-3		4	4
Poultry Husbandry 302			3
Biology 241	4		
Agricultural Economics 302		3	
Animal Husbandry 301-3	3		3
Animal Husbandry 311-12-13	3	3	3
Animal Husbandry 321		3	
**Electives	3	3	3
	17	16	16

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 321-322	3	3	
Agronomy 401-3	3		3
Agricultural Engineering 401	3		
Agricultural Economics 312		3	
Animal Husbandry 401-2-3	3	3	3
Animal Husbandry 450			3
Animal Husbandry 421-22-23	1	1	1
Animal Husbandry 322		3	
**Electives	4	6	6
	17	19	16

COURSES IN ANIMAL HUSBANDRY

Undergraduate

101. *Introductory Animal Husbandry.* (3) 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 of correct type of livestock in relationship to economical production and market demands. Two lectures and one laboratory period.

102. *Livestock Management.* (3) Deals with the 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.

103. *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.

211. *Introduction to the Care and Riding of Light Horses.* (3) Designed for men and women of the University who are interested in horseback riding. Elementary principles in feeding, housing, training and riding light horses given; the proper care and adjustment of riding equipment also stressed. One lecture and two laboratory periods.

301. *Sheep Production.* (3) A study of the origin, importance, distribution, methods of production, and economic value of sheep. Practice given in training, judging and grading. 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 Feedings.* (3) A study of the basic principles of feeding farm animals, feeding standards, balancing rations, composition and nutritive value of feeds. Two lectures and one laboratory period.

312. *Livestock Fitting and Judging.* (3) 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

(All electives must be taken with the approval of the major adviser.)
** Liberal Education Core.

on sanitation. Prerequisite: Biology 241. Two lectures and one laboratory period.

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

322. *Beef Cattle Production.* (3) History, development, and distribution of breeds; sources of cattle and carcass beef, production and distribution in cattle feeding, commercial and purebred breeding herds. Performance testing and S-10 Beef Cattle Programs. Two lectures and one laboratory period.

331. *Fundamentals of Dairy Manufacturing.* (3) A study of the role of the dairy manufacturing industry; dairy manufacturing processes: pasteurization, separation, homogenization; refrigeration. Prerequisites: An. Hus. 103; Chem. 111-12-13. Two lectures and one laboratory period.

401. *Market Milk.* (3) A study of the procurement, processing and sale of milk and the bacteriological, chemical and physical aspects of market milk processing, Prerequisites: A. H. 103. Two lectures and one laboratory period.

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

403. *Dairy Farm Operations.* (3) A study of general 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.

413. *Judging Dairy Products.* A study of the standards and grades of dairy products and extensive practice in judging milk and dairy products. One lecture and two laboratory periods.

421-22-23. *Seminar.* (3) Devoted to discussions of current literature and problems in animal husbandry. Required of seniors majoring in the department. One hour credit each quarter. One lecture.

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

BIOCHEMISTRY CURRICULUM

(Agricultural and Biological Chemistry)

192 Quarter Hours

The curriculum in Biochemistry has the following threefold objective: (1) to offer courses for students in the several departments of the School of Agriculture and Home Economics, whose programs of study require such training; (2) to implement a program of training for students who wish to lay a foundation for and concentrate their major study in the field of biochemistry and nutrition; and (3) to provide instruction in the fundamentals of biochemistry for students in other departments of the University.

Students pursuing this curriculum must complete a minimum of 192 quarter hours for the bachelor of science degree, of which not less than 66 quarter hours must be in 300 and 400 level courses. A minimum of 52 hours must be completed in chemistry and biochemistry with a minimum of 15 hours in the 300 and 400 level courses. Students following this curriculum should select a minor consisting of a combination of courses above the 100 level from related fields of agriculture and the biological sciences, comprising not less than 18 hours approved by the major adviser.

Students completing requirements for the bachelor of science degree with concentration in biochemistry and nutrition, should plan to pursue graduate study at least to the master's degree. This additional training will prepare one for employment in laboratories of federal and state departments of agriculture, in agricultural experiment stations, with meat packing and food processing companies and with other industries of this sort that employ technically trained staffs for control and research work.

Students who pursue this curriculum must arrange with their major adviser to take in the freshman year either Mathematics 161-2-3, or Mathematics 111-2-3 followed by 163 in the sophomore year. They should also

arrange to take Chemistry 311-12-13 in the sophomore year to be eligible for the junior year biochemistry courses.

Freshman Year *Name of Course*	*Quarter Hours Credit* *I*	*II*	*III*	*Junior Year* *Name of Course*	*Quarter Hours Credit* *I*	*II*	*III*
Agriculture 111-2-3	1	1	1	Chemistry 211-2-3	4	4	4
Air Science 151-2-3	1	1	1	Physics 221-2-3	4	4	4
Chemistry 111-2-3	4	4	4	Biology 311	4		
English 101-2-3	3	3	3	Biochemistry 302-3		5	5
Mathematics 161-2-3 or Equivalent	5	5	5	Foreign Language	3	3	3
Physical Education 11-2-3	1	1	1	Meats 402	3		
Total—45	15	15	15	Total—51	18	16	16

Sophomore Year *Name of Course*	*Quarter Hours Credit* *I*	*II*	*III*	*Senior Year* *Name of Course*	*Quarter Hours Credit* *I*	*II*	*III*
Biology 241		4		Chemistry 481	4		
Chemistry 311-2-3	4	4	4	Biochemistry 402-3		3	3
English 211-2-3	3	3	3	Biochemistry 411	4		
Physical Education 20's—50's	1	1	1	Biochemistry 450			3
Air Science 251-2-3	1	1	1	Biochemistry 423			1
Mathematics 261	5			Nutrition 422	3		
Agronomy 213			4	Agronomy 303			3
Electives**	3	3	3	Animal Husbandry 311		3	
				Electives (twelve hours must be 300-400 level courses	6	9	6
Total—49	17	16	16	Total—48	17	15	16

COURSES IN BIOCHEMISTRY

Undergraduate

301. *General Agricultural Biochemistry.* (4) Introduces the student to the essentials of agricultural and biological chemistry as applied to animal and crop production. Prerequisites: Chemistry 111-12-13 and General Biology or Zoology and Botany. Required of agricultural education majors. Three lectures and recitations and two laboratory periods per week.

302-3. *Fundamentals of Biochemistry.* (8) An introductory study of the chemical nature of the constituents of protoplasm. A survey of mineral and organic foods and of nutritions. Required of majors in agricultural biochemistry, animal husbandry and poultry husbandry. Elected by students in other science fields. Prerequisites: General Chemistry, Organic Chemistry, and Biology or Zoology. Three lectures and two laboratory periods per week.

312. *Quantitative Agricultural Chemistry.* (4) Deals with certain aspects of quantitative chemistry as applied to agricultural and food analysis. Prerequisites: Chemistry 111-12-13. Required of majors in agronomy and horticulture. Two lectures and two laboratory periods per week.

313. *Physiological Chemistry.* (5) Presents the fundamentals of human physiological chemistry. Required of majors in foods and nutrition. Prerequisite: Chemistry 361. Three lectures and recitations, and two laboratory periods per week.

402-3. *General Biochemistry.* (8) A comprehensive study of the chemistry and biochemistry of carbohydrates, lipids, proteins, enzymes, vitamins and minerals important in the metabolism and nutrition of animals and plants. Required of biochemistry majors. Prerequisites: Chemistry 111, 112, 113, 211 12-13, 311-12-13; Biochemistry 302-3. Three lectures and two laboratory periods per week.

** Note: Students anticipating medical school should take Biology 111, 112, and 113.

411. *Biochemical Analysis.* (4) Designed to familiarize the student with the principles and practices involved in the analysis of agricultural and food products and other biological materials. Prerequisites: Analytical and Organic Chemistry; and Biochemistry 302-3. One lecture and three laboratory periods per week.

423. *Seminar.* (1) A discussion by the students of biochemical literature understandable on the senior level. One meeting per week.

450. *Senior Project in Biochemistry.* (3) A special laboratory investigation is carried out under the direction of the instructor and the results are written up scientifically. Required of candidates for the bachelor's degree with majors in biochemistry. Hours arranged.

CURRICULUM IN POULTRY HUSBANDRY

The curriculum in Poultry has been set up to prepare students for the successful operation of poultry enterprises, either as owners or managers; for extension and research work; and for positions with the U. S. Department of Agriculture. Courses leading to the bachelor of science degree are offered.

To satisfy the requirements for a major in poultry husbandry leading to the bachelor of science degree, a student must complete a minimum of 198 quarter hours of which 61 quarter hours must be in 300-and 400-level courses. A minimum of 36 hours must be completed in poultry husbandry and closely related subjects, with not less than 15 hours in 300 and 400 courses. Eighteen hours in a minor field must also be completed. Guidance in determining courses to pursue will be provided by the student's major and minor advisers.

The poultry enterprise is equipped with laying, breeding, brooding, and nutritional study units. It has a flock of chickens of the two leading types, including four major breeds; turkeys, ducks, and geese. Modern incubators, refrigeration unit, killing and processing equipment, and a feed mixer are available for students in training. Adequate facilities are available for research in nutrition, breeding, hatch-ability, and disease. The entire laying flock is pedigree bred; sufficient record equipment and assistants in record-keeping enable the personnel to plan and carry out many demonstrations and research projects that are useful to students.

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Poultry Husbandry 302		3	
Poultry Husbandry 303			3
Poultry Husbandry 342		3	
Biology 432	4		
Chemistry 361	4		
Agricultural Economics 312		3	
Biochemistry 302-3		4	4
Electives	10	5	8
	18	18	15

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Poultry Husbandry 450			3
Poultry Husbandry 402		3	
Poultry Husbandry 403			3
Poultry Husbandry 422		3	
English 322		3	
Poultry Husbandry 301	3		
Biology 241	4		
*Electives	10	9	12
	17	18	18

COURSES IN POULTRY HUSBANDRY

201. *Principles of Poultry Production.* (3) The principles and practices underlying reproduction and growth of the domestic fowl; also the study of breeds, varieties, and types of poultry. Required of majors in Agriculture. Two lectures and one laboratory period.

* Electives chosen with approval of the adviser.

202. *Principles and Practices of Incubation and Brooding.* (3) Designed to give the environmental factors affecting incubation, embryo development, operation of incubators, and methods of brooding. Required of majors in Agriculture. Two lectures and one laboratory period.

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

301. *Poultry Management.* (3) A detailed study of all phases of farm and commercial poultry that will include buying chicks, incubation, brooding, managing the growing flock, and handling the layers. Two lectures and one laboratory period.

302. *Animal and Plant Genetics.* (3) A study of the fundamental laws of heredity and their relation to plants and animals. Two lectures and one laboratory period.

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

342. *Hatchery Management.* (3) Includes 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.

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

422. *Poultry Nutrition and Feeding.* (3) Designed to give the students the major 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 considered. Two lectures and one laboratory period.

432. *Poultry Problems.* (3) Special problems in incubation, nutrition, breeding, diseases and physiology of the bird.

This course will be offered each quarter. It is open to students in biology and nutrition.

450. *Senior Project.* (3) Junior research is conducted in some phase of poultry.

DEPARTMENT OF PLANT SCIENCE

FRED E. WESTBROOK, Ph.D., *Head*

The department of Plant Science is a service area for the School of Agriculture. Two curricula are offered with a major in Agronomy and one in Horticulture, for students who wish special training in the science of the special areas.

A major may be pursued in either area leading to the degree of bachelor of science. A minimum of 198 quarter hours is required for the bachelor of science degree. Not less than 36 hours must be completed in the curriculum of the student's choice with a minimum of 15 hours in 300 and 400 courses.

Graduate students may pursue studies in plant science leading to the master of science degree in Plant Science.

CURRICULUM IN AGRONOMY

FRED E. WESTBROOK, Ph.D., *Coordinator*

Freshman and sophomore students take courses outlined in the general curriculum for freshmen and sophomores.

Junior Year	Quarter Hours Credit			Senior Year	Quarter Hours Credit		
Name of Course	*I*	*II*	*III*	*Name of Course*	*I*	*II*	*III*
Agronomy 301-2-3 ..	3	3	3	Agronomy 301-2-3	3	3	3
Chemistry 361	4			Agri. Economics 401 ..	3		
Biochemistry 312		4		Animal Husbandry 402-3		3	3
Animal Husbandry 311			3	Agronomy 450	3		
Agri. Economics 301-2	3	3		Agronomy 411-12-13 ..	1	1	1
English 321-23	3		3	Agron. 321-2-3	3	3	3
Horticulture 343			3	Electives	6	6	6
Poultry Husbandry 302		3					
Horticulture 363		3	3				
Elective (Soc. Sci.) ..	3	3	3				
	16	19	18		19	16	16

Minor in Agronomy

Agronomy 301
Agronomy 302
Agronomy 303
Agronomy 401
Agronomy 402 or Biochemistry 312
Agronomy 403

COURSES IN AGRONOMY

201. *Field Crops.* (3) A study of the different uses of land crop characteristics, adaptation, culture and use. Two lectures and one laboratory period.

202. *Soils.*(3) An introduction to the study of the principles of soil formation, the nature and properties of soil and their relation to plants. Prerequisites: Chemistry 111-12-13. Two lectures and one laboratory period.

203. *Soil Fertility.* (3) A study of soil factors as related to soil fertility maintenance, and fertilizer practices. Two lectures and one laboratory period.

213. *General Agricultural Botany.* (4) Designed to provide a broad understanding of the fundamental facts and principles of botanical sciences. Three lectures and two laboratory periods.

301. *Sorghums and Small Grains.* (3) Deals with the distribution, culture and use of the cereal grains and their climatic adaptation. Two lectures and one laboratory period.

302. *Cotton and Tobacco.* (3) A study of the principles of cotton and tobacco culture, fertilizing, producing, grading, classifying and marketing. Two lectures and one laboratory period.

303. *Plant Physiology.* (3) Application of plant Physiological principles to seed plants with special emphasis on photosynthesis respiration absorption, transperation and nutrition. Two lectures and one laboratory period.

321. *Farm Weeds and Their Control.* (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. Elective for any department. Two lectures and one laboratory period.

322. *Plant Pathology.* (3) A study of the diseases of the most important agricultural plants of Tennessee and the South. Emphasis on the nature of the disease, recognition and control measures. Two lectures and one laboratory period.

323. *Economic Entomology.* (3) Provides a brief review of the structure, morphology, controls and the recognition of economic insects as related to agriculture. One lecture and two laboratory periods.

401. *Soil and Water Conservation and Management.* (3) A study of tillage, drainage, fertilization and rotation practices as they affect the productive capacity of field soils. One laboratory period and two lectures.

°°402. *Advanced Soil Fertility.* (3) A study dealing with the determination of nutrient deficiencies in soils and plants by rapid methods, and recommendations of corrective measures. Prerequisites: Soil Fertility 203, Chemistry 361, Biochemistry 312. Two lectures and one laboratory period.

403. *Legumes and Pastures.* (3) Provides information on the important legumes Adapted to the Climate of Tennessee, and characterizes the forage and Pasture Programs of Tennessee. Two lectures and one laboratory period.

411-12-13. *Seminar.* (3) Includes the discussion of current topics, lectures and demonstrations in Agronomy and related areas.

°°450. *Senior Project.* (3) Required of all agronomy or horticulture majors.

CURRICULUM IN HORTICULTURE

HAZO W. CARTER, Ph.D., *Coordinator*

All freshman and sophomore students take courses outlined in the General Agricultural Curriculum for freshmen and sophomores.

Junior	Quarter Hours Credit			Senior	Quater Hours Credit		
Name of Course	*I*	*II*	*III*	*Name of Course*	*I*	*II*	*III*
Horticulture 302-3 ..		3	3	Horticulture 401-3	3		3
Horticulture 331-2-3..	2	2	2	Horticulture 423			3
Horticulture 321	3			Horticulture 451	3		
Horticulture 343			3	Horticulture 450	3		
Horticulture 352		3		Biochemistry 312		4	
Horticulture 372			3	Agronomy 401-2	3	3	
Philosophy 323		?		English 321-3	3		3
Agri. Economics 312		3		Agronomy 303			3
Agronomy 323			3	Electives	3	9	6
Chemistry 361	4						
Biology 311	4						
Sociology 221-322 ..	3	3					
Political Science 313			3				
	16	17	17		18	16	18

Minor in Horticulture

Horticulture 302
Horticulture 303
Horticulture 331
Horticulture 332
Horticulture 343
Horticulture 402
Horticulture 403

COURSES IN HORTICULTURE

Undergraduate

101. *Principles of Fruit Growing.* (3) A study of the principles and practices involved in the culture of orchard plants. Two lectures and one laboratory period.

102. *Ornamental Horticulture.* (3) An elementary course of principles and practices involved in the production of flowers and ornamental plants. Two lectures and one laboratory period.

103. *Vegetable Gardening.* (3) A basic study of the principles and practices of vegetable production. Two lectures and one laboratory period.

°°302-3. *Commercial Vegetable Production.* (6) Deals with the principles and practices of commercial vegetable production and study of varieties, cultural practices, insect and disease control, grading, packing, storing and marketing. Two lectures and one laboratory period.

°°321. *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 includes visits to freezing and dehydrating plants, and canning factories. One lecture and two laoratory periods.

** Courses offered in even years only.

331-2-3. *Technical Skills in Horticulture.* (6) Aims to develop technical skills necessary for production of fruits, vegetables and ornamental plants. Required of all students majoring and/or minoring in horticulture. Two laboratory periods.

343. *Propagation of Horticultural Plants.* (3) A study of the methods of propagating horticultural plants including seedage, cuttage and grafting of both economic and ornamental plants. Two lectures and one laboratory period.

°352. *Floriculture.* (3) A course dealing with the principles underlying culture of greenhouse crops, commercial cut flowers and house plants.

363. *Forestry.* (3) A study of forest conservation and management and the relation of forestry to agriculture, including the influence of the forest on climate, streamflow and erosion. Two lectures and one laboratory period.

°°372. *Landscape Plants and Design.* (3) A study of landscape composition dealing with the designing of small lots, city property, public grounds and large estates. The use of ornamental plants such as trees, shrubs and flowers and their identification.

°°401. *Handling, Storage and Utilization of Fruits and Vegetables.* (3) The important factors in harvesting and handling fruits and vegetables that affect quality and marketability. Two lectures and one laboratory period.

°402. *Orchard and Small Fruit Culture.* (3) Deals with the study and practices in propagating, planting, pruning, cultivating, fertilizing, spraying, and thinning orchard and small fruit crops. Two lectures and one laboratory period.

°°403. *Growth and Development of Fruits and Vegetables.* (3) Deals with the factors affecting growth, development and quality of fruits and vege-

°°423. *Types and Varieties of Fruits and Vegetables.* (3) Deals with the taxonomy, origin, history, characteristics, adaptation, identification, classification, exhibition and judging of kinds and varieties of fruits and vegetables. The value of the course depends to a great extent upon gaining an acquaintance with the plant material as it grows. Two lectures and one laboratory period.

450. *Senior Project.* (3) Individual student research and presentation of a special topic or problem selected by the student and approved by the adviser. Prerequisite: Senior standing.

451. *Floral Design.* (3) A course dealing with the essentials of flower arrangement. One lecture and two laboratory periods.

453. *Turf Management.* (3) This course will deal with establishing lawns, soil preparation, seeding, watering, fertilization, clipping, and general management. Corrective measures in established lawns. Care of Golf course Greens. Two lectures and one laboratory period.

DEPARTMENT OF HOME ECONOMICS

General Information

The department of Home Economics aims to guide students in developing a sound and satisfying philosophy of life, using intelligence in solving personal and family problems, preparing for vocations, developing wholesome social relationships and enriching their general and cultural education.

The Home Economics Department is located in the Women's Building and includes the following curricula: Child Development and Family Relationships, Clothing and Textiles, Foods and Nutrition and Home Economics Education.

Students who transfer from other institutions to complete requirements for the bachelor of science degree with a major in any of the curricula of Home Economics must complete at this institution a minimum of one academic year and earn a minimum of 48 hours of credit.

Home Economics Club

The Tennessee A. and I. State University Home Economics Club is affiliated with the American Home Economics Association. Home Economics majors who are interested in professional home economics and in homemaking are encouraged to become members of the organization. Home Economics Education majors are required to participate as an integral part of their training to become advisers of the New Homemakers of America.

The major purpose of the American Home Economics Association College Club is to improve education for the profession of home economics.

The club gives a cash award annually to the member in each of the four college classes who has maintained the highest scholastic average above 3.0 for that year.

* Courses offered in odd years only.
** Courses offered in even years only.

CURRICULUM IN HOME ECONOMICS EDUCATION

MATTYE C. FLOWERS, M.S., *Coordinator*

The curriculum in Home Economics Education is designed for students who plan to teach home economics. This teacher education curriculum meets the requirements set up by the State Board of Education for the teaching of home economics in Tennessee and qualifies graduates to teach in vocational schools under the requirements of the Federal Vocational Acts.

The undergraduate major consists of 211 quarter hours, 104 of which are in the 300 and 400 series. A minimum of 103 quarter hours must be taken in home economics, 82 of which are in the 300 and 400 series.

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 101-2-3	3	3	3
Clothing 111-112	3		3
Related Art 201-203		3	3
Speech 201 or 203		3	
Foods 111-112	3	3	
Chemistry 111-112	4	4	
Home Economics 101-2-3 or 201	1	1	1
Mathematics 111-112	3		3
Music 131			3
Physical Education 11-12-13	1	1	1
	18	18	17

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Education 201	3		
English 211-12-13		3	3
Clothing 211	3		
Sociology 211		3	
Biology 241	4		
Zoology 202-203		4	4
Psychology 242-243	3	3	
Economics 211-212		3	3
Nutrition 211			3
Foods 223			3
Physical Education 20's-50's	1	1	1
	17	17	17

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Psychology 463	3		
Education 462		3	
Clothing 321	3		
Child Development 351	3		
Psychology 312	3		
Home Management 320-322-323	3	3	3
Chemistry 361	4		
Home Economics Education 371A-371B		3	3
Nutrition 311		3	
Sociology 322		3	
Philosophy 323		3	
Electives			12
	19	18	18

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Home Furnishings 400	3		
Child Development 452	3		
Family Relationships 463			3
Home Management 421-422			7
Home Economics Education 450	3		
Home Economics Education 471		3	
Home Economics Education 472		12	
Foods 431			3
Related Art 421	3		
Electives	6		6
	18	15	19

COURSES IN HOME ECONOMICS EDUCATION

101-2-3. *Orientation.* (3) A course required of all freshmen registered in the Department of Home Economics. Designed to orient the student into the field of home economics and to the life of the University, to give an appreciation of home economics as both a general and a professional education field, and to acquaint him with opportunities for study and employment in the various areas within the field of home economics. One lecture. One hour credit per quarter.

201. *Guidance.* (3) A guidance course required of all transfer students entering above the freshman year and of all others who have not taken 101. The course is designed to acquaint students with professional opportunities, courses and requirements in the various fields of Home Economics. Three lectures.

371A. *Methods of Teaching Home Economics.* (3) Emphasis is placed on the organization and administration of the entire school and the place of home economics within the school organization, the vocational homemaking program, the Federal Vocational Acts and introduction to the teaching of home economics in all-day, part-time and adult classes. This course should be scheduled within three quarters preceding the quarter in which student teaching is scheduled. Three lectures.

371B. *Materials and Testing Aids.* (3) Opportunity is provided for experimentation and operation of different types of teaching aids and procedures. Attention is given to the use of films, recordings, tackboards, radio and television. Consideration is also given to the place of demonstration, discussion, field trips, home experiences and club work in the teaching of home economics. Prerequisite: 471A. Three lectures.

450. *Senior Project Writing.* (3) Designed to give students opportunity to select and develop problems of their choice in the area of home economics. A requirement for graduation.

471. *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 is given to the part the curriculum plays in vitalizing the community and to the underlying principles involved. Three lectures.

472. *Observation and Student Teaching in Home Economics.* (12) Supervised observation and teaching in the public schools of Tennessee is provided. Problems of organization and supervision basic to induction of teachers into their profession will be stressed. Supervised teaching is done in off-campus teaching centers for a minimum of 12 weeks. Room and board while in the center will be paid by students. Prerequisites: 371A, 371. Parallel: 471.

COURSES IN FAMILY ECONOMICS AND HOME MANAGEMENT

300. *Decision-Making.* (3) Designed to develop decision-making skills needed to manage effectively in today's society. Deals with the study of selected theories and research in decision-making, with special emphasis on how decisions are made. Three lectures.

320. *Household Equipment.* (3) Deals with the various types of household equipment, standard brands, their selection and care, and the study of problems concerned with the manufacture, marketing and servicing of the equipment of the home. Two lectures and one laboratory period.

322. *Family Economics.* (3) Designed to develop abilities to reason wisely, to understand and come to judicious decisions on financial problems which beset the individual or family. Special emphasis is placed on financial planning and intelligent consumer choice. Prerequisites: Economics 211 and 212. Three lectures.

323. *Family Health and Home Nursing.* (3) Designed to present the principles and practices essential for the maintenance of health and the prevention of illness in the family; some basic skills and techniques of simple nursing care in the home. Two lectures and one laboratory period.

421. *Home Management Theory.* (3) A study of the *management process* and how it can be applied to utilize most effectively the specific resources of the family. Attention is given not only to the traditional resources of money, time and energy, but also to the interests and abilities of persons. Open to all seniors. Three lectures.

422. *Home Management Residence.* (4) Designed to integrate the homemaking knowledge and abilities gained from previous courses and in other ways, and to develop awareness and some understanding of the components which make up the whole of management—such as goal defining, resource allocation and decision-making. For Senior Home Economics majors. Prerequisites: Home Management 322, 323; Child Development 351; Foods 111-112-223; *Nutrition* 311. Six weeks resident experience in Home Management House. Board and Maintenance charged at the regular rates.

424. *Management Problems In Homes.* (3) Students observe actual homes and work with a homemaker on a Management problem. Prerequisites: Home Management 322-421.

441. *Advanced Consumer Buying.* (3) Deals with advanced study of marketing problems and consumer credit. Individual problems which concern technology of buying particular types of consumer goods analyzed and surveys are made of current legislation and consumer literature. Three lectures.

CURRICULUM IN CHILD DEVELOPMENT AND FAMILY RELATIONSHIPS

RUTH A. MCDOWELL, M.Ed., *Coordinator*

The Department of Child Development and Family Relationships offers opportunities for the study of the child and his family, with a nursery school as a laboratory for providing experiences in observing and guiding young children.

This major prepares students for work with pre-school children in nursery schools day-care centers, child-care agencies, institutions or private homes.

Students who meet the requirements of the University and complete (36) quarter hours in the department of Child Development and Family Relationships may receive a Bachelor of Science degree.

CHILD DEVELOPMENT AND FAMILY RELATIONSHIPS

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Education 486	3		
Sociology 211	3		
CD&FR 321	3		
CD&FR 351	3		
Psychology 263		3	
CD&FR 352		1	
Psychology 323			3
CD&FR 322			3
Home Management 323			3
Education 481			3
Electives	3	12	3
	15	16	15

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Psychology 311	3		
Biology 311	4		
CD&FR 452	3		
CD&FR 463	3	3	
CD&FR 461		3	
CD&FR 464		3	
Sociology 452		3	
Home Management 422		4	
CD&FR 465			3
CD&FR 466			3-6
CD&FR 450			3
Electives	3	3	6
	16	19	15-18

COURSES IN CHILD DEVELOPMENT AND FAMILY RELATIONS

321. *The Child's Play Environment.* (3) A study of the role of play in the young child's development. Emphasis placed on the selection, care and use of play materials and equipment for young children. Students are able to plan activities and to construct toys. One lecture and two laboratory periods.

322. *Courtship and Marriage.* (3) A study of dating, courtship and engagement—problems evolved before marriage and their effect on the ultimate success or failure in or out of marriage. Three lectures.

332. *Creative Arts for Young Children.* (3) Observation and analysis of the young child's use of plastic materials such as clay, paint, paper, wood, sand, etc. Students use these materials as well as study their selection, use and care. Open to freshman, sophomores and non majors.

351 *The Young Child and His Family.* (3) Emphasis placed upon the individual development of various family members. Consideration 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 lectures and two laboratory periods.

352. *Nursery School Observation.* (1) Observation in nursery school along with Course 351. Required for majors only.

450. *Senior Project Writing.* A requirement of the University to be taken by every major in the department.

451. *Nursery School Organization.* (3) Organization and Administration, with emphasis on budgets, housing, equipment, program, records staff, parent cooperation, and student participation.

452. *Child Practicum.* (3) Observation and participation in the directing and guiding of young children in the nursery school. In the home and other situations. Prerequisite: CD and FR 351. One conference and four hours in Nursery School.

461. *The Growth of Children as Related to Guidance.* (3) A study of physical growth of children. Interpretation of growth norms. Factors influencing growth, such as nutrition, health and housing included. Prerequisites: CD and FR 351. Two lectures and one laboratory period.

463. *Family Relationships.* (3) Problems in family life. A study of modern family life, giving special emphasis to the activities of the home as they relate to the development of the family and its individual members. Three lectures.

464. *Later Periods of Childhood.* (3) A study of the development of the child from later preschool age through adolescence. Open to men and women of all schools. Prerequisites: CD and FR 351.

465. *Survey of Development Throughout Adulthood.* (3) Interrelation of physical, phychological, and social development from early adulthood through maturity and old age; characteristic adjustment problems in these periods of life. Prerequisites: 3 credit hours in child development and family relationships, psychology, or sociology.

466. *Internship or Fieldwork.* (3-6) Opportunity is given students to do practice work in nursery schools in the community and other agencies caring for children as well as the campus practice laboratory. Taken with approval of head of department.

CURRICULUM IN CLOTHING AND TEXTILES

GERALDINE B. FORT, M.A., *Coordinator*

The curriculum in Clothing and Textiles offers courses designed to furnish a thorough knowledge of Clothing 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. One hundred and ninety-two (192) quarter hours are required for an undergraduate major, 48 of which must be in Clothing and Textiles, (including Related Art and Home Furnishings). See the curriculum outline for specific requirements.

For a minor in Clothing and Textiles, 27 hours of credit in courses approved by the major and minor professors are required.

Freshman Year *Name of Course*	Quarter Hours Credit *I*	*II*	*III*
English 101-2-3	3	3	3
Cloth. 111-12-13	3	3	3
Chem. 111-12-13	4	4	4
Math. 111-12-13	3	3	3
Rel. Art 201-3	3		3
H. Ec. Ed. 101-2-3 or 201	1	1	1
Phy. Ed. 11-12-13	1	1	1
	18	15	18

Sophomore Year *Name of Course*	Quarter Hours Credit *I*	*II*	*III*
English 211-12-13	3	3	3
Cloth. 211-12	3	3	
Cloth. Elective			3
Psych. 221-222-263	3	3	3
°French 101-2-3 or 201-2-3	3	3	3
Foods 111-12	3	3	
Music 131 or Art 133			3
Phy. Ed. 20s & 50s	1	1	1
	16	16	16

Junior Year *Name of Course*	Quarter Hours Credit *I*	*II*	*III*
Cloth. 313-320-321	3	3	3
CD & FR 322-351	3	3	
H. Mgmt. 322			3
Philosophy 323			3
Nutrition 211	3		
Sociology 211-12-13 or °°Hist. 201-2-3	3	3	3
English 272		3	
Speech 201 or 203			3
General Electives (300-400 level)	3		3
Economics 211-12	3	3	
	18	15	18

Senior Year *Name of Course*	Quarter Hours Credit *I*	*II*	*III*
Cloth. 401-413	3		3
Sr. Proj. Writing 450		3	
Cloth. 400	3		
CD & FR 463			3
English 301-2-3 or 321-22	3	3	3
Cloth. Elective (300-400 level)		3	
General Electives (300-400 level)	6	6	3
	15	15	12

COURSES IN CLOTHING AND TEXTILES

Undergraduate

111. *Textiles.* (3) A practical consumer study of fabrics used for clothing and house furnishings including selection, use, and care. One lecture and two laboratory periods.

112. *Clothing Selection.* (3) Planned to help the freshman student meet her clothing problems. Emphasis placed on personal grooming, selection of appropriate clothing, clothing costs, commodity study of articles included in the wardrobe, and care of clothing. Open to all students. One lecture and two laboratory periods.

113. *Children's Clothing.* (3) A study of the physiological, psychological and aesthetic aspects of children's clothing. Selection, construction and care of clothing for infants and small children are chief phases. Prerequisite: Clothing 112. One lecture and two laboratory periods.

211. *Elementary Clothing Construction.* (3) Principles of clothing construction are applied to cotton, linen and synthetic fabrics. Use and care of sewing machines, sewing skills, and wardrobe inventory included. Open to all students. One lecture and two laboratory periods.

212. *Intermediate Clothing Construction.* (3) Principles of clothing construction are applied to synthetic and blended fabrics. Use of commercial patterns, principles of fitting and the use and care of sewing machines included. Prerequisites: Clothing 112. One lecture and two laboratory periods.

301. *History of Costume.* (3) The history of costume from ancient times to the present and the influence of social and economic conditions upon costume. Open to all students. One lecture and one laboratory period.

* Determined by high school record.
** To be taken if not on high school record.

302. *Clothing of the Family.* (3) 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 is included. Open to all students. Two laboratory periods.

312. *Applied Dress Design.* (3) Features the application of decorative design in clothing construction, pattern adaptation, and originality. Prerequisite: Related Art 203. One lecture and two laboratory periods.

313. *Renovation.* (3) Includes restyling, reconstruction, reclaiming, and repairing outmoded and discarded clothing and accessories. Open to all students. One lecture and two laboratory periods.

320. *Needle Craft.* (3) A study of the fundamental techniques of knitting, crocheting, embroidery and lacemaking. Open to all students. One lecture and two laboratory periods.

321. *Advanced Clothing.* (3) Deals with advanced construction methods. Emphasis placed on selection, construction and care of woolen garments. Prerequisite: Examination in construction skills. Juniors and seniors only. One lecture and two laboratory periods.

322. *Flat Pattern Adaptation.* (3) A study of the principles and techniques of flat pattern design with application of these principles to commercial pattern alteration. The development of original designs emphasized. One recitation and two laboratory periods.

400. *General Home Furnishings and Interior Decoration.* (3) A general course in home furnishings and decorating designed to give basic principles and show how to use these principles in achieving results that are functional, beautiful, individual and personally satisfying. It provides opportunities for understanding the influences which housing has on the emotional and social development of family members and family life. The subject matter and laboratory activities are presented in the natural sequence for decorating a home, starting with color and continuing with furniture, fabric, accessories and arrangement.

401. *Problems in Clothing and Textiles.* (3) Special problems in the details of clothing construction, selection and textiles selected and solved by the students. Also problems met in student teaching reviewed. Newer trends in clothing construction emphasized. Prerequisites: Clothing 211, 212. One lecture and two laboratory periods.

413. *Dress Design and Draping.* A course in dress design with emphasis on originality and draping. Opportunity given to investigate sources of design and to practice various methods of designing. Prerequisites: Clothing 321. One lecture and two laboratory periods.

450. *Senior Project Writing.* (3) (With or without credit.)

CURRICULUM IN FOODS AND NUTRITION

MIRIAM M. ABERNATHY, Ph.D., *Coordinator*

The objectives of the curriculum in Foods and Nutrition are threefold: 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 curriculum in Foods and Nutrition leads to the degree of bachelor of science or bachelor of arts in Foods and Nutrition. The undergraduate major consists of a total of 202 quarter hours, 67 of which are courses in the 300 and 400 series. A minimum of 39 quarter hours must be taken in Foods and Nutrition, 15 of which must be taken in the 300-400 series.

Foods and Institutional Management	21 hours	Chemistry	16 hours
Nutrition	18 hours	Inorganic 12	
Clothing	9 hours	Organic 4	
Home Management	4 hours	Human Physiology	8 hours
Child Development	3 hours	Biochemistry (Physiological)	5 hours
		Mathematics	9 hours
		Bacteriology	4 hours

Students desiring the degree of bachelor of arts must elect to take the required years of a modern foreign language as specified under requirements for the bachelor of arts degree.

The curriculum below meets the requirements of the American Dietetic Association for entrance into an approved dietetic internship. It also meets the requirements of the liberal education core for students majoring in non-teaching fields.

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 101-102-103	3	3	3
Home Economics Education 101-102-103 or 201	1	1	1
Clothing 111			3
Foods 111-112	3	3	
Chemistry 111-112-113	4	4	4
Math. 111-112-113	3	3	3
Physical Ed. 11-12-13	1	1	1
	15	15	15

Sophomore Year	*Quarter Hours-Credit*		
Name of Course	*I*	*II*	*III*
English 211-212-213	3	3	3
Zoology 202-203		4	4
Clothing 112	3		
Clothing 211 or 313			3
Bacteriology 241	4		
Psychology 221-242-243	3	3	3
Nutrition 211			3
Foods 223	3		
Education 201		3	
Education 201		3	
Art 133 or Music 131		3	
Physical Ed. 20's-50's	1	1	1
	17	17	17

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Related Art 201-203	3		3
Speech 201-202	3	3	
History 201		3	
Foods 311		3	
Foods 312			3
Nutrition 311	3		
Biochemistry 313			5
Child Development 351	3		
Accounting 211-212	3		
Economics 211-212		3	3
Home Economics Education 371A-371B		3	3
Chemistry 361	4		
	19	15	17

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Nutrition 411	3		
Sociology 322			3
Foods 313	3		
Foods 321		3	
Foods 352			3
Foods 452	3		
Foods 412		3	3
Nutrition 433		3	
Nutrition 453		3	
Nutrition 450	3		
Business Adm. 423	3		
Philosophy 323	3		
Home Management 422			4
Electives		6	6
	18	18	19

COURSES IN FOODS AND NUTRITION

Foods

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

223. *Meal Management.* (3) The planning, preparation and service of nutritious, attractive meals, with emphasis on the conservation of time, energy and money. One lecture and two laboratory periods.

311. *Science Related to Cookery.* (3) A study of the principles underlying the theoretical and practical aspects of food preparation. One lecture and two laboratory periods.

312. *Experimental Cookery.* (3) 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 lecture and two laboratory periods.

313. *Institutional Equipment.* (3) Includes study of the kinds, selection, care, cost and maintenance of individual pieces of equipment and their use and labor-saving devices in food service organizations.

321. *Food Preservation.* (3) A study of the planning and preserving of an adequate food supply for the year for the urban and the farm family. Laboratory work is done in various methods of food preservation. One lecture and two laboratory periods. Prerequisites: Foods 111-112.

352. *Food Demonstration.* (3) A study of the principles and techniques involved in foods, nutrition and equipment as applied to the needs of extension, business, classroom and community teaching. One lecture and two laboratory periods.

412. *Quantity Cookery.* (3) Deals with the problems of lunchrooms, 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 lecture and two three-hour laboratory periods.

431. *School Lunch.* (3) 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 of various schools.

452. *Organization and Management.* (3) Includes a study of institutional food departments, professional ethics and qualifications for managers, employment procedures, personnel schedules and financial records. It also includes menu analyses, the development of standardized recipes, schedules and standardized work procedures. One lecture and two laboratory periods.

Nutrition

211. *Elementary Nutrition.* (3) 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.

212. *Nutrition of Elementary and Secondary Teachers.* (3) A general course in elementary nutrition and 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 used in teaching children good food habits. Open to majors in other fields requiring instruction in the fundamentals of nutrition.

311. *Applied Dietetics.* (3) 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.

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 313.

433. *Child Nutrition.* (3) The study of the development of a health program for children as related to nutritive requirements and the planning of adequate dietaries. Prerequisite: Nutrition 211.

450. *Project Writing in Foods and Nutrition.* (3) Instructs the student in techniques of professional writing, literature searching and abstracting scientific material designed to assist each senior project. To be taken in the first quarter of the senior year.

453. *Nutrition and Diet Therapy.* (3) 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 311. Two lectures and one laboratory period.

SCHOOL OF ARTS AND SCIENCES

THOMAS E. POAG, Dean

Faculty:

Department of Biology

Gladys B. Adams, L. E. Burgess, James A. Campbell, Alvin C. Coleman, Hubert B. Crouch, E. Perry Crump, Dorothy S. Exum, Richard A. Hogg, Jacqueline Hunter, Rother R. Johnson, Henry Arthur Kean, John M. Mallette, James L. Martin, Wilma DeB Scarlette, Samuel R. Whitmon, and Henderson K. Wood.

Department of Chemistry

Martin Chanin, Winston C. Farrar, D. Conrad Gandy, Audrey M. Prather, Gilbert W. Senter, Doris E. Simmons, and Rudolph Woodberry.

Department of English

Leonard C. Archer, Laura M. Averitte, Alberta Barrett, Mary Carter, Helen S. Cotton, Doris M. Daniels, Erma G. Dozier, Juanita E. Horner, Robert J. Hudson, Erna J. Jackson, Alma Dunn Jones, Hinton C. Jones, Crawford W. Lindsay, Hortense D. Lloyd, Katie Miller, Tyree J. Miller, Earl L. Sasser, Maxine Y. Sawyer, Mattie B. Turner, Vesta R. Wheaton, McDonald Williams, and Rosa L. Williams.

Department of History and Political Science

William F. Butler, Edward N. Cullum, George L. Davis, Patrick J. Gilpin, Cornelius Jones, Amrit Lal, Lois H. McDougald, Thomas McDowell, Jack O'Neill, H. Leon Prather, Alonzo T. Stephens, and Raleigh A. Wilson.

Department of Mathematics and Physics

Robert O. Abernathy, Sterlin N. Adams, Rutherford H. Adkins, Alger V. Boswell, Roberta E. Dabney, Vivian J. Fielder, Sylvia F. Fussell, Pearlie M. Gasaway, Sadie C. Gasaway, Clinton E. Jones, Peter Lai, James Lawson, Nancy R. Ledet, Mary Y. Love, Theodore A. Love, Frank Orndorff, Lee H. Pennington, Annie G. Sasser, and Donald D. Savoy.

Department of Modern Foreign Languages

Wendolyn Y. Bell, Joan Elliott, Lurelia Freeman, Mary E. Johnson, Virginia S. Nyabongo, Dorothy J. Samuels and Alma T. Watkins.

Department of Science Education and Geography

Alfred J. Aubrey, Jimmuir Cotton, Lauree F. Griffin, Henry H. Hymes, William N. Jackson, Kenneth F. Jerkins, Alice C. Smith, Alfred C. Tyler, Mazie O. Tyson, and Katie J. White.

Department of Sociology

Alice D. Archer, Gladys B. Butler, Lettie S. Galloway, Mabel W. Leathers, Kendrick Marshall, Annie B. Martin, Kathleen H. Poag, Nora Lee Roy, Dorothy A. Stephens, Edward S. Temple, and Sherman N. Webster.

Department of Speech and Drama

William D. Cox, R. Goldman, Troy L. Jones, Thomas E. Poag, Granville M. Sawyer, William J. Simmons, R. Stream, Betty Van Buren, and Jamye C. Williams.

SCHOOL OF ARTS AND SCIENCES

THOMAS E. POAG, Ph.D., *Dean*

Purpose

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

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 undergraduate 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 of Arts and of Science degrees. The requirements for these degrees are satisfied normally in four years.

Types of Undergraduate Programs

Two types of undergraduate programs are offered in the School of Arts and Sciences; each leading to the Bachelor's degree. One program attempts to prepare the student for the teaching profession; the second program, for professions other than teaching.

In the teacher training program, the student selects a major field of concentration within the School of Arts and Sciences. The student then fulfills course requirements in the general curriculum pattern of: (1) general education core (60-66 quarter hours), (2) professional education core (39 quarter hours), (3) certification endorsement area (quarter hours vary) and, (4) electives (quarter hours vary). Upon successful completion of this program, the student should qualify for a secondary school teaching certificate in the State of Tennessee. The departments offering teacher certification curriculums are: Biology, Chemistry, Science Education, Mathematics, Modern Languages, Social Sciences, English, and Speech and Drama.

Several departments offer training for professions other than teaching. The purpose of these departments is to train students for successful performance as specialist in somewhat restricted fields of specialization.

General Requirements for a Bachelor's Degree

The University through the School of Arts and Sciences awards the Bachelor of Arts and Bachelor of Science degrees. All candidates for a Bachelor's degree must complete a minimum of 192 quarter hours (with a minimum average of "C") which include:

The General Education of Liberal Education courses (57 to 63 quarter hours)

A minimum of 66 quarter hours in 300 and 400 level courses

A minimum of 36 quarter hours in a subject or major field with a minimum of 15 quarter hours in 300 and 400 level courses

A minimum of 6 quarters of required health and physical education courses

A minimum of two years of basic Air Force Reserve Officers' Training Corps (men)

Nine quarter hours of English

Nine quarter hours of American history (for all students who do not present one year of American history on their high school transcripts)

A major program of studies within a department of the School

The senior year, or its equivalent (the last 48 quarter hours offered for the degree and the last nine months) in residence

The Juior English Proficiency Examination

A major program of studies within a department of the School

The senior year, or its equivalent (the last 48 quarter hours offered for the degree and the last nine months) in residence

The Junior English Proficiency Examination

A senior project

Requirements for the Bachelor of Science Degree
(Teacher Education Program)

To qualify for the Bachelor of Science degree with teaching certification, the student should complete the general requirements for a Bachelor's degree and other courses included in the following program.

1. General Education Core ..... 63 qr. hrs.
   - Communication (English 101, 102, 103) ..9 qr. hrs.
   - Health, Physical Education, Personal Development, and Home and Family Living ..9 qr. hrs.
   - Humanities .....15 qr. hrs.
     Literature (9 quarter hours)
     Two courses selected from
     Philosophy 323 or 301,
     Music 131 and Art 133
     Modern Foreign Language at or above 200-level
   - Natural Science .....12 qr. hrs.
     Biology 101, 102, 103; Chemistry 111, 112, 113;
     Natural Science 121, 122, 123; or
     Physics 211, 212, 213
   - Social Science .....12 qr. hrs.
   - Mathematics .....6 qr. hrs.
2. Professional Education Core ..... 39 qr. hrs.
3. Area of Endorsement ..... 36-54 qr. hrs.
4. Other quarter hours to total the number required by the University and the major department.

Requirements for the Bachelor of Science Degree
(Without Teacher Education)

To qualify for the Bachelor of Science degree without teacher education, the student should complete the general requirements for a Bachelor's degree and other courses included in the following program.

1. Liberal Arts Core ..... 57 qr. hrs.
   - Communication ..... 9 qr. hrs.
     English 101, 102, 103
   - Humanities .....15 qr. hrs.
     World Literature (English 211, 212, 213) and
     Two courses from Philosophy 323, Music 131,
     Art 133, Drama, and Modern Foreign Language
     above 100 level
   - Social Science .....12 qr. hrs.
     Selected from History, Sociology, Political
     Science, Geography, and Economics
   - Science .....12 qr. hrs.
     Selected from any one of the following courses:
     Biology 101, 102, 103;
     Chemistry 111, 112, 113;
     Physics 211, 212, 213 or 221, 222, 223; or
     Natural Science 121, 122, 123.
   - Mathematics ..... 9 qr. hrs.
     Selected from any three-quarter course in
     Mathematics, taken in sequence
2. Major Field Courses .....Minimum 36 qr. hrs.
3. Courses Related to the Major Field .....Courses and Quarter hours, adjusted by major department
4. Electives .....Courses and quarter hours, adjusted by major department

Requirements for the Bachelor of Arts Degree

To qualify for the Bachelor of Arts degree, the student should (1) complete the general requirements for a Bachelor's degree and other courses in the Liberal Education Core.

English 101, 102, 103	9 qr. hrs.
World Literature 211, 212, 213	9 qr. hrs.
Foreign Language (9-27 hours) (See Foreign Language requirement below)	18 qr. hrs.
Social Science	12 qr. hrs.
Natural Science	12 qr. hrs.
Mathematics	9 qr. hrs.
Philosophy, Music, Art, Drama (Combination of any two courses)	6 qr. hrs.

and (2) complete a program of studies in one of the following subjects: Biology, Chemistry, History, Mathematics, Sociology, Social Administration, Speech and Drama, English, Modern Foreign Languages, Geography, Physics, or Political Science.

Modern Language Requirement for The Bachelor of Arts Degree

The foreign language (French, German, or Spanish) requirement may be satisfied as follows:

a. Students who present no (0) units of a foreign language in high school when they enter the University are to take twenty-seven (27) quarter hours of work in a foreign language, beginning with the freshman course in that language.

b. Students who present two (2) units of a foreign language in high school and who desire to continue work in that same language may satisfy the language requirement by pursuing eighteen (18) quarter hours in that language, beginning with the sophomore course of that language.

c. Students who present four (4) units of a foreign language in high school and who desire to continue work in that language may satisfy the language requirement by pursuing nine (9) quarter hours in that language, beginning with the junior course.

d. When German is the language taken by the student, 18 quarter hours of German and nine quarter hours of another foreign language shall be required if 300-level courses in German are not offered.

Proficiency Test in French, German, Spanish

Students who enter the University for the first time and who present two or more high school units in a foreign language may take a proficiency test in that language. A student's proficiency in a given language may alter the number of quarter hours required to satisfy the language requirement.

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, denistry and nursing at Meharry Medical College as is charged to students in these professional fields at the University of Tennessee.

COMBINATION CURRICULA FOR THE STUDY OF MEDICINE, DENTISTRY, NURSING, AND CLINICAL LABORATORY TECHNOLOGY

Curricula preparatory for the study of medicine, dentistry, nursing and clinical laboratory technology are offered at Tennessee A. and I. State University in cooperation with Meharry Medical College. Several of these curricula are joint programs between the two institutions and qualify students for the bachelor's degree.

Arts-Medical Combination Curriculum Leading to the Bachelor's Degree

The first part of this joint curriculum is offered regularly enrolled students at the Tennessee A. and I. State University who are pursuing a Bachelor of Arts or Science curriculum.

The first three years of this curriculum include courses designed (1) to offer adequate training in the basic sciences and (2) to promote broad cultural development. The following courses must be successfully completed:

1. Basic Science Courses: (52 to 56 qr. hrs.)	*Qr. Hrs.*
General Biology or Zoology with Laboratory	12
Inorganic Chemistry (to include physical chemistry of solutions)	12
Qualitative and Quantitative Analysis	8
Organic Chemistry with Laboratory	8 to 12
General Physics with Laboratory	12
	52 to 56
2. Broad Cultural Subjects: (88 to 92 qr. hrs.)	
College Mathematics	9
English Composition	9
Electives: chosen in the student's major area of concentration and in subjects designed to promote broad cultural development	70 to 74
Total	144

The fourth year of the joint curriculum is offered those students who are admitted to the Meharry Medical College. At the successful completion of the freshman year curriculum in the School of Medicine at the Meharry Medical College, the student makes application to the Tennessee A. and I. State University for the Bachelor of Arts or Science degree. Upon joint recommendation of the Meharry School of Medicine and the Tennessee A. and I. State University, the student becomes a candidate for the Bachelor of Arts or Science degree. The degree is awarded by the Tennessee A. and I. State University.

Pre-Nursing Curriculum

The pre-nursing curriculum provides the necessary college preparation for entrance into the professional program of approved schools of nursing which offer the bachelor's degree in nursing. The curriculum is composed of the following courses:

First Year	*Quarter Hours*
Chemistry 111-2-3	12
English 101-2-3	9
Mathematics 131-2-3	9
History 121-2-3	9
Electives	6-9
Physical Education 11-12-13	3
	48 to 51

Second Year	*Quarter Hours*
Biology 101-2-3	12
History 201-2-3	9
Sociology 211-2-3	9
Psychology 211-2-3	9
Electives	9
Physical Ed. 20's to 50's	3
	51

Arts—Dental Combination Curriculum Leading to the Bachelor's Degree

The first part of this joint curriculum is offered regularly enrolled students at the Tennessee A. and I. State University who are pursuing Bachelor of Arts or Science curriculum.

The first three years of this curriculum include courses designed (1) to offer adequate training in the basic sciences and (2) to promote broad cultural development. The following courses must be successfully completed:

1. Basic Science Courses: (48 to 52 qr. hrs.)	*Quarter Hours*
General Biology or Zoology with Laboratory	12
Inorganic Chemistry (to include physical chemistry of solutions)	12
Qualitative	4
Organic Chemistry with Laboratory	8-12
General Physics with Laboratory	12
	48 to 52
2. Broad Cultural Subjects: (92 to 96 qtr. hrs.)	
College Mathematics	9
English Composition	9
Electives: Chosen in the major area of concentration and in subjects designed to promote broad cultural development	74 to 78
Total	144

The fourth year of the joint curriculum is offered those students who are admitted to the Meharry School of Dentistry. At the successful completion of the freshman year curriculum in the School of Dentistry at the Meharry Medical College, the student makes application to the Tennessee A. and I. State University for the Bachelor of Arts or Science degree. Upon joint recommendation of the Meharry School of Dentistry and the Tennessee A. and I. State University, the student becomes a candidate for the Bachelor of Arts or Science degree. The degree is awarded by the Tennessee A. and I. State University.

Medical Laboratory Technology Combination Curriculum Leading to Bachelor's Degree and Certificate

The School of Medical Technology of Hubbard Hospital, Meharry Medical College and the Tennessee A. and I. State University, Nashville, Tennessee have established a combination curriculum which leads to the Bachelor of Science degree in Medical Technology from Tennessee A. and I. State University and a Certificate in Medical Technology from Meharry Medical College. The student shall spend three academic years at Tennessee A. and I. State University fulfilling the requirements of that institution and likewise the specific requirements for admission to the School of Medical Technology. After the satisfactory completion of the two year course in Medical Technology at Meharry Medical College, Tennessee A. and I. State University will confer the Bachelor of Science degree, provided student has been admitted on the combined curriculum and meets the requirements in this combination for a degree from that college. The student should present an official statement from the Dean of Admissions of Tennessee A. and I. State University certifying registration for this curriculum at the time of application to the School of Medical Technology.

It must be clearly understood by the applicant that the satisfactory completion of three years of college work at Tennessee A. and I. State University does not imply acceptance in the School of Medical Technology at Meharry Medical College.

The recommended schedule of study for the first three years of college work at Tennessee A. and I. State University for the combination curriculum:

Freshman Year	*Quarter Hours*
English 101-102-103	9
Animal Biology 111-112-113	12
Chemistry 111-112-113	12
Social Sciences (Elective)	3
Physical Education 11-12-13 (Women)	3
Air Science and Physical Ed. (Men) 11-12-13	6
Mathematics 111-112-113	9

Total: (Men) 51; (Women) 48 quarter hours

Sophomore Year	*Quarter Hours*
Biology 241 (Bacteriology)	4
English 211-212-213	9
Chemistry 211-212-213 (Anal. Chem.)	12
Air Science and Physical Ed. (Men) 20's to 43's	6
Physical Education (Women) 20's to 43's	3
Art, Music, Philosophy (Electives)	6
Social Sciences (Electives)	12

Total: (Men 49; (Women) 46 quarter hours

Junior Year	*Quarter Hours*
Biology (Elective)	4
Chemistry 361 (Survey Org.)	4
Humanities (Electives)	15
Social Sciences (Electives)	15
Physics 211, 212, 213	12

Total: (Men) and (Women) 50 quarter hours

SUMMARY OF CURRICULUM

Basic Science Courses with Laboratory	69 qr hrs
Broad Education Courses	80 qr hrs

The schedule of courses of the Medical Technology Curriculum follow.

First Year	*Quarter Hours*	*Total Hours*
Biochemistry	15	165
Bacteriology	15	180
Parasitology	6	72
Physiology	11	121
Clinical Pathology	9	99
Clinical Pathology	9	99
Basal Metabolism	1	11
*Laboratory Practice	108	1,188

Total: Quarter Hours 165
Grand Total: First Year 1,836

Second Year	*Quarter Hours*	*Total Hours*
X-ray Technic	28	308
Tissue Technic Practice	9	99
Cardiology	9	99
Tissue Technic Theory	8	88
Seminar	21	231
*Laboratory Practice	72	792

Total: Quarter Hours 147
Grand Total: Second Year 1,617
Grand Total: First and Second Year 3,453

Arts and Sciences Courses Required in All Departments

101-2-3 *College Orientation* (1½) Lectures, discussions, and individual and group conferences relating to the personal development of the freshman student which will assist him in obtaining maximum adjustment in the college program. Lectures for the first two quarters on: adjusting to college; social problems; acquiring the basic study skills; improving your personality; courtship; vocational choice and developing a sound philosophy of life. The third quarter will include films and lectures on community living. Required of all freshmen.

DEPARTMENT OF BIOLOGICAL SCIENCES

H. K. Wood, Ph.D., *Head*

The curricula of the Department of Biological Sciences are designed to fulfill the requirements in the areas of (1) Teacher Education, (2) preprofessional training for the medical branches, including health and sanitation and basic biological sciences, (3) graduate training of in-service teachers and professionals and (4) service courses for other departments of the University.

Three major undergraduate curricula are offered, each of which terminates in the Bachelor of Science degree. The first two years of all three curricula consist of a basic curriculum of the Lower Division encompassing the principles of the biological sciences. Upon entering, students desiring the Teacher Education Curriculum should select the Basic Curriculum of Teacher Education. Those desiring the professional curricula should select the Basic Curriculum of the Professional Programs. The student must maintain a minimum point average of 2.25 (based on the 4-point system) in his major and must pass a sophomore comprehensive examination to be taken during the third quarter of the sophomore year.

Upon successful completion of the curriculum of the Lower Division, *viz.* a minimum major point average of 2.25 and passing the sophomore comprehensive test, the student is to select his specific major curriculum of the Upper Division under the guidance of his major advisor at the beginning of the first quarter thereafter which is usually the first quarter of the junior year. The student is expected to maintain a minimum point average of 2.25 in the Major of the Upper Division. Those students following the Teacher Education Biology Major must also maintain a cumulative point average of 2.25. The University requires all students to take the University Sophomore tests the third quarter of the sophomore year which must be passed with a satisfactory score prior to graduation.

Those students who wish to prepare for entrance into one of the medical professions should select one of the Professional Curricula. Students desiring to prepare themselves for teaching of general science, biology, chemistry and physics should select the Biology Curriculum of Teacher Education. Endorsement in any one of these fields is contingent to a minimum point average of 2.25. No grade less than "C" in any major course will be accepted as credit toward meeting departmental requirements (lower and upper divisions).

Each of the three curricula require a minimum of 192 quarter hours for graduation, 66 of which must be on the 300 and 400-levels. Each curriculum, also, requires a minimum of 48 quarter hours of major courses as described below in the curriculum, 15 of which must be on the 300 and 400-level.

A student may qualify for the Bachelor of Arts degree by completing the equivalent of 27 quarter hours of German or French in addition to the regularly prescribed courses.

Seniors of outstanding attainment who have demonstrated high achievement in their major are encouraged to take Biology 452, a junior honors research program. This course offers opportunity to gain experience in research under the direction of the Departmental Faculty.

An undergraduate minor in the Department consists of a minimum of 36 quarter hours. 28 of which should be taken in sequence in Biology 111-12-13, Bacteriology 240, Botany 112-13 and Biology 311. General Chemistry 111-12-13 is required as a supporting related course and must precede Bacteriology 240. The remaining 8 hours of the minor must be on the 300 and/or 400-level and may be elected in the minor area desired by the student. For a Biology Minor, 4 hours should be in a botany or microbiology course and 4 hours in a zoology course. For a Botany-Microbiology Minor, 4 hours should be in microbiology. For a Zoology Minor, the 8 hours of electives should be in zoology. Any student desiring to be endorsed to teach biology must have the Biology Minor equivalent of 36 hours plus one year of general chemistry.

LOWER DIVISION

BASIC CURRICULUM FOR TEACHER EDUCATION

With a Major in Biology

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Biology 111-12-13	4	4	4
Math. 161-2	5	5	
Eng. 101-2-3	3	3	3
Chem. 111-2-3	4	4	4
Air Science (M) 151-2-3	1	1	1
P. E. 11-12-13	1	1	1
Health 151 or 211 or 212 or 213 or Nutrition 212			3
Art 131 or Music 133			3
Men	18	18	19
Women	17	17	18

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Microbio. 240	4		
Botany 112-3		4	4
Eng. 211-12-13	3	3	3
Physics 211-12-13 (or 221-2-3)	4	4	4
*German or French 101-2-3 or 201-2-3	3	3	3
Ed. 201	3		
Psychology 242-3		3	3
Air Science (M) 251-2-3	1	1	1
P. E. 21-43	1	1	1
Biology 251			0
Men	19	19	19
Women	18	18	18

BASIC CURRICULUM FOR PROFESSIONAL MAJOR

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Biology 111-2-3	4	4	4
Math. 161-2	5	5	
English 101-2-3	3	3	3
Chemistry 111-2-3	4	4	4
Air Science (M) 151-2-3	1	1	1
Physical Educ. 11-12-13	1	1	1
Art 131 or Music 133			3
Men	18	18	16
Women	17	17	15

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Microbio. 240	4		
Botany 112-3		4	4
English 211-2-3	3	3	3
Physics 211-2-3 (or 221-2-3)	4	4	4
Sociology 211-2-3 or **History 201-2-3	3	3	3
*German or French 101-2-3 or 201-2-3	3	3	3
Air Science (M) 251-2-3	1	1	1
Physical Educ. 21 to 43	1	1	1
Biology 251			0
Men	19	19	19
Women	18	18	18

* A student who has two or more units of the foreign language in high school and passes the entrance proficiency test will begin he language at the level of his indicated proficiency. German is strongly recommended.

** To be pursued if the student *does not* show one unit on high school transcript.

UPPER DIVISION

ROTHER R. JOHNSON, Ph.D., *Chairman*

CURRICULUM FOR TEACHER EDUCATION

With a Major in Biology

This Major in Biology must be preceded by the Basic Curriculum for Teacher Education with a Major in Biology. The Upper Division of this Curriculum is to consist of approximately 50% of courses in Zoology and 50% of courses in Botany and Microbiology on the 300 and 400-level. A minimum of 2 hours of Biology Seminar is required during the senior year. All third quarter seniors must register for and pass satisfactorily Biology 451 to be taken in lieu of the Senior Project.

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Biology 311	4		
Biology, Bot., Microbio., Zoo., Electives		4	4
Chem. 311-2-3	4	4	4
Psychology 312	3		
Educ. 301 Sci. 371		3	3
Soc. 211-2-3 or **History 201-2-3	3	3	3
German or French 201-2-3 or Electives	3	3	3
	17	17	17

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Biology 432			4
Zoology 483	4		
Bot. 453			4
Educ. 387	3		
Educ. 462			3
Educ. 471-2		15	
Phil. 301 or 323	3		
Psych. 463	3		
Pol. Science or Econ. or Hist.	3		
Biology 451			0
Electives			6
Bio. 497-8-9 (Seminar)	2		1
	18	15	18

CURRICULUM FOR PROFESSIONAL MAJOR IN BOTANY AND MICROBIOLOGY

The Major in Botany and Microbiology must be preceded by the Basic Curriculum for Professional Major. A minimum of 2 hours of Biology Seminar is required during the senior year. All third quarter seniors must register for and pass satisfactorily Biology 451 required in lieu of the Senior Project.

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Biol. 311	4		
Microbio. 312		4	
Botany 313			4
Chemistry 311-12-13	4	4	4
Psychology 221-2		3	3
Soc. 322 or Hist.	3		
German or French 201-2-3 or Electives	3	3	3
Phil. 301 or 323 or Electives	3	3	3
	17	17	17

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Bot. 411	4		
Microbio.		4	
Biol. 411 or 441 or Bot. 453 or Microbio. 413 or 463			4
Bio. 451			0
Bio. 497-8-9 (Seminar)	1	1	1
Electives	12	12	12
	17	17	17

** To be pursued if the student *does not* show one unit on high school transcript.

CURRICULUM FOR PROFESSIONAL MAJOR IN ZOOLOGY

The Major in Zoology must be preceded by the Basic Curriculum of the Professional Major. A minimum of 2 hours of Biology Seminar is required during the senior year. All third quarter seniors must register for the pass satisfactorily Biology 451 required in lieu of the Senior Project.

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Biology 311	4		
Zoology 332-3		4	4
Chemistry 311-2-3	4	4	4
Psychology 221-2		3	3
Soc. 322 or Hist.	3		
German or French 201-2-3 or Electives	3	3	3
Phil. 301 or 323 or Electives	3	3	3
	17	17	17

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Zoology 432		4	
Biology or Zoology Electives (400-Level)	4		4
Biology 451			0
Electives	12	12	12
Bio. 497-8-9 (Seminar)	1	1	1
	17	17	17

UNDERGRADUATE COURSES

Biology

101-2-3. *Fundamentals of Biology.* (12) Studies of biological principles as illustrated by types of organisms, their activities and life processes with emphasis on man. Biology 101 must precede Biology 102 or 103. Three lectures and one laboratory period.

111-12-13. *Principles of Animal Biology.* (15) This course is designed to provide a sound understanding of structure, function and life characteristics of animals. This course should be taken in sequence. Three lectures and two laboratory periods.

181-2-3H. *Honors Animal Biology.* (12) A course designed for students of exceptional caliber. Emphasis is placed on individual critical and original thinking based on recent research findings dealing with animal biologic principles. As such the student will be expected to do extensive reading of literature, make special reports and participate in guided discussions. Laboratory problems are so designed as to challenge the ingenuity and creativity of the student. Three lectures and two laboratory periods.

251. *Sophomore Biology Review.* No credit. Required of all third quarter sophomores. This course involves a comprehensive review of basic biologic principles covered the first two years in the major field. It will terminate in a comprehensive examination which must be passed prior to selecting the specific major.

311. *Principles of Genetics.* (4) An introduction of genetics, including the laws of heredity, the role of heredity in developmental physiology, and the relation between heredity and evolution. Prerequisites: Biology 111-12-13 and Botany 112-13 or equivalents. Three lectures and two laboratory periods.

411. *Advanced Genetics.* (4) The main areas considered are the nature of the gene, the principles governing genic mutation and change in chromosomal structure, and the results of the operation of these principles. Prerequisites: Biology 111-12-13, Botany 112-13 and Biology 311. Three lectures and two laboratory periods.

441. *Histology and Microtechnique.* (4) Microscopic anatomy of the organ systems and selected tissues of vertebrates and plants. Theory and methods of preparing tissues for microscopical examination. One lecture and three laboratory periods.

451. *Senior Biology Review.* No credit. Required of all third quarter seniors. This course involves a comprehensive review of biological principles, with emphasis in the major subject, culminating in a comprehensive examination. Required in lieu of the Senior Project.

452. *Junior Honor's Research.* (3) Open to seniors of outstanding attainment who have demonstrated high achievement in their major field. It offers

opportunity to do individual research under the direction of a member of the Departmental Faculty.

497-8-9. *Biology Seminar.* (3) Current Problems in Biology. A minimum of two quarters required of all seniors in the Department. Meets weekly during each quarter of the regular school year.

Botany

112-3. *General Botany.* (10) Deals with a study of the anatomy, physiology and taxonomy of plants. Three lectures and two laboratory periods.

313. *Plant Morphology.* (4) Consideration of the structure embryology and phylogeny of higher vascular plants. Prerequisite: Botany 113. Three lectures and two laboratory periods.

411. *Introductory Plant Physiology.* (4) Consideration of the functions of digestion, mineral, nutrition, growth, photosynthesis, respiration, translocation, photoperiodism, plant hormones, transpiration and water relations as occurring in a typical green plant. Prerequisites: Botany 113 and General Chemistry 111-12-13 or equivalents. One lecture and three laboratory periods.

453. *Field Botany.* (4) A course designed to acquaint the student with basic principles of plant classification and identification, the use of manuals with reference made to the families, genera and species of the local flora. Prerequisite: Botany 112-13 or equivalent. One lecture and three laboratory periods.

Microbiology

240. *Principles of General Bacteriology.* (5) This course is concerned with the isolation, identification, culture, nutrition, sterilization and chematherapeutic procedures employed in studying bacteria. Prerequisites: 1 year Animal Biology (111-12-13) and 1 year General Chemistry (111-12-13) or equivalents. Three lectures and two laboratory periods.

241. *General Bacteriology.* (5) Consideration of identification, culture, sterilization and disinfectant procedures employed in studying certain microorganisms. Open to majors in Home Economics and Health and Physical Education. Prerequisite: Biology 101 or Chemistry 111. Three lectures and two laboratory periods.

312. *Introduction to Microbial Physiology.* (4) This course outlines some of the salient features in the physiology of microorganisms. Selected examples of the metabolism of carbohydrates, lipids and nitrogen containing compounds will be considered as a basis for further understanding of biologic phenomena. Prerequisites: Microbiology 240 and Organic Chemistry, concurrently, or equivalents. Three lectures and two laboratory periods.

412. *Pathogenic Microorganisms.* (4) This course surveys some of the important features of host-parasite interaction. Characteristics of the organism, host hypersensitivity, natural and acquired immunity will be considered as a contributing factor towards this interaction. Modern preventive methods will be emphasized. Prerequisite: Microbiology 240. Three lectures and two laboratory periods.

413. *Immunology and Serology.* (4) Theories of immunity, training in serological methods and procedures for immunization. Prerequisites: Microbiology 240 and 412. Three lectures and two laboratory periods.

463. *Virology.* (4) Nature of viruses and viral diseases; diagnostic procedures; identification, cultivation, purification and preservation of viruses. Preparation and use of vaccines and serum. Prerequisites: Microbiology 240 and 412. Three lectures and two laboratory periods.

Zoology

202-3 *Human Physiology.* (10) The fundamentals of the structure, function and organization of the organ-systems of man. These courses must be taken in sequence. Open to majors in Home Economics and Health and Physical Education. Prerequisite: Biology 101 or Chemistry 111. Three lectures and two laboratory periods.

332-3. *Comparative Anatomy.* (8) The comparative anatomy and evolution of the organ-systems of chordate animals. These two courses must be taken

in sequence. Prerequisites: Biology 111-12-13 or equivalents. Three lectures and two laboratory periods.

401. *Invertebrate Zoology.* (4) A study of the morphology, physiology, taxonomy and life histories of the invertebrates. Emphasis is placed on the systematic developments of invertebrate types. Prerequisites: Biology 111-12-13 or equivalents. Three lectures and two laboratory periods.

402-3. *Mammalian Physiology.* (8) Consideration of the dynamic interactions and integrations of mammalian organ-systems. Special emphasis is placed upon recent advances in methodology and new concepts in physiology and contributing sciences. Prerequisites: Biology 111-12-13 and Chemistry 111-12-13 or equivalent. Three lectures and two laboratory periods.

432. *Embryology.* (4) A general consideration of gametogenesis, fertilization and cleavage in animals and the early development of echinoderms, protochordates and selected vertebrates, with emphasis on early development of the chick. Prerequisites: Zoology 332-3 are strongly recommended. Three lectures and two laboratory periods.

441. *Introduction to Parasitology.* (4) A survey of the animal parasites of man and animals. Special attention is given to the parasitic protozoa, the helminths, and the arthropods. Consideration is also given to the spirochaetes, certain viral diseases, the rickettsia and related organisms. Prerequisite: Biology 111-12-13 or equivalent. Three lectures and two laboratory periods.

461. *Endocrinology.* (4) The function of vertebrate hormones with emphasis on those concerned in the physiology of reproduction. Techniques used in small animal surgery in endocrine research. Prerequisites: Zoology 432. Two lectures and two laboratory periods.

483. *General Entomology.* (4) A study of the general characteristics of insects, with special emphasis on their biology, ecology and economic importance. Some attention is also given to methods of collecting and preserving insects for study and/or demonstrations. Prerequisite: Biology 111-12-13 or equivalent. Three lectures and two laboratory periods.

DEPARTMENT OF CHEMISTRY

W. C. Farrar, Ph.D., *Head*

The curriculum of the Department of Chemistry is designed (1) to offer a collegiate major in Chemistry which, qualitatively and quantitatively, satisfies the criteria generally adopted by the leading colleges and universities of the United States and by the American Chemical Society, (2) to offer meaningful and satisfactory service courses to other departments in the university, and (3) to offer a graduate program of instruction and research leading to the Master of Science degree which will conform to the requirements of the Graduate School of the University.

Students who are taking a professional undergraduate major in Chemistry must begin their work in the freshman year and should take the courses shown in the program below entitled "Undergraduate Program for Professional Major." A minimum of 66 quarter hours in 300 and 400-level courses is required of majors.

Undergraduate Program for Professional Major

A professional undergraduate major consists of a minimum of 60 quarter hours of Chemistry, 36 of which must be in 300 and 400 level courses. These hours are 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 401 (Chemical Bibliography)	3 Quarter Hours
Chemistry 481-2-3 (Physical)	12 Quarter Hours
Chemistry 400 (Senior Project)	3 Quarter Hours
Chemistry: Elective Advanced Course	6 Quarter Hours
Total Hours Chemistry	60 Quarter Hours

In addition, the major in Chemistry includes the following related and required courses:

Mathematics 161-2-3	15 Quarter Hours
Mathematics 261-2-3	15 Quarter Hours
Physics 221-2-3	12 Quarter Hours
Social Science Electives	18 Quarter Hours
*Foreign Language (2 Years)	18 Quarter Hours
English Composition 101-2-3	9 Quarter Hours
English Literature 211-2-3	9 Quarter Hours
Total Hours Related and Required Courses	96 Quarter Hours

In the total course of study, including all courses taken, at least 45 hours must be in 300 and 400 level courses.

CURRICULUM IN CHEMISTRY FOR A PROFESSIONAL MAJOR

Freshman Year	*Quarter Hours Credit*		
Name of Course	*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 11-12-13	1	1	1
Air Science for men	1	1	1
Foreign Lang. I	3	3	3
Men	17	17	17
Women	16	16	16

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Chemistry 211-2-3	4	4	4
Foreign Lang. II	3	3	3
Mathematics 261-2-3	5	5	5
Physical Education 20's and 50's	1	1	1
Air Science for men	1	1	1
World Literature 211-12-13	3	3	3
Men	17	17	17
Women	16	16	16

Junior Year	*Quarter Hours Credits*		
Name of Course	*I*	*II*	*III*
Chemistry 311-2-3	4	4	4
Physics 221-2-3	4	4	4
Electives (Unrestricted)	6	6	6
Social Science Elective	3	3	3
	17	17	17

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Chemistry 481-2-3	4	4	4
Chemistry 401	3		
Chemistry Elective		3	3
Chemistry 400 (Senior Project)		3	
Social Science Elective	3	3	3
Elective (Unrestricted)	6	3	6
Chemistry 492	0	0	0
	16	16	16

COURSES IN CHEMISTRY

111-2. *General Chemistry.* (8) This course is an elementary study of the fundamental laws and theories of chemistry and of the descriptive chemistry of important elements and compounds. Required of majors in chemistry, biology, engineering, pre-medicine, pre-dentistry, home economics, agriculture, health and pre-nursing. Two lectures, one recitation, and two two-hour laboratory periods per week. Prerequisite: Passing of the placement test or Mathematics 100.

113. *Qualitative Analysis. (Inorganic).* (4) Prerequisites: Chemistry 111-12, Mathematics 111 or 161. A study of the principles underlying ionic equilibria in solutions and a laboratory study of the separation and identification of the common cations and anions. Two lectures and two three-hour laboratory periods per week.

* German or Russian.

181H, 182H. *Honors Chemistry.* (8) An elementary study of the fundamental laws and theories of chemistry and of the descriptive chemistry of important elements and compounds. Two lectures, one recitation, two two-hour laboratory periods per week, and additional reading from original literature.

183H. *Honors Chemistry.* (4) A study of the principles underlying ionic equilibria in solutions and a laboratory study of the separation and identification of the common cations and anions. Two lectures, two two-hour laboratory periods per week, and additional readings from original literature. Prerequisites: Chemistry 181H-182H.

° 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 quantitative analysis includes both volumetric and gravimetric analysis, together with related stoichiometric problems. Three lectures and two three-hour laboratory periods per week.

° 311-2-3. *Organic Chemistry.* (12) Chemistry 111-2-3 are prerequisites. with a minimum grade of "C" in each course. 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.

361. *Organic Chemistry Survey.* (4) Chemistry 111-2-3 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. Designed for majors in agriculture, home economics, and health. Three lectures and two two-hour laboratory periods.

400. *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.

401. *Chemical Bibliography.* (3) Prerequisites: Chemistry 211-2-3 and 311-2-3, and a reading knowledge of German or Russian. 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. *Analytical Chemistry.* (6) Chemistry 211-2-3, 311-2-3, 481 and Physics 221-2-3 are prerequisites. Instrumental methods of analysis. Open to senior chemistry majors and graduate students. This course trains students in the theory and practice of instrumental methods as applied to quantitative analysis. Potentiometric and conductometric titrations, measurement of pH, and analyses using refractometers, colorimeters, spectrophotometers, and Geiger Counters will be performed. Two lectures and two three-hour laboratory periods each week.

°°° 440. *Fundamentals of Chemistry (Summer Only).* (4) The fundamentals and modern concepts of inorganic and organic chemistry are discussed. Physical and chemical properties of elements and compounds are considered from a point of view of atomic and molecular structure. Five lectures and two two-hour laboratory periods.

°°° 441. *Analytical Chemistry (Summer Only).* (4) This course consists of the fundamental principles of volumetric and gravimetric analysis, stoichiometry, and appropriate individual laboratory work. Some inorganic qualitative analysis will be included. Five lectures and two three-hour laboratory periods.

°°° 451-2-3. *Modern Chemistry.* (12) This three-quarter course is designed to survey the field of chemistry. Emphasis is placed upon atomic and molecular structure and principles relating to physical and chemical change. Modern concepts concerning radio-activity, nuclear reactions, and acid-base relationships are analyzed. An extensive survey of modern theories relating atomic and molecular structure in organic compounds concludes the course.

°°° 462-3. *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. Two lectures and two three-hour laboratory periods.

° 481-2-3. *Physical Chemistry.* (12) Prerequisites: Chemistry 111-2-3 and 211-2-3, Mathematics 261-2-3, and Physics 221-2-3; or permission of instructor. Physics 221-2-3, Mathematics 261-2-3, and Chemistry 481-2-3 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 equilibra, reaction rates, and electrochemistry. Three lectures and two three-hour laboratory periods.

492. *Chemistry Seminar.* (0) Required of all Seniors.

* Must be taken in sequence.
*** For Science Education Majors only.

DEPARTMENT OF ENGLISH

CRAWFORD B. LINDSAY, Ph.D., *Head*

The program of the Department of English is so arranged as to serve the needs of all the students of the University, as well as to give a thorough foundation to those who desire to become teachers or specialists in the field. The Department also gives assistance to those who look forward to careers in the field of journalism.

Work leading to the Bachelor of Science degree, as well as to the Bachelor of Arts degree, may be pursued in the Department of English. All students working for an undergraduate degree in English must complete at least 12 quarter hours in either biology, chemistry, or natural science and at least 9 quarter hours in mathematics (Mathematics 111-112-113 or Mathematics 131-132-133) in addition to the other requirements. Candidates for the Bachelor of Arts degree must meet the requirement of the University in foreign languages, which requirements are stated elsewhere. (For a person who has had no foreign language in high school, the foreign language requirement is 27 quarter hours of work in one language for the Bachelor of Arts degree). Candidates for the Bachelor of Science degree may satisfy the requirement in foreign languages by completing only 9 quarter hours of work in one language, regardless of whether or not they had had foreign language in high school. All other requirements for the Bachelor of Science degree and the Bachelor of Arts degree in English are the same.

Each undergraduate must complete a minimum of 192 quarter hours of work for a bachelor's degree. At least 66 of the quarter hours in all subjects must be in courses on the 300 and 400 level. At least 54 quarter hours of work in English above the 9 quarter hours of work in Freshman English must be completed. (In actual practice, many more hours in English are completed by most English majors.) This 54 quarter hour minimum requirement in English does not include the 3 quarter hour course in English 371 (Methods of Teaching English in High School), which carries certification credit in secondary education, although it is administered by the Department of English.

One desiring to take the teacher education program in English as a second teaching area must complete 36 quarter hours of work in English, including Freshman English (English 101-102-103, or its equivalent), Introduction to Literature (English 221), Survey of English Literature (English 222-223), History of the English Language (English 451), and World Literature (English 211-212-213). Methods of Teaching English (English 371) may not be included in this 36 hour total, though it must be completed.

Majors in English are required to complete the following courses: English 101-102-103 (Freshman English); English 211-212-213 (World Literature); English 221 (Introduction to Literature); English 222-223 (English Literature); English 361-362-363 (American Literature); and English 451 (English Language).

All English majors must elect a course in composition above the freshman level before graduation. In addition to the courses listed above, all English

* Must be taken in sequence.

majors in the teacher education program must complete 39 quarter hours of approved work in professional education and, also, the following courses: Art 133 (Man and Materials); Music 131 (Music Appreciation); Social Studies 111-112-113-114; or three courses of one other social science and one course of another social science and three courses of mathematics, either 111-112-113 or 131-132-133 or 161-162-163; and 9 quarter hours of work in Health, Personal Development, and Home and Family Living.

BACHELOR OF SCIENCE CURRICULUM IN ENGLISH

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 101-2-3	3	3	3
Foreign Language	3	3	3
Social Science	3	3	3
Mathematics	3	3	3
Health 211-12	3	3	
Art 133			3
P. E.	1	1	1
AFROTC (M)	1	1	1
Men	17	17	17
Women	16	16	16

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 211-12-13	3	3	3
English 221-2-3	3	3	3
Music 131	3		
Biology 101-2-3 or Chemistry 111-12-13 or Natural Science 121-22-23	4	4	4
Education 201	3		
Psychology 242		3	
Social Science			3
P. E.	1	1	1
AFROTC (M)	1	1	1
History 201-2		3	3
Men	18	18	18
Women	17	17	17

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Hist. 203			3
English 361-2-3	3	3	3
Foreign Language	3	3	3
Educ. 301	3		
Psychology 312		3	
English 323			3
English 311-12-13 or English 331-2-3	3	3	3
Psy. 243	3		
Electives		3	
Speech 201-2-3	3	3	3
	18	18	18

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 411-12; or English 421-22	3	3	
Psych. 463	3		
English 451-371	3	3	
Educ. 387		3	
Educ. 462	3		
Educ. 471-2			
Electives	3	6	15
English 450, 393 or 423	3	3	
	18	18	15

BACHELOR OF ARTS CURRICULUM IN ENGLISH

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 101-2-3	3	3	3
Foreign Language	3	3	3
Social Science	3	3	3
Mathematics	3	3	3
Health 211-12	3	3	
Art 133			3
P. E.	1	1	1
AFROTC (M)	1	1	1
Men	17	17	17
Women	16	16	16

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 211-12-13	3	3	3
English 221-2-3	3	3	3
Music 131			3
Biology 101-2-3 or Natural Science 121-22-23	4	4	4
Education 201	3		
Psych. 242		3	
P. E.	1	1	1
Foreign Language	3	3	3
AFROTC (M)	1	1	1
Men	18	18	18
Women	17	17	17

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 361-2-3	3	3	3
Foreign Language	3	3	3
Educ. 301	3		
Psych. 312		3	
English 323			3
English 311-12-13 or English 331-2-3	3	3	3
Psych. 243	3		
Elective		3	
Speech 201-2-3	3	3	3
Social Science			3
	18	18	18

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 411-12 or English 421-22	3	3	
English 451-371	3	3	
Psych. 463		3	
Educ. 387	3		
Educ. 462	3		
Educ. 471-2			15
Hist. 201 or 202 or 203		3	
Electives	3	3	
English 450, 393 or 423	3	3	
	18	18	15

COURSES IN ENGLISH

Undergraduate

100. *English Fundamentals.* A non-credit course designed for students who give evidence by entrace examination of their inability to meet the standards of English 101.

101-102-103. *Freshman English.* (9) A course concerned with the development of various areas of the communication skills—reading, writing, speaking, and listening. Required of all freshmen in numerical sequence.

181H-2-3. *Honors English.* (9) An Honors Course in Freshman English designed for students with special competence in English to work at an advanced level. Class enrollment is limited and restricted to students notified as having qualified for the English Honors section.

211-212-213. *World Literature.* (9) A course embracing the study of the principal works, by types, of world literature from the ancients to the comtemporary American, British, French, German, Spanish, and Italian writers. Special attention given to religious and philosophical theories in these writings and their applications to modern life and thought.

221. *Introduction to Literature.* (3) A course designed to acquaint the English major with the techniques of the short story, the nature of dramatic art, and the forms of poetry, with emphasis on poetry. Prerequisite: English 101-102-103.

222-223. *Survey of English Literature.* (6) Lectures, reports, readings, and classroom discussion of major English works from the Anglo-Saxon Period to the Twentieth Century. (Three courses were offered as English 202-203 during 1950-51.) Philosophical and religious implications in these selections given consideration as they contribute to the prospective English teacher and the life of the community in which he resides.

261-262. *Children's Literature.* (6) (Offered also as Education) 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 considered.

272. *Advanced Composition.* (3) Open to students beyond the freshman year who desire additional training in written communication.

301-302-303. *Elementary Journalism.* (9) 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) Study of representative British selections from 1798 to 1832. Attention given to both poetry and prose.

312. *Prose of the Victorian Age.* (3) An intensive study of non-fictional prose writers such as Carlyle, Mill, Arnold, Newman, and Ruskin, with additional assignments in the works of the major novelists such as Dickens, Thackeray, and Eliot.

313. *Poetry of the Victorian Age.* (3) A study of the major and minor poets, with emphasis on Tennyson, Browning, Arnold, Rossetti, Morris, and Swinburne.

321-322. *Business English.* (6) A course in business correspondence and advertising. English 272 or 321 a pre-requisite for English 322.

323. *Expository Writing.* (3) Training in preparation of the research report and other types of expository writing, with emphasis on the collection of material, analysis, organization, and arrangement.

331. *Literature of the Sixteenth Century.* (3) Study of representative British selections from 1500 to 1600. A consideration of the non-dramatic literature of the century; Lyly, Peele, Greene, Linacre, More, Colet, and others. The poetic types included. Philosophical and religious phases in the lives and work of the authors so concerned stressed in relation to the future teacher of English and his clientele.

332. *Literature of the Seventeenth Century.* (3) Study of representative British selections from 1600 to 1700. The poetry and prose of the period in relation to streams of throught of the century as revealed in the writings of the metaphysical, cavalier, puritan, and restoration authors.

333. *Literature of the Eighteenth Century.* (3) Study of representative British selections from the ages of Pope (1700-1844) and Johnson (1744-1788.)

361-362-363. *Survey of American Literature.* (9) American Literature from Colonial times to the Civil War; American Literature from the Civil War till 1900; American Literature of the twentieth century. Required of all majors in the Junior year.

371. *Methods of Teaching High School English.* (3) (Offered as Education.) A methods course in secondary school English. Required of majors. Pre-requisite: Thirty-six hours of English must be taken during residence at this University.

393. *Literature of Negro Life.* (3) A study of American literature dealing primarily with Negro life.

401. *The Metaphysicals.* (3) A study of the works of John Donne, George Herbert, Richard Crenshaw, Henry Vaughn and other followers of the Donnesque school. Special attention given to religious doctrines and philosophies advanced by these writers, and their implications to future teachers of English and their communities.

411. *Shakespeare.* (3) Study of the principal plays of Shakespeare.

412. *Shakespeare.* (3) A continuation of the study of Shakespeare, with emphasis upon the cultural background of the Elizabethan Period.

421. *The English Novel.* (3) A study of selected English novels, with attention to the social background in which they are written.

422. *The American Novel.* (3) A study of selected American novels, with attention to the social background in which they are written.

423. *The Continental Novel.* (3) A study of selected Continental novels with attention to the social background in which they were written.

431. *Milton and Bunyan.* (3) Study of Milton's Paradise Lost, Samson Agonistes, Paradise Regained, the minor poems, and the more important prose tracts; and of Bunyan's Pilgrim's Progress. The philosophy and religion in the works of Milton and Bunyan will be carefully treated to gain maximum perspective in the thinking of the prospective teacher of English.

450. *Senior Project* (3)

451. *History of the English Language.* (3) A study of the development of the English language from the beginnings to modern times. Some attention is given to phonetics and to the elementary principles of linguistics. Required of all English majors. Prerequisite: Eighteen hours of English.

452. *Chaucer.* (3) A close study of the Canterbury Tales and Troilus and Criseyde, with emphasis on Chaucer as a literary artist.

453. *Current English.* (3) Advanced grammar and modern usage. Some attention is given to semantics. Pre-requisite: Eighteen hours of English.

472. *Grammar and Language Institute.* An institute designed to guide participants in acquiring knowledge in and experience with applying recent linguistic findings concerning the nature of language and the communication process. Special attention will be given to new developments in English grammar and their implications for instruction in the language arts. (Summer, 1964)

DEPARTMENT OF HISTORY AND POLITICAL SCIENCE

ALONZO T. STEPHENS, Ph.D., *Head*

General Statement

The Department offers two curricula leading to the Bachelor's degree, namely, History and Political Science.

The curriculum in History offers courses of study at the undergraduate level leading to the Bachelor of Arts and Bachelor of Science degrees.

The curriculum in Political Science offers courses of study at the undergraduate level leading to the degrees of Bachelor of Science and Bachelor of Arts degrees. A teacher education program is also offered.

CURRICULUM IN HISTORY

ALONZO T. STEPHENS, Ph.D., *Coordinator*

Instruction in the curriculum of history is designed to present the main aspects of the rise and development of civilization. The curriculum 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 curriculum is to enable students to read historical literature critically and to acquaint students with the facts in the development of man and of civilization.

Instruction in history is designed to give to the student within the first two years a knowledge of the important events, characters and development in the past of mankind. To achieve this aim, the curriculum requires that all majors have a general understanding of certain related fields.

Instruction in history during the Junior and Senior year is designed to prepare students for service as junior and senior high school teachers and careers as instructors in Social Sciences and History. A student must submit to the department one research paper on some phase of history defined by the department. The paper must demonstrate adquate ability to do research in source materials, to analyze and interpret data and to present findings in an adequately documented paper written in acceptable English.

All students must complete 18 quarter hours in Foreign Languages (French, Spanish, or German) which commences with the Freshman year.

All majors in history are required to select a minimum of 18 quarter hours on the 300 and 400 levels from the following three areas: (1) American

History—United States (Colonial, Middle, Recent and Regional); (2) European History, and (3) World Civilization and Culture; The Far East or Latin America.

A major in history should include History 121-2-3; History 201-2-3; 301-2-3; 331; 341-42; 471; and 491 and/or 492; nine additional hours in Junior-Senior courses in history; Economics 211-12-13; or Sociology 211-12-13 and Political Science 211-22-23. A major will complete a minimum of 48 hours in History. Courses should be completed in sequence.

Minor: A student who makes history his minor will complete: History 121-2-3 at freshman level; History 201-2-3 at sophomore level; History 301-2-3 at Junior level; History 331; History 341-32; History 491 or 492. The student must complete 9 hours in American History and 9 hours in European History. Each student with a minor must have a minimum of 39 hours. With approval of his major adviser and the Coordinator of History, additional courses in a special area may be taken. Certification in history is granted only to students who complete the major history program/or persons who have a major in another Social Science Curriculum.

Description of Programs

Students may select the program, Bachelor of Science with Teacher Education. The Bachelor of Science curriculum requires 18 hours in a Foreign Language. The number of quarter hours in language depends upon the number of hours in the one language acquired in high school. (See requirements for Bachelor's Degree). All students who seek certification in history must meet all requirements for teacher education including tests. All grades must be "C" or above or no less than 2.00.

Students who do not plan to teach but wish to qualify for careers in government, public services, law, professions, as writers, newspaper or communications men or seek a broad liberal education are advised to take the following non-teaching program leading to the Bachelor of Arts degree.

BACHELOR OF ARTS CURRICULUM IN HISTORY

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, or Natural Science)	4	4	4
Mathematics 111-2-3	3	3	3
Physical Ed. 11-12-13	1	1	1
Air Science I (Men)	1	1	1
Men	18	18	18
Women	17	17	17

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English	3	3	3
Foreign Language	3	3	3
Social Studies (Economics, Polit. Sci., Sociology or Geography)	3	3	3
History 201-2-3	3	3	3
Psych. 221-2	3	3	3
Physical Ed 20's-50's	1	1	1
Air Science II (Men)	1	1	1
Men	17	17	17
Women	16	16	16

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Political Science	3		
History 341-2	3	3	
History 301-2-3	3	3	6
Minor	3	3	3
Foreign Language	3	3	3
Electives (History)	3	6	3
	18	18	15

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
History 491 and/or 492	3	3	
History (300-400)	3	3	3
Minor	3	3	3
History 450		3	
Electives (History)	9	6	9
	18	18	15

Special Instruction for Teacher Education

Students seeking a major or minor in the B.S. program (designed exclusively for teacher education) are required to take the planned sequence for the History Curriculum-consisting of both the subject matter and professional courses. All "I" grades and other deficiencies must be removed before the student may apply for History 472.

Students seeking a minor in History are required to take nine (9) hours in American History 201, 202 and 203; three (3) hours of Tennessee History 341 or 342 and nine (9) hours in European History at the 300 or 400 level. Other requirements for teacher education must be met:

1. Each student who desires to be admitted to the teacher education program will make application to the Director of Teacher Education the third quarter of his sophomore year after he has completed 30 quarter hours of work including the sophomore level of professional education.
2. Retention in the teacher education program will call for full compliance with standards and requirements of that program.

Teacher Education in History with Concentration in another area

The following courses are required for students who seek certification in history (as a minor) graduating with a major in another area:

History 121-2-3; 201-2-3; 331; 341 or 342; 301-2-3; 471, 491 or 492.

Prerequisites for student teaching in history: All education and history course requirements at Freshman, Sophomore and Junior level:

Education 201
Education 301
Education 387
Education 462
Psychology 242
Psychology 243
Psychology 312
Psychology 463
History 371

The above listed courses are to be taken in sequence and are the prerequisites to certification in history.

The student must complete 9 hours in American History 201-2-3 and 9 hours in European History 301-2-3, or Contemporary World History 401-2-3. Each student must have a minimum of 39 quarter hours in history.

Teacher Education Curriculum in History

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 101-2-3	3	3	3
Mathematics 111-12-13	3	3	3
Health 211-12-13	3	3	3
Art 133	3		
P.E. 11-12-13	1	1	1
Air Science I (Men)	1	1	1
Language (French, German, Spanish)	3	3	3
Music 131		3	
Nutrition			3
Men	17	17	17
Women	16	16	16

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 211-12-13	3	3	3
History 121-2-3	3	3	3
Language (Foreign)	3	3	3
Science (Biology, Chem., Physics, or Science Educ.)	4	4	4
Education 201	3		
Psychology 242		3	
Psychology 243			3
P.E. 20's to 50's	1	1	1
Air Science (Men)	1	1	1
Men	18	18	18
Women	17	17	17

NOTE: In order to satisfy the requirement of twelve (12) hours of Social Sciences a student may select nine (9) hours from one of the following sequences, and three (3) from another: Economics 211-12-13; Sociology 211-12-13; Anthropology 221, or Political Science 221-22-23.

Junior Year	Quarter Hours Credit		
Name of Course	I	II	III
History 201-2-3	3	3	3
Education 301	3		
Psychology 312		3	
Polit. Sci. 221-2-3	3	3	3
Economics or Sociology	3	3	3
Hist. 371		3	
History 341-42	3		3
Elective			3
History 301-2-3	3	3	3
	18	18	18

Senior Year	Quarter Hours Credit		
Name of Course	I	I	III
History 450	3		
History 491 or 492	3		
Education 462	3		
Education 387	3		
Education 472		15	
Psychology 463			3
Electives	6		15
	18	15	18

COURSES IN HISTORY

Undergraduates

121-2-3. *The Growth of Civilization.* (9) A study of the contribution that all races and nations have made to our present civilization. Assigned readings, discussions, reports, and quizzes will comprise the type of work in this course. (Required of all Freshmen).

201-2-3. *American History.* (9) History 201: An investigation of European culture and influence upon the American Colonies from 1492 to 1789. History 202: The beginning of our National State from 1789 to 1877. History 203: Post-Reconstruction Problems, the emergence of industrial life and the influence of technology in American civilization, the dominance of the Republican Party in National politics; rise of organized labor, urbanization, the rise of the Negro Rights Movement, American Imperialism, the First and Second World War Problems of the United States and the United Nations in the post World War II World.

181-H. *Honors History.* The Course of Civilizations: Classical Age of Greece and Rome: Fertile Crescent, Egypt, India. An intensive investigation of the development of man from the dawn of history to the modern period. Advanced scholastic students (top percentile) will engage in intensive and extensive study of the social, intellectual, economic, geographical, and political developments of man to the classical civilizations of Greece and Rome.

182-H. *Honors History.* The Course of Civilizations: The Early Middle Ages, Later Middle Ages—Man's development in Asia, Europe, Mediterrean, Africa and the Middle East and the Western Hemisphere.

183-H. *Honors History.* The Course of Civilizations: Renaissance and Reformation, Absolutism, Rationalism Commercialism, Nationalism, Industrialism, Democracy and the Age of Total War and Revolution to the Present.

301. *Foundations of Modern Eurone.* (3) This course deals with the important phases of the Protestant Revolt; the economic, political, and the religious background; the Lutheran and Reform Movements, with special reference to their political and theological trends; the early expansion of Europe. (Period 1500 to 1715.)

302. *Foundations of Modern Europe.* (3) A study of the rise of Russia, Prussia and Austria; the decline of Sweden and Poland; the Intellectural 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. (Period 1715-1848.)

303. *Foundations of Modern Europe.* (3) A study of European History from 1848-1920. 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.

341-42. *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. *(Formerly 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 1789-1860.* (3) Continuation of History 361.

363. *Constitutional History of the United States 1860 to Present.* (3) Continuation of History 362.

371. *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.

372. *(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.

373. *Economic History of the United States 1860 to Present.* (3) Continuation of History 372.

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.

385. *Vital Topics.* (3) A history of the Near or Middle East, prehistoric times to the 1800's.

386. *Vital Topics.* (3) A history of the Near or Middle East from 1880 to 1914.

387. *Vital Topics.* (3) A history of the Near East and North Africa from 1800 to the present. The social, political-geographic, economic, diplomatic and sultural aspects are emphasized.

391-2-3. *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 precusor 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 totalitarian states, education, art, literature and music and religion; the East in Revolt; and finally, the second world war and present issues.

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 establishment.

433-4. *The Development of 19th Century Empires 1800-1930 (Formerly —The British Empire).* alternate years 1965-66 (6) A study of the rise and expansion of the protest and independence movement under the British, French, Dutch, Belgian, German, and Italian Empire system in colonial areas of the nonwestern world—Africa, South East and West Asia, India, and the Middle East commencing with the 1880's to 1930. The imperalistic struggle for, and in these areas which led to the Petition of Africa, the Open Door Policy in China and the development of the white man's burden are given special consideration. Also events which led to World War I, its settlement and the formation of the League of Nations, to the eve of the Great World Wide Depression will be investigated.

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 in history.

451. *Latin American History.* alternate year 1964-65 (3) An introduction and general history of the founding of the Spanish and Portuguese Colonial Empires in the Western World and Southern Hemisphere 1450 to 1820—Spanish explorations in caribbean areas, Gulf states to California, Mexico, Central and South America.

452. *Latin American History.* alternate year 1964-65 ( ) Revolutions, revolts, and reactions to French rule 1790—1814 and Spanish rule 1824 and the Development of independence movements in Spanish areas; the formation of the Portuguese Empire in Brazil and the status of these states to 1920.

453. *Latin American History.* alternate year 1964-65 (3) The development of Modern Latin America from World War I to the present. Social, political, economic, politics-geographic relations and international role, importance, challenge and problems.

481. *World Civilizations.* alternate year 1964-65 (3) An extensive and intensive survey of the political, economic, social, political geographic, and international relationship of the Far East. Eastern Russia, Manchuria, Burma, Indonesia, Phillippines, China, Japan, Viet-Nam, India, from prehistoric times to 1800.

482. *World Civilizations,* alternate year 1964-65 ( ) A continuation of the area from 1880 to 1914.

483. *World Civilizations.* alternate year 1964-65 (3) A penetrating investigation of the area from 1914 to the present with special emphasis on the rise and fall of imperialism, the national independence movements, the development of two Chinas, the end of World War II settlements, the rise of new states from Western political determination, the Korean War, the Wars in former French areas and the struggle between East and West.

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.

CURRICULUM IN POLITICAL SCIENCE

GEORGE L. DAVIS, Ph.D., *Coordinator*

The general objectives of the curriculum in 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 economic, 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 science, or in law.

The curriculum offers courses of study at the undergraduate level leading to the degrees of Bachelor of Science and Bachelor of Arts in Political Science. Students desiring the Bachelor of Arts degree are required to take a minimum of one major and one minor. Students desiring to qualify for teaching may do so by selecting the teacher education program for the social sciences.

In addition to the University requirements for graduation, the minimum undergraduate curriculum requirements are: (1) 206 quarter hours for the Bachelor of Arts and the Bachelor of Science degrees, of which a minimum of 66 quarter hours for each degree must be completed in 300 and 400 level courses; (2) 42 quarter hours in Political Science of which a minimum of 27 quarter hours must be completed in 300 and 400 level courses for the Bachelor

of Arts, the Bachelor of Science degree including History 371; (3) 54 quarter hours in the social studies of which a minimum of 15 quarter hours must be completed in 300 and 400 level courses for certification of prospective teachers.

Students with a minor in Political Science must complete a minimum of 18 quarter hours in 300 and 400 level courses in addition to the basic courses, Political Science 221-2-3.

BACHELOR OF ARTS

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Air Science (men)			
151-2-3	1	1	1
English 101-2-3	3	3	3
History 121-2-3	3	3	3
Mathematics 111-2-3	3	3	3
Phy. Ed. 11-12-13	1	1	1
Science, Bio. or Chem.	4	4	4
Geog. 171-2,			
Health 151	3	3	3
Men	18	18	18
Women	17	17	17

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Air Science (men)			
251-2-3	1	1	1
English 211-2-3	3	3	3
*Foreign Language	3	3	3
History 201-2-3	3	3	3
Phy. Ed. (20's to			
50's)	1	1	1
Pol. Sci. 221-2-3	3	3	3
Psychology 221-2	3	3	
Music 131			
Men	17	17	17
Women	16	16	16

Junior Year	*Quater Hours Credit*		
Name of Course	*I*	*II*	*III*
Economics 211-2-3	3	3	3
Pol. Sci. 313	3		
Pol. Sci. 321-2-3	3	3	3
Pol. Sci. 341-2-3	3	3	3
Sociology 211-2-3	3	3	3
Speech 202-3		3	3
*Foreign Language	3	3	3
	18	18	18

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Electives		3	3
Geography 391	3		
Psychology 321	3		
History 300's-400's		6	3
History 491	3		
Psychology 312		3	
Philosophy 323	3		
Pol. Sci. 450 & Elect.	6	6	6
Soc. Admin. 463			3
	18	18	15

POLITICAL SCIENCE—TEACHER EDUCATION

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Air Science 151-2-3	1	1	1
Art 133 or Music 131		3	
English 101-2-3	3	3	3
Health 151	3		
Math 111-2-3	3	3	3
Elective			3
Nat. Sci., or Bio., or			
Chem., etc. (one)	4	4	4
Physical Ed.	1	1	1
History 121-2-3	3	3	3
Men	18	18	18
Women	17	17	17

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Air Science 251-2-3	1	1	1
Education 201		3	
Ed. Psychology 242-3		3	3
English 211-2-3	3	3	3
Health 211	3		
History 201-2-3	3	3	3
Phy. Edu. (20's-50's)	1	1	1
Political Sci. 221-2-3	3	3	3
Political Sci. 313			3
*Soc. Sci. 114	3		
Men	17	17	17
Women	16	16	16

* Language requirements vary from 9-27 hours, depending upon the student's proficiency in a given language, or number of high school units completed in a given modern foreign language.

* Soc. Studies or Soc. Sci. includes one three quarter series equal to nine hours and a fourth quarter of one three hour course in a second field. Courses may be elected from Soc. 211-12-13, Econ. 201-2-3, Geography 171-2-3. Senior year History must be European.

Junior Year	Quarter Hours Credit			Senior Year	Quarter Hours Credit		
Name of Course	*I*	*II*	*III*	*Name of Course*	*I*	*II*	*III*
History 301-2-3	3	3	3	Political Sci. 362-3 ...	3	3	
Economics 211-2-3 ..	3	3	3	Political Sci. 450	3		
Political Sci. 321-2-3..	3	3	3	Psychology 312	3		
Political Sci. 341-2-3..	3	3	3	Psychology 463		3	
Sociology 211-2-3	3	3	3	Philosophy 323 or 301.		3	
History 371			3	Education 462	3		
Education 301	3			Education 472			15
Education 387		3		Electives	6	9	
	18	18	18		18	18	15

COURSES IN POLITICAL SCIENCE

221-2-3. *American Government: National, State and Local.* (9) 221-2 *National:* An introductory course which deals with the foundation, organization, and principles of the national government. Attention focused on the relations of the citizens to the government and the rights, duties, and obligations of citizens. 223. *State and Local:* An analysis of the structure, principles and operations of the state and local units of government. Illustrative material is drawn largely from Tennessee.

312. *The Legislative Process.* (3) An examination of the structure and methods of transacting business in the American Congress and State Legislatures.

313. *Tennessee State Government.* (3) 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 government of selected European countries with special attention given to the development of their political systems both in theory and practice. Comparison with American institutions 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) Constitutional and political development in China and Japan. Consideration given to policies and international relations.

341-2-3. *International Relations.* (9) An examination 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. Attention focused on an analysis of the problems of the Dominions and dependent areas with special consideration given to the problems of imperial strategy and their bearings on international policies.

353. *Government of Russia.* (3) Deals with the theory, structure, functions, operations, powers, problems and trends of the Russian government under Soviet rule.

362-3. *American Political Parties and Policies.* (6) The first quarter deals with 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. The second quarter is designed to analyze 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 functions and expression of public opinion.

421-2-3. *Public Administration.* (9) 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.

431-2-3. *American Constitutional Law.* (9) Devoted to 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 designed to examine the rights and duties of states in their normal relations; war neutrality; intervention and blockade.

450. *Senior Project Writing.* (3)

451-2. *Government and the Economic Order.* (6) Deals with constitutional principles as they apply to the regulation of business. Emphasis placed on Federal and State regulation of public utilities, labor, securities, communications, transportation, housing, commerce and social security.

453. *American Diplomacy.* (3) Examines the more important principles of American diplomacy and their applications as basis for the understanding of the foundation of American foreign policy. Prerequisites: Political Science.

461. *Western Political Thought.* (3) 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 Nineteenth century revolutions as basis for contemporary systems of Democracy, Communism and Fascism.

DEPARTMENT OF MODERN FOREIGN LANGUAGES

ALMA T. WATKINS, Ph.D., *Head*

The Department of Modern Foreign Languages offers the Bachelor of Arts degree. A minimum of 192 quarter hours with an average grade of "C" or above is required for graduation.

Students who elect a major in romance languages, French and Spanish, shall present twenty-seven quarter hours of course work in one romance language and not less than eighteen quarter hours in an additional romance language; these courses to be based upon two or more units of high school credit in the major language elected. Otherwise the student shall offer thirty-six quarter hours in one romance language with not less than twenty-seven quarter hours in courses numbered above 300, and twenty-seven quarter hours in an additional language with not less than eighteen quarter hours in courses numbered above 300. The twenty-seven quarter hours must include nine quarter hours of literature from the 300 series, three quarter hours of French or Spanish phonetics, six quarter hours of advanced oral and written French or Spanish composition, and nine additional quarter hours from the 400 series. The eighteen quarter hours elected from the additional language must include nine quarter hours of literature from the 300 series, three quarter hours of phonetics (course number 421), and six quarter hours of advanced oral and written composition (courses number 422 and 423). Courses will be chosen by the student in consultation with his adviser. Students who anticipate obtaining the Master of Arts degree in the department must pursue this curriculum.

Students who elect a minor in romance languages must present eighteen quarter hours of course work including nine quarter hours of literature in the 300 series, three quarter hours of phonetics (course number 421), and six quarter hours of advanced oral and written composition (courses number 422 and 423) in the two languages elected.

Students who elect a major in French shall present thirty-six quarter hours based upon two or more units of high school credit; otherwise forty-five quarter hours will be required with not less than twenty-seven quarter hours in courses numbered above 300. These courses must include nine quarter hours of literature in the 300 series, three quarter hours in phonetics (French 421), six quarter hours in advanced oral and written composition (French 422 and 423), and nine additional quarter hours in courses in the 400 series. Courses will be chosen by the student in consultation with his adviser.

A student who elects a minor in French must present eighteen quarter hours of course work, including nine quarter hours of literature from courses

in the 300 series, three quarter hours of phonetics (French 421), and six quarter hours in advanced oral and written composition (French 422 and 423).

Students who elect a major in Spanish shall present thirty-six quarter hours based upon two or more units of high school credit; otherwise forty-five quarter hours will be required with not less than twenty-seven quarter hours in courses numbered above 300. These courses must include nine quarter hours of literature in the 300 series, three quarter hours in phonetics (Spanish 421), six quarter hours in advanced oral and written composition (Spanish 422 and 423), and nine additional quarter hours in courses in the 400 series. Courses will be chosen by the student in consultation with his adviser.

A student who elects a minor in Spanish must present eighteen quarter hours of work, including nine quarter hours of literature from courses in the 300 series, three quarter hours of phonetics (Spanish 421), and six quarter hours in advanced oral and written composition (Spanish 422 and 423).

All majors in the department are required to write a senior project.

Students who enter with advanced credits must take the proficiency examination in the language elected for proper placement.

For graduation without Teacher Education in the Department of Modern Foreign Languages, majors are required to take the following programs:

1. The Liberal Arts Core of 57 quarter hours.
2. The required courses of the Department for all majors, including the Senior Project.
3. A second language of 36 hours.
4. A minor in a related field.
5. 18 credit hours of electives taken in consultation with the adviser or Department Head.

All courses in Modern Foreign Languages are to be followed in sequence and a minimum grade of "C" is to be maintained.

Majors receiving the B.A. degree in Modern Foreign Languages are strongly advised to follow the Teacher Education Program.

TEACHER EDUCATION CURRICULA IN MODERN FOREIGN LANGUAGES

CURRICULUM IN ROMANCE LANGUAGES

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
French or Spanish 101-2-3	3	3	3
Eng. 101-2-3	3	3	3
Bio. 101-2-3 or Chem. 111-12-13 or Physics 211-12-12 or Nat. Sci. 121-22-23	4	4	4
Social Studies 111-12-13 or Sociology 211-12-13 or History 121-22-23	3	3	3
Health 211 or 212 or Nutrition 212	3		
Music 131		3	
Education 201			3
Physical Ed. 11-12-13	1	1	1
Air Science I (M)	1	1	1
Men	18	18	18
Women	17	17	17

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
French or Spanish 201-2-3	3	3	3
English 211-212-213	3	3	3
Minor	3	3	3
Social Studies 114	3		
Psychology 242-243		3	3
Math 111-12-13	3	3	3
Physical Ed. 20's to 50's	1	1	1
Air Science II (M)	1	1	1
Men	17	17	17
Women	16	16	16

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
French or Spanish 311-2-3	3	3	3
Minor	3	3	3
Education 301	3		
French or Spanish 421-2-3	3	3	3
Electives or History 201-2-3	3	3	3
Psychology 312	3		
MFL 371		3	
Education 387			3
Philosophy			3
Education 462		3	
	18	18	18

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
French or Spanish 441-2-3	6		3
Minor	6		3
Psychology 463			3
Major or Electives	3		9
Education 471-2		15	
Senior Project 450	2		
	18	15	18

CURRICULUM IN FRENCH

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
French 101-2-3	3	3	3
English 101-2-3	3	3	3
Biology 101-2-3 or Chemistry 111-12-13 or Natural Science 121-22-23	4	4	4
Social Studies 111-12-13 or Sociology 211-12-13 or History 121-2-3	3	3	3
Health 211 or 212 or Nutrition 212	3		
Music 131		3	
Education 201			3
Physical Ed. 11-12-13	1	1	1
Air Science I (M)	1	1	1
Men	18	18	18
Women	17	17	17

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*II*
French 201-2-3	3	3	3
English 211-12-13	3	3	3
Minor	3	3	3
Social Studies 114	3		
Psychology 242-243		3	3
Math 111-12-13	3	3	3
Physical Ed. 20's to 50's	1	1	1
Air Science I (M)	1	1	1
Men	17	17	17
Women	16	16	16

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
French 311-12-13	3	3	3
Minor	3	3	3
Education 301	3		
French 421-22-23	3	3	3
Electives or History 201-2-3	3	3	3
Psychology 312	3		
MFL 371		3	
Education 387			3
Philosophy 323			3
Education 462		3	
	18	18	18

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
French 441-42-43	6		3
Minor	6		3
Psychology 463			3
Major or Electives	6		9
Education 471-2		15	
Senior Project 450		0	
	18	15	18

CURRICULUM IN SPANISH

Freshman Year *Name of Course*	*Quarter Hours Credit* *I*	*II*	*III*
Spanish 101-2-3	3	3	3
English 101-2-3	3	3	3
Biology 101-2-3 or Chemistry 111-12-13 or Natural Sci. 121-22-23	4	4	4
Social Studies-111-12-13 or Sociology 211-12-13 or History 121-22-23	3	3	3
Health 211 or 212 or Nutrition 212	3		
Music 131		3	
Education 201			3
Physical Ed. 11-12-13	1	1	1
Air Science I (M)	1	1	1
Men	18	18	18
Women	17	17	17

Sophomore Year *Name of Course*	*Quarter Hours Credit* *I*	*II*	*III*
Spanish 201-2-3	3	3	3
English 211-12-13	3	3	3
Minor	3	3	3
Social Studies 114	3		
Psychology 242-243		3	3
Math 200 or Math 111-12-13	3	3	3
Physical Ed. 20's to 50's	1	1	1
Air Science II (M)	1	1	1
Men	17	17	17
Women	16	16	16

Junior Year *Name of Course*	*Quarter Hours Credit* *I*	*II*	*III*
Spanish 311-12-13	3	3	3
Minor	3	3	3
Education 301	3		
Spanish 421-22-23	3	3	3
Electives or History 201-2-3	3	3	3
Psychology 312	3		
MFL 371		3	
Education 387			3
Education 462		3	
Philosophy 323			3
	18	18	18

Senior Year *Name of Course*	*Quarter Hours Credit* *I*	*II*	*III*
Spanish 441-42-43	6		3
Minor	6		3
Psychology 463			3
Major or Electives	6		9
Education 471-2		15	
Senior Project 450		0	
	18	15	18

COURSES IN GERMAN

101-2-3. *Elementary German.* (9) Aims to develop the ability to write, read and understand simple German. A functional vocabulary is built up, and the essentials of grammar are stressed. Supplemented with graded reading.

201-2-3. *Intermediate German.* (9) Consists of intentive and extensive reading of graded German works (literary and scientific) Fluency and accuracy of comprehension are the primary objectives.

311-12-13. *Introduction to German Literature.* (9) Consists of selected readings to give the student an acquaintance with outstanding writers, ideas and movements in German literature from the beginning of the German Language and literature to the contemporary period.

COURSES IN FRENCH

101-2-3. *Elementary French.* (9) A course for beginners which consists of pronunciation, grammar and graded reading.

201-2-3. *Intermediate French.* (9) A continuation of French 101-2-3 consisting of a systematic review of grammar, dictation, conversation, and reading. Stress is placed on ability to read and easy conversation.

311-12-13. *Aspects of French Literature.* (9) An introductory course based on readings selected to give the students an acquaintance with some of the more important personalities, movements, and ideas of French literature with emphasis placed on the 17th, 18th, and 19th centuries.

371. *Methods of Teaching Foreign Languages.* (3) A basic course in modern language teaching. It acquaints the student with the recent developments in methods, materials and texts. Required of those wishing to be certified as teachers of modern foreign languages.

381-2-3. *Survey of French Literature.* (9) This course begins with the Middle Ages and emphasizes the works of the best authors to the present.

411-12. *The Classical Age of French Literature.* (6) Stresses the origins and foundations of French Classicism and its main representatives. Offered in alternate years.

413. *Main Ideas of the Eighteenth Century.* (3) Emphasizes the theories and philosophies of the works of the best authors of the century.

421. *Phonetics.* (3) Consists of an analysis of the sounds of French and of the operation of phonetic laws in the development of the French language.

422-23. *Advanced Grammar, Oral and Written Composition.* (6) A grammatical analysis of selected prose works; and oral and written composition. Required of those wishing to be certified as teachers of French.

441-42-43. *French Civilization.* (9) A course in the history of French civilization and culture, the arts, sciences and institutions of France to the present.

451-52-53. *Modern French Literature.* (9) Stresses the nineteenth century in the novel, drama and poetry. The following aspects of French literature form the contents of the course: Romanticism, Realism, the Parnassian reaction in poetry, Naturalism and Symbolism. Offered in alternate years.

471-72-73. *French Literature of the Twentieth Century.* (9) Alternates with French 451-2-3. Consists of critical studies in the works of leading figures in the novel, drama, and poetry and stresses the philosophy and theories of selected contemporary writers.

COURSES IN SPANISH

101-2-3. *Elementary Spanish.* (9) A course for beginners which consists of pronunciation, grammar, and graded reading.

201-2-3. *Intermediate Spanish.* (9) A continuation of Spanish 101-2-3 consisting of a systematic review of grammar, dictation, conversation and reading. Stress is placed on ability to read and easy conversation.

311-12-13. *Aspects of Spanish Literature.* (9) An introductory course based on readings selected to give the student an acquaintance with some of the more important personalities, movements and ideas of Sanish Literature with emphasis placed on the 17th, 18th, and 19th centuries.

321-2-3. *Spanish American Literature.* (9) Consists of selected readings to give the student an acquaintance with the important ideas, personalities, and types of literature of the Colonial Period, the Gaucho Literature and Modernism. Offered in alternate years.

371. *Methods of Teaching Foreign Languages.* (3) A basic course in Modern Language teaching. It acquaints the students with the recent developments in methods, materials and texts. Required of those wishing to be certified as teachers of modern foreign languages.

381-2-3. *Survey of Spanish Literature.* (9) Begins with the Cid and emphasizes the works of the best authors to the present. Offered in alternate years.

411-12-13. *Spanish Prose and Poetry of the Golden Age.* (9) Consists of a study of the Picaresque Novel, Cervantes and the Comedia. Offered in alternate years.

421. *Phonetics.* (3) Consists of an analysis of the sounds of Spanish and of the operation of phonetic laws in the development of the Spanish language.

422-23. *Advanced Grammar, Oral and Written Composition.* (6)A grammatical analysis of selected prose works; oral and written composition. Required of those wishing to be certified as teachers of Spanish.

441-2-3. *Spanish and Spanish American Civilization.* (9) The history of Spanish and Spanish American civilization, culture and institutions.

451-2-3. *Modern Spanish Literature.* (9) Survey of the 19th Century Novel, Drama and Poetry stressing the following aspects: Romanticism, Realism, Regionalism and Modernism. Offered in alternate years.

DEPARTMENT OF PHYSICS AND MATHEMATICS

R. O. Abernathy, Ph.D., *Head*

The Department of Physics and Mathematics offers programs leading to the degrees of Bachelor of Science and Bachelor of Arts with a major in Physics or Mathematics.

Candidates for degrees must complete a minimum of 195 quarter hours of prescribed and elective course work.

The courses in physics and mathematics are designed to serve (1) those who wish to major or minor in physics or mathematics; (2) those who require physics and/or mathematics as a part of their pre-professional training; (3) those majoring in areas other than physics or mathematics to whom the knowledge and techniques of physics and/or mathematics are desirable adjuncts.

Candidates for degrees with majors in physics or mathematics must have a minimum grade of "C" in each required course in the major field, and a minimum average of "C" for all courses in the major field. Electives in the major field must be selected from courses at the 300- and/or 400-level.

All courses offered for major or minor credit in physics or mathematics must be approved by the Department of Physics and Mathematics.

CURRICULUM IN PHYSICS

Majors in physics are required to complete a minimum of 49 (45 for teacher education) quarter hours of course work in physics, with a minimum of 36 (33 for teacher education) quarter hours selected from physics courses numbered 300 and above. Minors in physics must complete a minimum of 30 quarter hours of course work in physics with a minimum of 18 quarter hours selected from physics courses numbered 300 and above.

BACHELOR OF ARTS OR BACHELOR OF SCIENCE PROGRAM

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 101-2-3	3	3	3
Math 161-2-3	5	5	5
Physical Ed. 11-12-13	1	1	1
Health 151	3		
Music 131		3	
Art 133			3
Soc. Science	3	3	6
Air Science 151-2-3 (Men)	1	1	1
Men	16	16	19
Women	15	15	18

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Physics 211-2-3	4	4	4
Math 261-2-3	5	5	5
German or French	3	3	3
Physical Ed. 20's to 50's	1	1	1
Chemistry 111-2-3	4	4	4
Air Science 251-2-3 (Men)	1	1	1
Men	18	18	18
Women	17	17	17

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Physics 311-2-3	3	3	3
Physics 321-2-3	3	3	3
English 211-2-3	3	3	3
Physics 331-2-3	2	2	2
Math 462-3; 421	3	3	3
French or German	3	3	3
	17	17	17

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Physics 412-3	3	3	
Physics 414			3
Physics 450	3		
Approved Electives	9-10	12-13	12-13
	15-16	15-16	15-16

BACHELOR OF SCIENCE PROGRAM

(Teacher Education)

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 101-2-3	3	3	3
Math 161-2-3	5	5	5
Health 151	3		
Music 131		3	
Art 133			3
Social Science Sequence	3	3	6
Physical Ed. 11-2-3	1	1	1
Air Science (Men)	1	1	1
Men	16	16	19
Women	15	15	18

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Math 261-2-3	5	5	5
Physics 221-2-3	4	4	4
Education 201	3		
Psychology 242-3		3	3
Chemistry 111-2-3	4	4	4
Physical Ed. 20 to 50	1	1	1
Air Science (Men)	1	1	1
Men	18	18	18
Women	17	17	17

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 211-2-3	3	3	3
Physics 311-2-3	3	3	3
Math 462-3	3	3	
Philosophy 323			3
Health 212	3		
Psychology 312		3	
Science 371			3
Education 301, 387	3	3	
German or French	3	3	3
	18	18	15

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Physics 321-2	3	3	
Educ. 462	3		
Psychology 463		3	
Education 471-2			15
Physics 331-2-3	4	2	
Physics 412-3; 414	3	6	
Physics 450	3		
Approved Elcetives		3	
	16	17	15

COURSES IN ASTRONOMY

211-212. *Descriptive Astronomy* (3-3). An elementary introduction to the astronomical universe. This course considers the problems of distances, motion, chemical composition of the stars, the source of stellar energy, and modern cosmological theories. The student has the opportunity to observe representative celestial objects with the telescope.

COURSES IN PHYSICS

191-192. *Biography of Physics.* (1-1). A freshman reading course designed to give the beginning physics major a descriptive account of the classical and modern concepts in physics and their historical development.

193. *Computations.* (1) Slide rule calculations and the theory governing the calculations. A brief review of trigonometry and vector algebra.

211-2-3. *College Physics.* (4-4-4) Mechanics; Heat, Sound, and Light; Electricity and Magnetism, and Modern Physics. A course in which the basic principles are presented. Required in biological and pre-medical curricula. Pre-requisite: Mathematics 111-2-3. Three lectures and one laboratory period per week.

221-2-3. *General Physics.* (4-4-4) Mechanics; Heat; Sound, and Light; Electricity and Magnetism, and Modern Physics. This course is intended for engineering students and students majoring in the physical sciences. Pre-requisite: Mathematics 161-2-3. Three lectures and one laboratory period per week.

311-2-3. *Electricity and Magnetism.* (3-3-3) This course presents the fundamentals of theoretical electricity and magnetism. Considerable emphasis is placed upon the solution of problems. Prerequisites: Math 261-2-3, Physics 221-2-3 or Physics 211-2-3. Three lectures per week.

314. *Optics.* (4) A brief review of geometrical optics and a study of physical optics including spectroscopy. Prerequisite: Physics 211-2-3 or Physics 221-2-3; Mathematics 263. Three lectures and one laboatory period per week.

321-2-3. *Mechanics.* (3-3-3) Statics and dynamics of particles and rigid bodies. Lagrange's and Hamilton's equations: fluid statics, and vibrations. Prerequisite: Physics 211-2-3 or 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 211-2-3 or Physics 221-2-3; Mathematics 261-2-3. Three lectures per week.

331-2-3. *Electrical Measurements.* (2-2-2) 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 masturing current, resistance, electromative 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.

341-2-3. *Advanced Laboratory.* (2-2-2) This course is designed to permit the student to develop a variety of laboratory skills and techniques by performing experiments of an advanced nature selected from the areas of: Mechanics, Heat, Sound, Light and Modern Physics. Prerequisites: Physics 221-2-3; Mathematics 261-2-3. Two laboratory periods per week.

412-3. *Atomic and Molecular Structure.* (3-3) The classical and modern concepts of the atom and radiation are developed; introduction to molecular structure and the chemical bond. Prerequisites: Physics 211-2-3 or Physics 221-2-3; Mathematics 261-2-3. Three lectures.

414. *Radioactivity and Nuclear Physics.* (3 An extensive survey of the phenomena and methods of nuclear physics; fision; isotopic tracers; medical radiology; cosmic rays. Prerequisites: Physics 221-2-3 or Physics 211-2-3; Mathematics 261-2-3. Three lectures.

450. *Senior project.* (3)

CURRICULUM IN MATHEMATICS

Majors in mathematics are required to complete a minimum of 60-quarter hours of course work in mathematics exclusive of Mathematics 191-2-3 and 291-2-3. A minimum of 30 quarter hours must be selected from courses numbered 300 and above. Minors in mathematics must complete a minimum of 15 quarter hours selected from mathematics courses numbered 300 and above.

Required Courses

Mathematics 161-2-3, 261-2-3, 371-2-3, and 450 are required of all majors. Mathematics 371 is required of all majors in teacher education.

Survey Courses

Mathematics 191-2-3-4, 291-2-3, 391-2-3, 491-2-3 are one (1) quarter hour credit courses designed to broaden the student's scope, and at the same time to give a preview of material the student will encounter in later courses. Although these courses are not required for graduation, all majors are urged to include one of these courses in their programs each quarter.

Theoretical and Applied Groups

Juniors and Seniors are offered two types of programs, a theoretical program and an applied one.

The theoretical program is designed primarily for students planning to do graduate study in pure mathematics. In addition to the required courses, their programs should include Mathematics 331-2-3, 374, 451-2-3, 473, and selected topics of Mathematics 480.

Students who are more interested in the application of mathematical techniques may choose their electives from Mathematics 311-12-13, 461-2-3, 472, and selected topics of Mathematics 480.

BACHELOR OF ARTS OR BACHELOR OF SCIENCE PROGRAM

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 101-2-3	3	3	3
Math 161-2-3	5	5	5
Health 151	3		
Music 131		3	
Art 133			3
Soc. Science	3	3	6
Phy. Ed. 11-12-13	1	1	1
Air Science I (Men)	1	1	1
Men	16	16	19
Women	15	15	18

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 211-2-3	3	3	3
Math 261-2-3	5	5	5
Biology or Chemistry 111-2-3	4	4	4
French or German	3	3	3
Phy. Ed. 11-12-13	1	1	1
Air Science II (Men)	1	1	1
Men	17	17	17
Women	16	16	16

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Math 361-2-3	3	3	3
Mathematics (Electives)	6	6	6
Physics 221-2-3	4	4	4
French or German	3	3	3
	16	16	16

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Math 450		3	
Mathematics (Electives)	6	3	3
Other Approved Electives	12	12	15
	18	18	18

BACHELOR OF SCIENCE PROGRAM
(Teacher Education)

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 101-2-3	3	3	3
Math 161-2-3	5	5	5
Health 151	3		
Music 131		3	
Art 133			3
Phy. Ed. 11-12-13	1	1	1
Soc. Science	3	3	6
Air Science I (Men)	1	1	1
Men	16	16	19
Women	15	15	18

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
French or German	3	3	3
Math 261-2-3	5	5	5
Biology 111-2-3 or Chemistry 111-12-13	4	4	4
Education 201	3		
Psychology 242-3		3	3
Phy. Ed. 20 to 50	1	1	1
Air Science II (Men)	1	1	1
Men	17	17	17
Women	16	16	16

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Math 361-2-3	3	3	3
Physics 211-2-3 or Physics 221-2-3	4	4	4
Education 301; 378; Math 371	3	3	3
English 211-2-3	3	3	3
Psychology 312		3	3
Mathematics (Electives)	3	3	6
	16	19	19

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Philosophy 323		3	
Math 450		3	
Education 462	3		
Psychology 463		3	
Health 212	3		
Education 471-2			15
Mathematics (Electives)	3	3	
Other Approved Electives	6	3	
	15	15	15

103. *Mathematics for Teachers.* (3) Designed to introduce the prospective elementary school teacher to some of the new concepts in mathematics. Prerequisite: Math 112 or equivalent.

111-112-113. *Introduction to College Mathematics I-II-III.* (3-3-3) Fundamental operations in arithmetic and algebra, equations, functions, graphs, exponents, logarithms, and trigonometric functions.

161-162. *Unified Algebra and Trigonometry I-II.* (5-5) An integrated course in algebra and trigonometry intended for the mathematics, science and engineering major.

163. *Analytic Geometry.* (5) Coordinate schemes, equations and their logic, translation and rotation of axes, lines, circles, parabolas, ellipses, hyperbolas. Prerequisite: Math 162 or equivalent.

173. *Mathematics of Finance.* (3) Compound interest and discount, annuities, amortization and sinking funds, depreciation, bonds, life annuities, life insurance. Prerequisite: Math 112.

181H-2-3. *Honors Mathematics.* (9) Freshman mathematics at an accelerated pace. Algebra, trigonometry and analytic gometry from the modern point of view. The course terminates with a brief introduction to differential and integral calculus.

191. *The Algebra of Sets and Logic.* (1) An elementary treatment of the basic concepts of the theory of sets and propositional logic.

192. *Introduction to Vector Algebra.* (1) A brief exposition of the algebra of vectors, and some applications of vectors.

193. *Intuitive Calculus.* (1) A brief survey of the underlying ideas of differential and integral calculus. Emphasis will be on the conceptual aspects of the subject, rather than technique and applications.

194. *Computer Programming I.* (1) The FORTRAN language and the programming of problems in algebra, trigonometry, and elementary calculus.

261-2-3. *Calculus I-II-III.* (5-5-5) Differentiation and integration of algebraic and transcendental functions with applications; infinite series and approximate computation. Prerequisite: Math 163.

291. *Elements of Finite Probability.* (1) A brief survey of discrete probability and applications. Prerequisite: Consent of the instructor.

292. *Elements of Finite Statistics.* (1) An elementary exposition of the basic statistical concepts. Prerequisite: Consent of the instructor.

293. *Computer Programming II.* (1) Basic components of a general purpose computer and the writing of programs for the IBM 1620 Computer. Prerequisite: Consent of the instructor.

311-12. *Probability and Statistics I-II.* (3-3) Probability distributions; expected values; moments; limit theorems, sampling and sampling distributions; tests of hypotheses. Prerequisite: Math 263 or equivalent.

313. *Numerical Analysis (formerly 472).* (3) Methods of numerical computation; interpolations; numerical integration and differentiation; solution of algebraic, transcendental, and differential equations. Prerequisite: Math 263 or equivalent.

331-332-333. *Concepts of Modern Geometry I-II-III.* (3-3-3) Advanced plane geometry; synthetic and analytic projective geometry and its relationship to Euclidean and other geometries. (Offered in alternate years. Not offered in 1965-1966). Prerequisite: Math 263 or equivalent.

361-362. *Linear Algebra I-II.* (3-3) Definition and basic operations with matrices; vectors and linear equations; eigenvalues and eigenvectors; infinite series of matrices. Prerequisite: Math 263 or equivalent.

363. *Theory of Equations.* (3) Complex numbers; theorems and methods relating to the solutions of polynomial equations; numerical approximations. Prerequisite: Math 263 or equivalent.

364. *Introduction to Modern Algebra.* (3) Consideration of fundamental mathematical systems and concepts of modern algebra, including integral domains, groups, fields, and rings.

371. *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. Prerequisite: Math 263 or consent of the instructor.

391. *Infinite Series.* (1) Convergent and divergent series; Taylor's and MacLaurin's series; Fourier series and othogonal functions. (Offered in alternate years. Not offered in 1965-1966). Prerequisite: Consent of instructor.

392. *Algebra of Complex Numbers.* (1) Introduction to the algebra and geometry of complex numbers with applications. (Offered in alternate years. Not offered 1965-1966). Prerequisite: Consent of instructor.

393. *Calculus of Complex Numbers.* (1) An intuitive approach to the theory and applications of functions of a complex variable. (Offered in alternate years. Not offered 1965-1966). Prerequisite: Consent of instructor.

450. *Senior Project.* (3) Individual study and written presentation of a special topic in mathematics or the teaching of mathematics. Required of all prospective graduating seniors in the department. Prerequisite: Senior standing.

451-452. *Functions of a Real Variable I-II.* (3-3) Basic properties of the real numbers; theory of limits, continuity, uniform continuity, and convergence; calculus of functions of several real variables; implicit funcitions. Prerequisite: Math 263 or equivalent.

453. *Functions of a Complex Variable.* (3) Basic definitions and topological concepts: differentiation and integration of functions of a complex variable; the elementary functions, Cauchy's theorem, Taylor series, Laurent series, and calculus of residues. Prerequisite: Math 263 or equivalent.

461. *Advanced Calculus (formerly 421).* (3) Geometry of space, differential and integral calculus of functions of several variables; infinite series. Prerequisite: Math 263 or equivalent.

462-3. *Differential Equations I-II.* (3-3) Classification and solution of common types of elementary differential equations; applications, introduction to partial differential equations. Prerequisite: Math 263 or equivalent.

472. *History of Mathematics (formerly 322).* (3) The origin and development of mathematical ideas beginning with geometry and algebra and continuing through selected topics in modern mathematics. Prerequisite: Math 263 or consent of the instructor.

473. *Introduction to Mathematical Logic.* (3) Introduction to the nature of valid inference and its relation to the scientific method. Principles of reasoning; inductive and deductive processes; the sentential calculus. (To be offered in alternate years beginning in 1964-65). Prerequisite: Math 263 or consent of the instructor.

480 (*A through J*). *Advanced Topics in Mathematics.* (3) Special topics in mathematics to be offered according to the preferences and needs of the students.

A. Boolean Algebra
B. Combinatorial Analysis
C. Elementary Number Theory
D. Operational Calculus
E. Linear Operators
F. Vector Calculus
G. Tensor Calculus
H. Metric Differential Geometry
J. Elementary Topology

491. *Linear Programming.* (1) Elements of linear programming with applications to economic and industrial problems. Prerequisite: consent of instructor.

492. *Finite Markov Chains.* (1) A brief survey of the theory of Markov Chains and its applications. Prerequisite: Consent of instructor.

493. *Difference Equations.* (1) Linear difference equations and applications in the social sciences. Prerequisite: Consent of instructor.

DEPARTMENT OF SCIENCE EDUCATION AND GEOGRAPHY

KENNETH F. JERKINS, Ph.D., *Head*

The department's program is designed to meet the needs of two groups of students: 1. Those who wish to qualify for secondary school science teaching in several science fields and 2. Those from other curricula of the university who wish to take service courses in the area of science education and/or geography.

To serve these needs, the department offers undergraduate curricula leading to the Bachelor of Science degree with a major in science education. These curricula are designed for prospective teachers of science.

There are two programs designed for undergraduate majors in science education. The first program, designated as the "Mathematics and Physical Science" curriculum, provides teacher education in mathematics and the physical sciences (i.e., physics and chemistry). A minimum of 75 quarter hours in mathematics and the physical sciences (chemistry, physics, geology, geography and astronomy) is required.

Of the 112 quarter hours required in the major area (mathematics, physics, chemistry, earth sciences and science education, 43 hours must be in courses at the junior and senior level. The total program requiring 193 quarter hours, must include a minimum of 72 quarter hours of courses at the 300-400 level.

The second program, designated as the "Science" curriculum, provides teacher education in the natural sciences, (i.e., biology, chemistry, physics and general science). A minimum of 48 quarter hours in the natural sciences with courses in at least three of the following areas is required: biology, chemistry, geology and physics. The student may include integrated science courses.

Of the 91 quarter hours required in the major area (natural sciences and science education), 28 hours must be in courses on the junior and senior levels. The total program requiring 193 quarter hours, must include a minimum of 64 quarter hours of courses at the 300-400 level.

A minimum grade of C in each required course of the major sequence is necessary for maintenance of good standing in the selected curriculum.

An undergraduate minor program is available in geography. A minor in geography consists of a minimum of 27 quarter hours of courses in geography, including Geography 171-2-3.

Curriculum for the Bachelor of Science Degree with a Major in Science Education
"Mathematics and Physical Science"

Freshman Year	Quarter Hours Credit		
Name of Course	*I*	*II*	*III*
Freshman English 101-2-3	3	3	3
Social Studies 111-2-3	3	3	3
Mathematics 161-2-3	5	5	5
Chemistry 111-2-3	4	4	4
Phy. Educ.	1	1	1
Air Science 151-2-3 (M)	1	1	1
Men	17	17	17
Women	16	16	16

Sophomore Year	Quarter Hours Credit		
Name of Course	*I*	*II*	*III*
English 211-2-3	3	3	3
Education 201	3		
Psychology 242-3		3	3
Physics 211-2-3	4	4	4
Geog. 171-2-3	3	3	3
Chemistry 211-2	4	4	
Soc. St. 114			3
Phy. Educ.	1	1	1
Air Science 251-2-3 (M)	1	1	1
Men	19	19	18
Women	18	18	17

Junior Year	Quarter Hours Credit		
Name of Course	*I*	*II*	*III*
Chem. 311-2-3	4	4	4
Educ. 301, 387	3	3	
Psychology 312			3
Mathematics 311	3		
Geology 361			4
Mathematics 261-2	5	5	
Geog. 261	3		
Health 212 or Nutrition 212		3	
Phil. 301			3
Science 371, 425		3	3
	18	18	17

Senior Year	Quarter Hours Credit		
Name of Course	*I*	*II*	*III*
Math. 471	3		
Education 471-2		15	
Psychology 463			3
Educa. 462			3
Sci. Educ. 450, 427	3		3
Science Electives (300-400 courses)	6		3
Phil. 323	3		
	15	15	12

Curriculum for the Bachelor of Science Degree with a Major in Science Education
"Science Curriculum"

Freshman Year	Quarter Hours Credit		
Name of Course	*I*	*II*	*III*
Mathematics 161-2-3	5	5	5
Chemistry 111-2-3	4	4	4
English 101-2-3	3	3	3
Soc. Stud. 111-2-3	3	3	3
Phy. Educ.	1	1	1
Air Science (M) 151-2-3	1	1	1
Men	17	17	17
Women	16	16	16

Sophomore Year	Quarter Hours Credit		
Name of Course	*I*	*II*	*III*
Soc. Stud. 114	3		
Health 151 or 212 or Nutrition 212			3
Physics 211-2-3	4	4	4
Biology 101-2-3	4	4	4
English 211-2-3	3	3	3
Education 201	3		
Geog. 261		3	
Psychology 242-3		3	3
Phy. Educ.	1	1	1
Air Science (M) 251-2-3	1	1	1
Men	19	19	19
Women	18	18	18

Junior Year	Quarter Hours Credit		
Name of Course	*I*	*II*	*III*
Biology 202-3, 241	4	4	4
Chemistry 211-2-3	4	4	4
Educ. 301, 387	3	3	
Relig. 301, Phil. 323	3		3
Psych. 312, 463	3	3	
Educ. 462			3
Science 371, 425		3	3
	17	17	17

Senior Year	Quarter Hours Credit		
Name of Course	*I*	*II*	*III*
Sci. Educ. 450, 427	3		3
Educ. 471-2		15	
Chem. 361 and Electives or Chem. 311-2-3	8		4
Electives (300-400 courses)	3		3
Geology 361			4
	14	15	14

COURSES IN SCIENCE EDUCATION

Undergraduate

121-2-3. *Introduction to Natural Science.* (12) Basic principles from the physical and biological sciences, the place of science in human culture, and the use of the scientific method in problem solving developed through experiences in the classroom, field, and laboratory. The first two quarters are devoted to selected experiences in the areas of astronomy, geology, physics, and chemistry. The third quarter deals with biological phenomena. Three lectures and one two-hour laboratory period.

301-2. *Science for Elementary Teachers.* (6) A two quarter course which combines a survey of the science subject matter suitable for elementary schools with the methods of teaching this science. Five hours per week. Prerequisites: Science 121-2-3.

371. *Teaching of the Sciences in Secondary Schools.* (3) Materials and methods suitable for use in junior and senior high schools stressed. A course for science majors who plan to teach in secondary schools. Three two-hour periods. Prerequisites: Psychology 242-3, 312; Education 387, 371; and completion of at least 75 per cent of the major work in science.

371b. *Methods of Teaching B.S.C.S. Biology.* (3) This one quarter course is designed to present the philosophy and rationale, content, laboratory activities and teaching techniques of B.S.C.S. Biology. It is also designed to cover an understanding of B.S.C.S. versions and to review, analyze, evaluate and work with related B.S.C.S. Biology materials. Five (5) hours per week.

425. *Laboratory Practicum for Science Teachers.* (3) A laboratory course especially designed for science teachers. Students will have experience 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. Prerequisite: Science Education 371 and a major or minor in a natural science. Five hours per week.

427. *Philosophy of Science.* (3) Consideration of the evidence and logic upon which contemporary scientific concepts rest, and 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.

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.

COURSES IN GEOGRAPHY

171-2-3. *Elements of Geography.* A systematic approach to the study of the geographic regions of the world. Regional surveys include a special consideration of: physical character of the land, resources, economies, and cultures.

261. *Elements of Weather.* (3) A critical study of the atmosphere. This course will consider weather elements, weather observation, air masses, and their importance to weather.

271-2-3. *Fundamentals 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 areas.

361. *Geology.* (4) Deals with a study of the materials of the earth, the geologic processes and how they affect land forms and soil distribution. Three lectures and one laboratory or field period.

371. *United States and Canada.* (3) Recognition, analysis and interpretation of the basic physiographic features, resources and human adjustments within its several 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 United States.

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.

391. *Political Geography.* (3) A study of political relations, territorial aims and aspirations, boundaries and raw materials.

401. *The Middle East and India.* (3) Resources and economic activities in their regional setting; aggressive policies in territorial expansion.

411. *Southeastern Asia and Australia.* (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 to the French, British and other colonial policies in Africa.

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.

462. *World Climates.* (3) 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 relationship of man's activities and world climates.

DEPARTMENT OF SOCIOLOGY

SHERMAN N. WEBSTER, Ed. D., *Head*

The Department of Sociology offers two curriculums leading to the bachelor's degree, namely Social Administration and Sociology.

The curriculum in Social Administration offers courses of study at the undergraduate level leading to the degrees of Bachelor of Arts and Bachelor of Science.

The curriculum in Sociology offers courses of study at the undergraduate level leading to the Bachelor of Arts and Bachelor of Science degrees. One of the Bachelor of Science degrees is a course of study in teacher education with a concentration or major in Sociology which prepares the graduate to teach social studies on the secondary level.

COURSES IN SOCIAL STUDIES

Social Studies 111-112-113-114. Designed to acquaint the prospective teacher with an integrated, general educational approach to the understanding of basic factors in social life in terms of social adjustment and social problems, economic organization, political behavior, including international relations—all in an appropriate historical setting.

181H-2-3. *Honors Social Sciences.* (9) This course is designed to acquaint the student with the many facets of the Social Sciences including the evolution of man's culture from both the Anthropological and Sociological viewpoint. A comparative study of primitive and contemporary ways of life of the various groups of mankind throughout the world; projections into the future relative to the different philosophies and idealogies and their effect on the technological advancements of the peoples of the world.

CURRICULUM IN SOCIAL ADMINISTRATION

ANNIE B. MARTIN, MCSW, *Coordinator*

The pre-professional Social Work Curriculum is designed: (to give students some insight into the basic methods of Social Work which includes social group work, social casework and community organization; (2) to help students know the importance of understanding human behavior as a means of working with people who have social problems; (3) to provide an opportunity to apply theory to practice in both groups and casework agencies.

Students are also required to do seventy-two hours of Field Work in selected social agencies. This is a requirement of the University. The purpose of field work is to provide the student with the opportunity of apply 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 of the job.

The Curriculum of Social Administration offers the Bachelor of Science and the Bachelor of Arts Degrees.

In addition to the University requirements for graduation, the minimum Curriculum requirements are: (1) 192 quarter hours for the Bachelor of Arts degree, and 192 quarter hours for the Bachelor of Science degree, of which a minimum of 66 quarter hours for each degree must be completed in 300 and 400 level courses; (2) 45 quarter hours in the curriculum in 300 and 400 level courses for the Bachelor of Arts and Bachelor of Science degrees. Courses in which a student receives the grade of "D" must be repeated.

Students who minor in the Curriculum must complete a minimum of 18 quarter hours in 300 and 400 level courses in social administration; including 341, 342, 421, 422, 423, and 471.

Social Administration Area has memberships in the Council of Community Agencies, Nashville, and Council on Social Work Education, Undergraduate Section, New York.

CURRICULUM IN 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 101-2-3	4	4	4
Mathematics 111-2-3 ..	3	3	3
Phy. Ed. 11-12-13 ...	1	1	1
Air Science I (M) ...	1	1	1
Geography 171-2-3 ...	3	3	3
Men 18		18	18
Women 17		17	17

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
Pol. Science 221-2-3 ..	3	3	3
Psychology 221-2-3 ..	3	3	3
Economics 211			3
Phy. Education 20's to 50's	1	1	1
Air Science II (M) ..	1	1	1
Music 131, Art 133 ..	3	3	
Men 17		17	17
Women 16		16	16

Junior Year *Name of Course*	*Quarter Hours Credit* *I*	*II*	*III*
History 201-2-3	3	3	3
Sociology 322		3	
Sociology 303			3
Psychology 242	3		
Sociology 351	3		
Soc. Adm. 302		3	
Soc. Adm. 343		3	
Soc. Adm. 341	3		
Soc. Adm. 342			3
Sociology 412		3	
Sociology 451			3
Soc. Adm. 463			3
Econ. 212-3	3	3	
Soc. Adm. 303			3
	15	18	18

Senior Year *Name of Course*	*Quarter Hours Credit* *I*	*II*	*III*
Psy. 311	3		
Sociology 461	3		
Social Adm. 443			3
Social Adm. 421-2-3 ..	3	3	3
Social Adm. 482		3	
Psychology 323			3
Social Adm. 450	3		
Zoology 202		4	
Electives		3	
Polit. Science 313	3		
Social Adm. 471-3	3		3
Social Adm. 433			3
Electives			3
Art 411		3	
	18	16	18

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 101-2-3	4	4	4
Mathematics 111-2-3 ..	3	3	3
Phy. Ed. 11-12-13	1	1	1
Air Science I (M) ...	1	1	1
Men 18		18	18
Women 17		17	17

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
Pol. Sci. 221-2-3	3	3	3
Psychology 221	3		
Phy. Ed. 20's to 50's .	1	1	1
Air Science II (M) ...	1	1	1
Art 133, Music 131 ..		3	3
Men 17		17	17
Women 16		16	16

Junior Year *Name of Course*	*Quarter Hours Credit* *I*	*II*	*III*
History 201-2-3	3	3	3
Foreign Language or Economics 211-2-3 .	3	3	3
Psychology 242	3		
Sociology 322			3
Social Adm. 302	3		
Social Adm. 343		3	
Social Adm. 341	3		
Psych. 222-3		3	3
Sociology 303			3
Social Adm. 303		3	
Political Sci. 313	3		
Soc. Adm. 342			3
	18	15	18

Senior Year *Name of Course*	*Quarter Hours Credit* *I*	*II*	*III*
Sociology 461	3		
Psychology 323			3
Soc. Adm. 421-2-3 ...	3	3	3
Social Adm. 433			3
Social Adm. 471-3 ...	3		3
Social Adm. 482		3	
Zoology 202		4	
Social Adm. 450	3		
Soc. 351		3	
Soc. Adm. 443		3	
Soc. 412, 451	3		3
Soc. Adm. 463			3
	15	16	18

COURSES IN SOCIAL ADMINISTRATION

302. *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.

303. *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. Emphasis on objectives, processes and historical development of the Social Work idea.

342. *Social Welfare— Its Structure and Function.* (3) A study designed to show the many governmental and non-governmental agencies who contribute to the social welfare of all American citizens. It will also reflect a way of life, and give an awareness of the multiple, flexible possibilities of future welfare programs. Prequisite: 341.

343. *Casework Services for Children.* (3) A course designed to provide students with knowledge of the principles and practices of the seven basic case-work services for children whose parents need help in providing adequately for their care and guidance. Each service is defined with discussion as to the special help offered to a child with a description of the conditions under which it is most effective. Prerequisite: 341-421.

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. Prerequisites: Soc. Adm. 341, 421.

423. *Field Work* (Case). (3) Supervised practice in Social Agencies emphasizing case work skills within the limitations of the agencies functioning. Prerequisites: Soc. Adm. 341, 422, 433, 443, and 463.

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. Prerequisite: Soc. Adm. 341.

443. *Problems of the Aged.* (3) A course designed to present something of our population changes, to examine the financial dependence or independence of the aged, to analyze some of their needs, and to discuss the range, variety and helpfulness of the social services that are available or are being developed by, for and with the aged. Prerequisites: Soc. Adm. 341, 421, and 433.

450. *Senior Project Writing.* (3)

463. *Community Organizations.* (3) 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. Prerequisite: Soc. Adm. 341.

471. *Introduction to Group Work.* (3) 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. Prerequisite: Soc. Adm. 341.

473. *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: Social Adm. 302, 303, 341, 443, 463, 471, and Art. 411.

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. Prerequisites: 341, 471. Art. 411.

CURRICULUM IN SOCIOLOGY

MABEL W. LEATHERS, M.A., *Coordinator*

The general design of the curriculum in sociology embraces a four-fold objective: (1) to provide systematic framework for understanding the nature of human relationships; (2) to train students for employment in civil service, and community organization; (3) to prepare students for advanced specialized study in Sociology; and (4) to train students to conduct research in the fundamental problems of social science.

The Curriculum in Sociology offers courses of study at the undergraduate level leading to the degree of Bachelor of Arts and Bachelor of Science.

Students in the curriculum are required to take a minimum of one major and one minor.

In addition to the University requirements for graduation, the minimum curriculum requirements are: (1) 192 quarter hours for the Bachelor of Arts degree, 192 quarter hours for the Bachelor of Science degree, including individual or group certification, of which a minimum of 66 quarter hours for each degree must be completed in 300 and 400 level courses; (2) 45 quarter hours in the curriculum of which a minimum of 24 quarter hours must be completed in 300 and 400 level courses for the Bachelor of Arts and Bachelor of Science degrees; (3) 54 quarter hours in the social studies of which a minimum of 45 quarter hours must be completed in 300 and 400 level courses for group certification.

Students who minor in the curriculum must complete a minimum of 18 quarter hours in 300 and 400 level courses in addition to the basic courses, Sociology 211, 212, and 213.

CURRICULUM IN SOCIOLOGY

Bachelor of Arts

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
Biology, Chemistry	4	4	4
Mathematics 111-2-3	3	3	3
Physical Education 11-12-13	1	1	1
Air Science 151-2-3 (Men)	1	1	1
Men	18	18	18
Women	17	17	17

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 211-2-3	3	3	3
Foreign Language	3	3	3
Sociology 211-2-3	3	3	3
Psychology 221-2-3	3	3	3
Physical Education 30's to 50's	1	1	1
Air Science 251-2-3 (Men)	1	1	1
Geography 171-2-3	3	3	3
Men	17	17	17
Women	16	16	16

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
History 201-2-3	3	3	3
Pol. Sci. 221-2-3	3	3	3
Psychology 242			3
Speech 202		3	
Sociology 221	3		
Sociology 322		3	
Sociology 351	3		
Sociology 303			3
Sociology 393	3	3	3
Foreign Language or Music 131 and Pol. Sci. 313, Electives	3	3	3
	18	18	18

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Health 301	3		
History 300's or 400's			3
Psychology 311	3		
Sociology 461	3		
Sociology 491	3		
Sociology 442		3	
Sociology 462		3	
Sociology 450			3
Soc. Adm. 463			3
Electives	3	6	3
Economics 211-2-3	3	3	3
	18	15	15

Bachelor of Science

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 101-2-3	3	3	3
History 121-2-3	3	3	3
Biology 101-2-3	4	4	4
Geography 171-2-3	3	3	3
Mathematics 111-2-3	3	3	3
Physical Ed. 11-12-13	1	1	1
Air Science 151-2-3 (M)	1	1	1
Men	18	18	18
Women	17	17	17

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 211-2-3	3	3	3
Sociology 211-2-3	3	3	3
Psychology 221-2	3	3	
Economics 211-2-3	3	3	3
Health 151	3		
Psychology 242			3
Physical Ed. 20's to 50's	1	1	1
Air Science 251-2-3 (M)	1	1	1
Electives Music 131		3	3
Men	17	17	17
Women	16	16	16

Junior Year	Quarter Hours Credit		
Name of Course	I	II	III
History 201-2-3	3	3	3
Pol. Sci. 221-2-3	3	3	3
Pol. Sci. 313			3
Philosophy 323		3	
Sociology 221	3		
Sociology 322		3	
Sociology 351	3		
Sociology 303			3
Sociology 393		3	
Electives	3	3	3
Soc. 301 or Econ. 301	3		
	18	18	15

Senior Year	Quarter Hours Credit		
Name of Course	I	II	III
Health 301	3		
Sociology 472 or 451	3		
History 300's or 400's			3
Sociology 411	3		
Sociology 461	3		
Sociology 491	3		
Sociology 471		3	
Sociology 462		3	
Sociology 450		3	
Social Adm. 463			3
Sociology 332			3
Sociology 482			3
Electives	3	9	
	18	18	12

COURSES IN SOCIOLOGY

Sociology 211-2-3 are prerequisites for all other Sociology courses.

211-2-3. *Introduction to Sociology.* (9) This series of courses is focused upon the relationship of people to their physical and cultural surroundings and to each other. A systematic conceptual framework developed that will permit the student to view the social world and its major problems in terms other than common sense.

221. *Anthropology.* (3) Studies man's social origin with emphasis on the development of races and languages; the origin, nature and diffusion of cultures; and a comparison of the principle cultures of the world.

301. *Labor Problems.* (3) Problems of employment and labor from the standpoint of the employee, the employer, and the socio-cultural environment.

303. *Introduction to Field Study.* (3) A study of the theory and methods of social research including the structure and use of questionnaire, the schedule, the interview case histories, sociograms, sampling, etc.

322. *The Family.* (3) Principles and problems associated with the organization, disorganization and reorganization of the family in 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 martial roles and adjustments; 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. Analysis 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.

371. *Methods of Teaching Social Studies in High Schools.* (3) Designed to acquaint the prospective teacher with the most recent trends in the teaching of the social studies in regard to objectives the selection and organization of curricular materials; the selection and utilization of equipment and resources; methods of teaching; and appraisal of the result of teaching.

393. *Racial and Cultural Relations.* (3) An examination of the problems, relationships and adjustments of racial, cultural and ethnic minorities. Emphasis on the nature of these phenomena as they occur in the American social setting.

412. *Criminology.* (3) Includes an examination of 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 in conjunction with the political and economic implication of these trends at regional, national, and international levels.

442-3. *Rural Sociology.* (6) The structure of dynamics of rural life, together with a consideration of the technological and social changes in the rural community.

450. *Senior Project Writing.* (3)

451. *Juvenile Delinquency.* (3) Covers the major causes and problems involved in anti-social acts of children. A study of the methods used in prevention of delinquencies and treatment of the juvenile including probational and institutional care.

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. Designed to acquaint prospective teachers and majors in sociology with the influences of social institutions upon the child's total development. 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 analyzed.

462. *Social Institutions.* (3) Concerned with the theories relating to the development of the major social institutions, their values and changes in satisfying the basic needs of man.

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: Sociology 453 and consent of instructor.

482. *Collective Behavior.* (3) Treatment of a wide variety of collective groupings and movements; their origin, organization, membership, leadership, and dissolution. 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.

491-2. *History of Sociological Theory.* (3) Major sociological theories as represented by Comte, Spencer, Durkheim, Weber, Simmel, *et al.*, including those of the contemporary period.

DEPARTMENT OF SPEECH AND DRAMA

THOMAS E. POAG, Ph.D., *Head*

Speech

The departmental program in Speech and Drama is divided into two areas of concentration: (1) Speech and Drama and (2) Speech Correction. Courses in Radio and Television are offered as electives. Students are free to major or to minor in the two areas. The purposes of the department are to train teachers in areas of Speech and Drama for public schools, colleges, and universities; to train technicians for the educational, community, and professional theatre, and for radio and television. The department offers service courses for non-majors who are interested in speech improvement, and dramatics as a cultural or a leisure-time activity.

Curricula in Speech and Drama meet the requirements for teacher education and the needs of graduate students. Forty-eight hours of courses in Speech, Drama, and the related subjects or a combination of Speech and Drama courses are required for a major; and 18-27 hours for a minor. A minimum of 192 quarter hours are required for graduation.

A major in the department of Speech and Drama for the Bachelor of Arts degree must complete 48 hours of course work in the areas of Speech or Drama and 66 hours in the General Education core plus 18-27 hours in

Modern Foreign Languages if he plans to teach. All Speech and Drama majors are encouraged to minor in Education—36 hours; and English, 36 hours.

A major in the department of Speech and Drama for the Bachelor of Science degree must complete 48 hours or more of course work in the areas of Speech or Drama, plus 60 to 66 hours in the General Education Core; 36 hours in Education; and 41 hours in other specified courses and electives. All majors for this degree are encouraged to minor in English, 36 hours.

Majors must complete 66 hours of courses on the 300 and 400 levels for graduation.

Students concentrating in Speech Correction are required to complete 30 hours or more in Speech, six hours in Psychology; 36 hours in Education; and 12 hours in drama courses, plus the other requirements for the Bachelor of Science degree.

BACHELOR OF SCIENCE DEGREE

Curriculum in Speech Correction

Freshman Year *Name of Course*	*Quarter Hours Credit* I	II	III
Speech 111-12-13	1	1	1
English 101-2-3	3	3	3
Art 133	3		
Health 212	3		
Health 151			3
Speech 223		3	
Music 131		3	
S. Studies 111-12-13	3	3	3
Biology 101-2-3	4	4	4
Air Sci. 151-52-53 (M)	1	1	1
P. E. 11-12-13	1	1	1
Electives			3
Men	19	19	19
Women	18	18	18

Sophomore Year *Name of Course*	*Quarter Hours Credit* I	II	III
Social Studies 114	3		
Speech 201-2-3	3	3	3
Speech 211-12-13	3	3	3
Math. 111-12-13	3	3	3
English 211-12-13	3	3	3
Education 201		3	
Psychology 242			3
Air Sci. 251-52-53 (M)	1	1	1
P. E. 20's-50's	1	1	1
Men	17	17	17
Women	16	16	16

Junior Year *Name of Course*	*Quarter Hours Credit* I	II	III
Speech 321-22-23	3	3	3
Speech 381-82-83	3	3	3
Speech 371	3		
Speech 451-351	3	3	
Psychology 312			3
Philosophy 323			3
Psychology 463, 467		3	3
Education 462		3	
Psychology 463		3	
Education 301, 387	3		3
Elective	3		
	18	18	18

Senior Year *Name of Course*	*Quarter Hours Credit* I	II	III
Speech 301-2	3	3	
English 301	3		
Speech 450		3	
Speech 481-82-83	3	6	
Electives	6	3	
Education 471-2			15
Psychology	3		
Speech 361		3	
	18	18	15

BACHELOR OF ARTS DEGREE

Curriculum in Speech and Drama

Freshman Year *Name of Course*	*Quarter Hours Credit* I	II	III
Art 133	3		
Music 131		3	
Health 151			3
Speech 111-12-13	1	1	1
English 101-2-3	3	3	3
French, Spanish or German 101-2-3	3	3	3
Soc. Studies 111-12-13	3	3	3
Biology 101-2-3	4	4	4
Air Science (M) 151-152-153	1	1	1
Phys. Ed. 11-12-13	1	1	1
Men	19	19	19
Women	18	18	18

Sophomore Year *Name of Course*	*Quarter Hours Credit* I	II	III
Education 201	3		
Social Studies 114	3		
Speech 201-2		3	3
Mod. Foreign Lang.	3	3	3
English 211-12-13	3	3	3
Speech 211-12-13	3	3	3
Psychology 242-43		3	3
Air Science (M) 251-252-253	1	1	1
Phys. Ed. 20's to 50's	1	1	1
Men	17	17	17
Women	16	16	16

Junior Year *Name of Course*	*Quarter Hours Credit* I	II	III
Speech 203			3
Speech 341-372	3	3	
Speech 301-2-3	3	3	3
Math. 111-12-13	3	3	3
Education 301-387	3	3	
Psychology 312			3
English	3	3	3
Psychology 463			3
Philosophy 323	3		
	18	15	18

Senior Year *Name of Course*	*Quarter Hours Credit* I	II	III
Speech 371	3		
Philosophy 323		3	
Speech 411-12	3	3	
Speech 421-22-23	3	6	
Speech 450	3		
Health 212	3		
Education 471-2			15
Education 462	3		
Speech 361		3	
	18	15	15

BACHELOR OF SCIENCE DEGREE

Curriculum in Speech and Drama

Freshman Year *Name of Course*	*Quarter Hours Credit* I	II	III
Speech 111-12-13	1	1	1
Art 133	3		
Health 151			3
English 101-2-3	3	3	3
Soc. Studies 111-12-13	3	3	3
Biology 101-2-3	4	4	4
Phys. Ed. 11-12-13	1	1	1
Air Science (M) 151-152-153	1	1	1
History 201-2-3	3	3	3
Electives		3	
Men	19	19	19
Women	18	18	18

Sophomore Year *Name of Course*	*Quarter Hours Credit* I	II	III
Speech 201-2	3	3	
Social Studies 114			3
Speech 211-12-13	3	3	3
Math. 111-12-13	3	3	3
English 211-12-13	3	3	3
Education 201	3		
Psychology 242-43		3	3
Phys. Ed. 20's to 50's	1	1	1
Air Science (M) 251-252-253	1	1	1
Men	17	17	17
Women	16	16	16

Junior Year	Quarter Hours Credit		
Name of Course	*I*	*II*	*III*
Speech 301-2-3	3	3	3
Speech 421-22-23	3	3	3
Education 301-387 ...	3	3	
Psychology 312			3
Speech 341-42	3	3	
Health 212			3
Speech 203	3		
Education 462		3	
Psychology 463			3
Speech 371			3
	15	15	18

Senior Year	Quarter Hours Credit		
Name of Course	*I*	*II*	*III*
Speech 450	3		
Speech 381	3		
English 411	3		
Speech 461		3	
English	3	6	
Education 471-2			15
Phil. 323		3	
Speech 351	3		
Speech 311		3	
	15	15	15

Courses in Speech

201. *Fundamentals of Speech.* (3) A study of the fundamental theory and practice of voice usage as related to effective speech.

202. *Public Speaking.* (3) 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 method in which the student is trained is applicable to social and business conversation as well as to public speaking.

203. *Argumentation and Debating.* (3) The principles and practices of argumentation, an 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. *Phonetics.* (3) An introduction to the study of phonetics, the symbolization of speech sounds, kinesologic phonetics, American speech style, and applied phonetics.

213. *Speech Correction.* (3) 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 and visual hearing. Prerequisite: Speech 201.

221. *Business and Professional Speech.* (3) Designed purposely for the student with neither a major nor minor in the field of speech. Emphasis is placed on the following speech situations; business interviews, conference, reports, and similar types of business conversations. In addition, the student's individual speech is analysed and checked.

223. *Choral Speaking.* (3) 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 groups. Methods of conducting groups and selection of materials will be considered. (Class limited to 25).

321. *Lip Reading.* (3) Positions and movements involved in English Speech and the current methods used in teaching Lip Reading.

322. *Stuttering.* (3) A study of the diagnosogenic, psychogenic, and organic etiologies of stuttering. Techniques for the diagnosis, management, and therapy for primary and secondary stutters. A review of the significant research in the field of stuttering, with emphasis on etiologies and therapies. Clinical observation required. Prerequisite: Speech 213, or an introductory course in Speech Correction.

323. *Psychology of Speech.* (3) Basic factors in persuasion, technique of persuasion attention, suggestion, motivation, the audience, semantic and interview.

361. *Parliamentary Procedure.* (3) A study of the laws and techniques of parliamentary practices.

371. *Methods of Teaching High School Speech.* (3) Spring. A methods course in the teaching of speech and drama on the secondary level.

381. *Voice Science.* (3) Consideration of aspects of the phonetic, anatomic, physiologic, and physical bases of speech. (Laboratory practice.)

382. *Anatomy and Physiology of the Vocal Mechanism.* (3) Respiration, articulation, resonic, and phonation. Practice application to speech improvement.

383. *Hearing Disorders.* (3) Physiology and anatomy of auditory mechanism, symptomatology and pathology of hearing disorders, their surgical treatment, clinical and classroom management.

450. *Senior Project.* (3)

451. *History of English Language.* (3) Same as English 451. Prerequisite: Speech 201.

452. *Advanced Public Speaking.* (3) A study of the standards of criticism and techniques involved in effective public address.

461. *Public Address I.* (3) A study of Speech making from ancient time through the Renaissance and includes attention to the development of rhetorical theory.

462. *Public Address II.* (3) A study of speech making from the Renaissance to the modern times and includes attention to the development of rhetorical theory.

463. *Advanced Public Discussions.* (3) A study of types of discussions.

481. *Audiometry and Hearing Aids.* (3) Theory and practice of clinical and group audiometry; screening and diagnostic techniques, pure tone and speech audiometry. Characteristics of modern hearing aids; selection and usage problems.

482. *Language Disorders and Cerebral Palsy.* (3) Linguistic disorders, causes, and remedial training; types of cerebral palsy, causes and treatment of cerebral palsy speech.

483. *Clinical Methods and Practice in Speech Pathology.* Study of cases and practice in clinical diagnosis and remedial treatment.

491. *Theatre Workshop.* (1) This course will deal with the fundamental techniques of the rehearsal and the performance. The class will present a three-act play each quarter or a series of one-act plays. Open to members of the Tennessee State Players Guild and other students.

Drama

111-12-13. *Theatre Practice.* (3) An introduction to theatre organization and practices.

211. *Elements of Acting.* (3) Study and practice in the fundamentals of acting technique. The importance of voice, posture, gesture, and movement intheatrical expressiveness. Scenes from the world's best dramas will be analyzed and used as criteria for the course.

301. *General Dramatics.* (3) Basic principles of stage design, casting, acting, techniques, preliminary script analysis, and the technique of producing plays. The student will be required to make a prompt book and to apply this technical knowledge to the productions of the year.

302. *Play Interpretation and Direction.* (3) 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. *Playwriting.* (3) 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. Also open to junior and senior English majors.

311-12-13. *History of the Theatre.* (3) The Greeks, the Orient, Europe and America. The physical playhouse, methods of production, great actors, stage machinery, scenery, costumes and masks.

331. *Children's Theatre I.* (3) Creative dramatics. This course is concerned with the history of the Children's Theatre movement in the United States and Europe.

332. *Children's Theatre II.* (3) Organizing the children's theatre program. (grades 1-8)

333. *Children's Theatre III.* (3) Organizing the youth theatre program. (grades 9-12)

341. *Introduction to Drama.* (3) Study of drama as a literary form. Prerequisite: English 213.

342. *Speech.* (3) Modern drama. Extensive study of selections from modern European Drama. Readings and reports.

343. *American Drama.* (3) Continuation of Speech 342. Prerequisite: English 213.

372. *Radio and Television Production.* (3) An introductory course dealing with the basic principles of formulating and producing the radio and television program.

373. *Radio and Television Acting.* (3) Methods and techniques involved in the presentation of radio and television plays.

374. *Radio and Television Writing.* (3) A study of the techniques and methods used in writing the radio and television script. The student will be required to write a number of scripts for various types of programs.

411. *Shakespeare.* (3) Same as English 411.

412. *Community Drama.* (3) 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 and urban communities. General techniques in organizing and managing the Little Theatre and 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.

421. *Stage Design.* (3) The theory, technique and practice in designing stage scenery.

422. *Stagecraft.* (3) The theory, technique and practice in the making of various types of stage scenery.

423. *Stage Lighting.* (3) The theory, methods, and practice in stage lighting. Students will have practical problems in designing the lighting for various production during the year.

431. *Costume Design.* (3) The history of stage costume from the ancient times to the present. Emphasis will also be given to the theory and practice in the designing and making of costumes for the stage.

COURSES IN PHILOSOPHY

Philosophy 323. *Introduction to Philosophy.* (3) Covers a consideration of the methods of philosophical problems arising from the physical, biological, and social sciences, and from art, morality, and religion.

Philosophy 301. *Biblical Literature.* (3) A consideration of the primary document of our religious heritage. Both the Old Testament and the New Testament will be considered without imposing any sectarian or particular point of view upon the student. Interest is placed on the discovery, through the literature of the Bible and intertestamental books of the Judeo-Christian tradition, of the development of the six basic concerns of religion.

SCHOOL OF EDUCATION

MALCOLM D. WILLIAMS, Dean

Faculty:

Division of Business

Department of Economics and Business Administration

E. J. Carpenter, Carl Crutchfield, Mildred K. Gaines, I. Grissom, Lewis R. Holland, Robert M. Holzmer, R. Grann Lloyd, Mark H. McCann, Alicia M. O'Reilly, and Cass F. L. Teague.

Department of Business Education

Mildred Cater, Cecille E. Crump, Mattie L. Gordon, Mary L. Jackson, Essie L. Mott, Camille D. Robinson and William D. Stinson.

Department of Administration, Curriculum, and Instruction

Carine C. Banning, Oliver W. Crump, Dorothy W. Draper, Lois H. Daniel, C. B. Fancher, Evelyn P. Fancher, Arthur E. Franklin, Ira Gentry, M. J. Harris, Earline Hudson, Mildred S. Hurley, Darlene L. Hutson, Bessie Kean, Raymond H. Kemp, Charity Mance, N. Mays, Gretchen B. Payne, Joseph A. Payne, Tee Peacock, Ruth Marie Powell, Solomon H. Shannon, Gwendolyn Simmons, Muriel Simmons, Jessie Smith, Helen N. Teague, Arthuryne J. Welch, Malcolm D. Williams, and Roberta P. Wright.

Department of Art and Music

Art

Hiram V. Gordon, Frances E. Thompson, and C. A. Young, Jr.

Music

T. J. Anderson, D. E. Barrett, Benjamin J. Butler, Eddie T. Goins, Frank T. Greer, Edward C. Lewis, Lloyd C. Lusk, Daniel E. Owens, Loretta Perry, Sara W. Phillips, C. A. Scott, John Sharpe, Edward L. Smith, William O. Smith, and Wilhelmena R. Taylor.

Department of Psychology

Amanda Atchison, Calvin O. Atchison, Ralph Butler, Montravaille I. Claiborne, Pearl G. Dansby, Gilda M. Greenberg, Pauline M. James, Grace C. Jones, Edna Lockert, Frederick J. D. McKinney, Harold L. Phelps, and Helen Rose.

Department of Health, Physical Education and Recreation

Robert S. Cobb, J. C. Coffee, Inez Crutchfield, Will Ann Davenport, Carrie M. Gentry, Howard C. Gentry, J. Gilliam, Howard Green, Pearl K. Gunter, John A. Harvey, Thomas H. Hughes, Harold Hunter, Clyde J. Kincaide, Mable S. King, Clyde M. Leathers, Audrey Lewis, Shannon D. Little, John A. Merritt, Richard A. Miller, E. P. Mitchell, Arthur Simmons, L. Simmons, W. A. Stevens, Henry A. Taylor, and Peggy M. Williams.

SCHOOL OF EDUCATION

MALCOLM D. WILLIAMS, Ed.D., *Dean*

Purposes of the School of Education

The basic concept for preparing teachers for service and life has been utilized as the foundation element for the development of the purposes of the School of Education, which are:

1. To prepare elementary and secondary teachers, supervisors, and administrators.
2. To provide opportunities for students to pursue research in the problems of education.
3. To assist graduates in finding teaching positions for which they are qualified and in advancing to better teaching positions after they have had teaching experience.
4. To provide students with opportunities for knowledge and understanding of the economic society in which they live and their relation and responsibility in such a society.
5. To provide a sound program of guidance and work cooperatively with the other departments and schools of the university in implementing the program.

ORGANIZATION

The School of Education is composed of one division, six departments, two curricula, and courses in Administration and Supervision, Library Science, Secondary Education, and Special Education. It is organized as follows: the Division of Business which consists of the Departments of Business Administration and Business Education; the Department of Administration, Curriculum and Instruction with a curriculum in Elementary Education and courses in Administration and Supervision, Library Science, Secondary Education, and Special Education; the Department of Art and Music with a curriculum in Music and courses in Art Education; the Department of Health and Physical Education; and the Department of Psychology.

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 preparing centers. Some departments have teacher preparing centers in Clarksville, Chattanooga, Knoxville, Lebanon, Memphis, Morristown, and Ripley, Tennessee.

Advisory System

Upon being admitted to the University, each student is assigned by the Registrar on a basis of the student's choice of school, to the Dean 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 on all schedules to be pursued. The student is urged, further, to confer with his adviser frequently, at least monthly, during each quarter.

Major advisers are members of the staff of the department in which the student is doing his major work. Major advisers counsel students on curricular and life adjustment problems.

In an effort to provide a highly effective and efficient guidance program, use is made of the following techniques: conferences, interviews, rating scales, personality tests, senior standing blanks, and a cumulative folder for each student of the School of Education.

Teacher Placement

The School of Education does not maintain a separate placement bureau from that of the University. The School of Education cooperates with the University Placement Bureau in assisting its graduates to secure teaching and administrative positions.

Every graduating senior is required to register with the University Placement Bureau which is located in the Student Union. No service charge is

Public Services

made by the Bureau of students, employees, and alumni of the University.

Throughout the year the School of Education receives many requests for services from local, county, and state agencies. In an effort to meet these requests, the following services are provided: (1) cooperation with the state in-service program in conducting short courses and summer work-conferences, (2) consultative services on local problems to school personnel throughout the state by university staff members, (3) development and distribution of materials to school personnel, and (4) cooperation with the State Department of Education in the administration of the State-wide Testing Program.

Curriculum Laboratory

The curriculum laboratory was organized at the University in the fall of 1952. The laboratory is located in Room 208 in the Education Building.

Functions of General Education

Much discussion has been held about the purpose, nature, content, and characteristics of General Education. The issues, which seem to be well defined, are centered around the characteristics of general education rather than around the content. General Education as conceived at the Tennessee Agricultural and Industrial State University is designed to develop in students those skills, understandings, attitudes, and values which will equip them for effective living and responsible citizenship in a democratic society.

The types of General Education envisioned by the University seek to provide students with an opportunity to become acquainted with broad areas of subject matter, to aid them in the discovery of their own interests and abilities, and to equip them to live more effectively with themselves and with others as citizens of a democracy.

In order that the students at the Tennessee Agricultural and Industrial State University might participate effectively in the benefits to be derived from a general education, the University has revised its curriculum to provide for its students a 60 quarter hour program, as minimum, to be taken from the General Education Core.

The general education courses may be taken from the following areas:

	Quarter Hours
Communication	9
Health, Physical Education, Personal Development, and Home and Family Living	9
Humanities	15
Natural Sciences	12
Social Studies	12
Fundamental Concepts of Mathematics	6

General Competencies Sought in General Education:

The prospective teacher should possess the ability to:

1. Improve and maintain his own health and assume his share of responsibility for protecting the health of others.
2. Communicate effectively through reading, writing, speaking, and listening.
3. Attain emotional and social adjustment through the enjoyment of a wide range of social relationships and through the experience of working cooperatively with others.
4. Think logically, relatively, and imaginatively.

5. Discriminate among moral and spiritual values and apply these values in day-to-day relationships.
6. Accept the responsibilities and exercise and privileges of democratic citizenship.
7. Appreciate beauty as it appears in nature, in literature, in music, and in the graphic and practical arts; and find means of creative expression in the arts.
8. Study and learn.
9. Understand his natural environment and its relationship to human welfare.
10. Develop an awareness of the greatness of man and of the essential oneness of men of all ages, nations, races, and creeds.

GENERAL INFORMATION ON THE TEACHER EDUCATION PROGRAM

University Undergraduate Teacher Education Executive Committee Objectives:

1. To help provide and perpetuate an institutional climate favorable to the healthy growth of a teacher education program.
2. To develop and administer teacher education policies which will offer reasonable assurance that only persons of professional promise are prepared and recommended for entry into the teaching profession.

The function of the Undergraduate Teacher Education Executive Committee for Tennessee A. & I. State University is to develop policies, and ways for implementing them, relating to admission, retention, counseling, records, curricula, and standards for completion of program in teacher education and to recommend the policies and ways for implementing them to the Dean of the Faculty, and the President of the University.

The Committee is composed of nine members as follows: Graduate School Ex Officio—1, School of Agriculture and Home Economics—1, School of Arts and Sciences—3, School of Education—2, School of Engineering—1, and the Dean of the School of Education who shall serve as Chairman of the Committee and Director of Teacher Education. All other Deans and the President of the University are ex-officio members. The Chairman of the Committee is the Director of Teacher Education and serves as the University's chief agent for undergraduate teacher education. He has the total responsibility for administering the teacher education policies approved by the Dean of the Faculty, and President of the University.

The Office of the Director of Teacher Education shall approve all students who apply for candidacy to the undergraduate teacher education program and secure a record of each applicant showing that the applicant has met standards for candidacy to teacher education as required by the policies of the Committee. The curriculum head of each teacher education curriculum will be informed of the students approved for the teacher education program in his curriculum by the Director of Teacher Education.

His Office shall get grade reports periodically on each approved student in the undergraduate teacher education program. The heads of the several teacher education curricula shall inform the Director of Teacher Education through their respective deans of any students in their curricula who are not maintaining the teacher education program's retention standards. He will notify the students who are not meeting the retention requirements that they have one quarter in which to remove their deficiencies. Students who do not remove their deficiencies and meet the retention standards during the quarter of probation are subject to be dropped from the teacher education program.

TEACHER EDUCATION ADMISSION TO CANDIDACY AND RETENTION STANDARDS

Admission

1. Each student who desires to be a candidate for admission to the teacher education program will make application to the Director of Teacher Education the 3rd quarter of his sophomore year, after he has completed 80 hours of course work, including a minimum of 6 quarter hours of professional education —course 201 Foundations of Education and Psychology 242.
2. With his application there should be attached reports showing that the student has

Passed the sophomore and English tests.
A minimum of a 2.00 average at the end of the second quarter of the sophomore year.
Passed tests in oral and written expression.
Passed the achievement test for his area of specialization (elementary or secondary)
A good character and personality rating.
An absence of uncorrectable physical and emotional handicaps deemed by the Teacher Education Committee as being of major importance.

Candidates who are not approved for admission to teacher education will not be permitted to take 300 and 400 level professional education courses until they are admitted.

A student will not be permitted to the upper division courses until he has completed all lower division courses.

A student has 3 years in which to complete his lower division courses.

Retention

To remain in the teacher education program the student must:

1. Maintain University Scholarship standards.
2. During the third quarter of the junior year (minimum of 128 quarter hours) candidates shall take the Teacher Education Examination. The candidate must show acceptable performance on the test before being admitted to student teaching.
3. Make application for student teaching through the teacher education curricula heads to the Director of Student Teaching the 3rd quarter of the junior year (minimum of 128 quarter hours). With the application should be attached reports showing that the student has
   - Met all teacher education program requirements to date.
   - Obtained a minimum grade point average of 2.25 in the courses in his teaching field with not less than a grade of C in all method courses.
   - Completed the prescribed pre-requisite professional education courses and ¾ of the prescribed courses in his major area of specialization.
   - Participated in a September Field Experience.
   - Passed a physical examination showing that he is free of any communicable diseases.
4. All students are required to carry a minimum of 15 quarter hours of student teaching and method courses, and obtain a grade point average of 2.4 Students are not permitted to do student teaching in the community in which they live.

THE SEPTEMBER FIELD EXPERIENCE

The prospective student teacher is expected to participate in the September Field Experience. *The September Field Experience* provides opportunities for the student to serve as an assistant staff member in a school of his choice near his home before the University's Fall quarter begins. This experience, which lasts for two or three weeks, helps the prospective teacher to find out what teaching is like. It often helps him to answer some personal questions about his career choice. In addition to providing beginning preparation for later participation experiences and for student teaching, it also helps students acquire background for their professional courses. In fact it is the strand of experience which often gives real meaning to other components of the program. Each student will be given guide sheets and assigned to a school. He is to return the guide sheet and his log book to the Director of Education after having had the September Field Experience.

DEPARTMENT OF ADMINISTRATION, CURRICULUM AND INSTRUCTION

CHARITY M. MANCE, Ph.D., *Head*

General Statement

The Department of Administration, Curriculum, and Instruction is designed primarily for the training of teachers. It consists of a curriculum in Elementary

Education, offering the Bachelor of Science degree; and courses in Secondary Education, Library Science, and Special Education.

The program of teacher education includes two broad areas of study: The General Education Program and the Professional Education Program.

The General Education Program, required of all departments in the School of Education, is described in the general introductory statement for the School of Education. The Professional Education program is presented below.

Professional Education

The basic pattern of professional education needed for teaching has certain common elements which apply to problems which all teachers face irrespective of the age level of the pupils who are under their supervision. In addition, preparation for teaching on the different educational levels and in various curriculum areas requires specialized training appropriate to the different areas.

The basic pattern of professional education, therefore, includes (1) core professional courses required of all persons in teacher education and (2) specialized professional courses appropriate to the different areas.

Core Professional Requirements

In planning the core professional program attention was given to those areas of study which are considered essential to the development of those understandings and competencies needed by all teachers. These areas include:

1. Orientation to the teaching profession: Historical, Philosophical, and Sociological Foundations of American Education.
2. Human Growth and Development, including an understanding of how children grow physically, emotionally, socially, and mentally, the nurture necessary for wholesome growth, and the relation between growth and acquiring or learning new behavior patterns.
3. The Psychology of Learning as applied to learning activities under the guidance of the school.
4. Understanding of School Organization, Administration, and Management.
5. Techniques of Measurement and Evaluation.
6. Skill in Curriculum Development.
7. School and Community Relations.
8. Classroom Guidance.

Professional Education Core Requirements

The following courses are required of all persons enrolled in the teacher education program.

Ed. 201—Foundations of Education
Ed. 301—School Organization, Administration, and Management
Ed. 387—Curriculum Development
Ed. 462—School and Community Relations
Psy. 242—Educational Psychology I, Human Development
Psy. 243—Educational Psychology II, Psychology of Learning
Psy. 312—Measurement and Evaluation in Public Schools
Psy. 463—Guidance For Classroom Teachers

Specialized Professional Education Requirements

The specialized professional education requirements vary according to the area or grades in which one seeks certification.

The specialized requirements, adapted to grades 1-9 or grades 7-12 include:

(1) Materials and methods of teaching appropriate to the level of certification.
(2) Supervised student teaching appropriate to an area of endorsement (at least 9 quarter hours).

These specialized requirements are outlined under the areas to which they apply.

Specialized Professional Education Requirements For Elementary Education Majors (Grades 1-9)

Ed. 321—Teaching Arithmetic in the Elementary School.
Ed. 322—Teaching of Language Arts in the Elementary School.

Ed. 323—Teaching the Social Studies in the Elementary School.
Ed. 324—Teaching Reading in the Elementary School.
Ed. 333—Seminar Workshop.
Ed. 443—Principles of Teaching in the Elementary School.
Ed. 472e—Student Teaching in the Elementary School.
Ed. 481—Early Childhood Education.

A minimum grade of "C" must be carried in order to satisfy the requirements in each of the specialized professional courses.

Specialized Professional Education Requirements For the Secondary Level (Grades 7-12)

Ed. 371—Methods Course in the Special Subject Area.
Ed. 471 & 472s—Student Teaching and general methods on the secondary school level.

Curriculum in Elementary Education

Elementary education is one of the curricula in the Department of Administration, Curriculum, and Instruction set up by the University as its agency for the professional preparation of teachers in the field of elementary education. The Bachelor of Science degree is awarded upon the satisfactory completion of this curriculum. Those who complete this program are also qualified for State teacher certification in elementary education.

General Requirements for the Bachelor's Degree in Elementary Education

All candidates for the Bachelor of Science degree must complete a minimum of 198 quarter hours (with a minimum average of 2.0) which include:

The General Education course (63 quarter hours)
A minimum of 66 quarter hours in 300 and 400 level courses
A minimum of 6 quarters of required physical education
A minimum of two years of basic Air Force Reserve Officers' Training Corps (men)
Nine quarter hours of English
Nine quarter hours of American history
The Junior English Proficiency Examination
A senior project
A major program of studies of 58 quarter hours which includes the following required courses in core and specialized elementary education: Education 101, 201, 301, 321, 322, 323, 324, 333, 387, 443, 462, 472e, 481, Psychology 242, 243, 312, and 463.
A minor program of studies. This program should be in a subject area or in a service area such as special education or library service.

SUMMARY OF COURSES REQUIRED FOR ELEMENTARY EDUCATION MAJORS

Courses	*Quarter Hour Credit*	
1. *General Education Program*		63
Communications:		9
English 101-2-3	9	
Health, Physical Education, and Personal Development or Home and Family Living		9
Health 151, 211, 212, 301, 302	6	
Nutrition 212		
Physical Education 11-12-13	3	
Humanities		15
English (Literature) 211-12-261	9	
Music 131	3	
Art 133	3	
Natural Science		12
Science 121-122-123 or Chemistry 111-112-113 or Physics 211-212-213 or Biology 101-102-103		

Social Studies		12
History 121-122-123	9	
Sociology 211 or Political Science 221, or Economics 201	3	
Mathematics 111-2	6	6
2. *Professional Education Program*		
A. Core Professional		24
Education 201	3	
Education 301	3	
Education 387	3	
Education 462	3	
Psychology 242	3	
Psychology 243	3	
Psychology 312	3	
Psychology 463	3	
B. Specialized Professional		33
Education 321	3	
Education 322	3	
Education 323	3	
Education 324	3	
Education 333	3	
Education 443	3	
Education 472e	12	
Education 481	3	
3. *Subject-Matter, Concentration*		
Language Arts		9
Speech 201-202	6	
Library Service 211	3	
Natural Sciences		6
Science 301-302	6	
Humanities		9
Music 301-302	6	
Art 310	3	
Health, Physical Education, Personal Development, Home and Family Living		9
Health 213	3	
Physical Education 243	3	
Physical Education 20, 50	3	
Social Studies		12
Geography 171-172-173	9	
American History 201-202-203	9	
Tennessee History 341 or 342	3	
Mathematics		3
Mathematics 103	3	
4. Elective (Unrestricted)		24
5. Total hours required for graduation		198

Curriculum Sequence

The curriculum sequence for each year level is presented. Each student is required to secure the approval of his faculty adviser in the Department of Administration, Curriculum, and Instruction concerning his program of work.

Recommended Course Sequence for the Elementary Education Curriculum

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 101-2-3	3	3	3
Geography 171-2-3	3	3	3
History 121-2-3	3	3	3
Mathematics 111, 112		3	3
Art 133	3		
Music 131		3	
Health (151, 211, 212, 301, 302, Nutrition 212)			3
Library Service 211	3		
Orientation	1		
P. E. 11-12-13	1	1	1
Air Science (M)	1	1	1
Women	17	16	16
Men	18	17	17

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 211-12-261	3	3	3
Science 121-122-123	4	4	4
Health (151, 211, 212, 212)	3		
Health 213		3	
Mathematics 103			3
History 201-2-3	3	3	3
Education 201	3		
Psychology 242-243		3	3
P. E. 20, 50	1	1	1
Air Science (M)	1	1	1
Women	17	17	17
Men	18	18	18

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Music 301-302	3	3	
Art 310			3
Education 321-322-323	3	3	3
Education 324		3	
Science 301-302	3	3	
Education 301			3
Education 333-387	3	3	
Psychology 312			3
Speech 20-202	3	3	
P. E. 243			3
History 341 or 342	3		
Electives			3
	18	18	18

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Education 472e	12		
Education 443	3		
Education 473		3	
Education 462		3	
Education 465			3
Education 450			3
Electives		9	6
Education 481			3
Education 463		3	
	15	18	15

Description of Courses in Education

101. *Orientation.* (1) A course required of all freshmen registered in Elementary Education; designed to orient the student into the entire field of Elementary Education and to the life of the University.

201. *Foundations of Education.* (3) A study of the historical, philosophical, and sociological foundations of the American public schools, with emphasis on the traditional function of the American public school as a local community institution.

301. *School Organization, Administration, and Management.* (3) Planned to acquaint the student with the general organization, administration, and management of public schools; the composition and responsibilities of the state, local and district school boards; the principals, supervisors, and teachers are examined critically.

321. *Teaching Arithmetic in the Elementary School.* (3) An analysis of current methods in teaching arithmetic through first-hand experiences, the place of number meaning, thinking and drill in effective learning. prerequisites: Psych. 242-243.

322. *Teaching of Language Arts in the Elementary School.* (3) A consideration of modern trends in teaching the language arts; using as tools of communication reading, spelling, literature, composition, and writing. The course also deals with the adequate training in both the subject matter and methods of teaching the language arts subjects. Prerequisites: Psych. 242-243.

323. *Teaching The Social Studies in the Elementary School.* (3) Includes a study of the objectives, scope, organization, and techniques of teaching on the elementary school level. Prerequisites: Psych. 242, 243.

324. *Teaching Reading in the Elementary School.* Includes methods, materials and modern practices and trends in the teaching of reading at the elementary school level.

332. *History of Education in the United States.* (3) A survey course of the evolution of public education in the United States. (Must be taken on the Junior or Senior level).

333. *Seminar Workshop.* (3) This course is designed to help prospective teachers plan, organize, and execute the type of work they are expected to do during the practice period; making charts, graphs, friezes with emphases on the actual construction of curriculum material together with analysis of methods involved. (Must be taken on the Junior or Senior level). (Prerequisite: Art 310—Manuscript writing.)

341. *Principles and Organization of Secondary Education.* A study of the evaluation of the present American high school, types of organization, and problems relating to the high school pupil and curricula offerings.

363. *Activities in the School Program.* (3) 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. (Must be taken on the Junior or Senior level).

371. *Special Materials and Methods in the Certified Area.* (3) Each University department preparing the prospective secondary school teacher offers a course designed to familiarize students with teaching techniques and information of special interest to the particular subject-matter area. Generally, it is best to schedule this course during the quarter preceding Education 472. An example of departmental offering is History 371, Teaching History in Secondary Schools, etc. Students should consult their departmental offerings for the appropriate course to be scheduled.

387. *Curriculum Development.* (3) A critical study of the reorganization, construction, and administration of the school curriculum in the light of modern educational principles and objectives. Prerequisites: Education, 201, Psychology 242, 243.

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 321-2-3, 333, Psychology, 242-43. Must be taken along with Education 472e, Student Teaching. (Senior level only).

450. *Senior Project Writing.* (3) Designed to give opportunity for students to work individually on any problem of their choice in the area of elementary education. If a student has completed 60 hours of 300 and 400 level courses this course may be taken without credit. (Must be taken on the Senior level.)

Education 461 (formerly 561) *Organization of School Staffs for Curriculum Improvement.* (3) Designed to provide opportunities for study of curriculum practices with special emphasis on the Tennessee State program of Curriculum Improvement and other representative patterns of over-all organization. Special curriculum improvement problems will be studied. (Undergraduate and graduate credit.)

462. *School and Community Relations.* (3) Designed to alert the student to the relationship of school and community in building citizens (1) by developing in the student increased awareness of the local community and its role on the national and international scene, (2) by creating in the student greater sensitivity and insight into social processes and problems, (3) by reviewing the rights, privileges, responsibilities and duties of mature citizens, and (4) by exploring techniques aimed at effective use of community and community resources to provide life experiences for developing citizens.

471. *General Methods and Class Management in the Secondary Schools.* (3) 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. Prerequisite for student teaching. These activities are a part of Ed. 472s.

°472e. *Student Teaching in the Elementary School* (12 quarter hours credit). Fall, winter, spring quarter. This course consists of directed observation, participation, and teaching in the elementary grades. It provides opportunities for students to work in typical school situations under the guidance of experienced teachers. Parallel readings and conferences for further interpreting and enriching these experiences are held regularly. This course is open only to seniors and teachers with some experience. Education 443 must be taken along with student teaching. Pre-requisites: Education 201, 301, 321-2-3, 333, 387, Psychology 242, 243, 312; Art 310; Music 301; P. 243.

°472s. *Student Teaching in the Secondary Schools, Grades 7 through 12.* (12 quarter hours credit). Actual classroom experience in secondary schools under the charge of expert teachers in cooperating schools. Student teacher schedules should be arranged well in advance of the senior year and planned so as to enable the student to devote full time to student teaching during the quarter in which the course is to be completed. Required for all students who are following the professional education core that leads to teaching as a career. Prerequisites: Ed. 201, Psy. 242-243, Ed. 301, Psy. 312, Ed. 387, and 371, the department's specific methods course.

473. *Audio-Visual Aids in Education.* (3) A survey course designed to acquaint the student with audio-visual materials of instruction. Proper classroom utilization of film strips, 16mm motion pictures, slides, graphic materials, field trips, exhibits and models is studied.

481. *Early Childhood Education.* (3) The course seeks to provide experience and understandings for the student who is interested in becoming a kindergarten and/or primary teacher. It emphasizes the physical, mental, social, and emotional characteristics of the five to ten year old and materials and methods appropriate for children on this developmental level.

* General Requirements for Student Teaching 472e and 472s

All students desiring to enroll in student teaching (472e or 472s) must meet the following general requirements:

1. File application for student teaching one quarter prior to the one in which he wishes to enroll in student teaching.
2. Must be classified as a senior (144 or more quarter hours).
3. Have a scholastic average of at least 2.25 in the teaching field courses with a minimum grade of C in all methods courses.
4. Meet all course prerequisites.
5. Receive certification from health authorities that no serious physical condition detrimental to the welfare of the children exists.
6. Show evidence of emotional stability.
7. Obtain certification from his major department as to readiness to engage in student teaching, and to be accepted for placement as a student teacher by the cooperating school system.
8. Carry a maximum class load of 15 quarter hours credit while enrolled in student teaching.

SPECIAL EDUCATION

The education for teachers of exceptional children satisfies one of the great needs of our present day society, in that it provides for adequate training and experiences which will enable the prospective teacher to understand and guide the exceptional child adequately. Every child must have equal educational opportunities to develop to his maximum potentialities. The exceptional child needs special educational services in accordance to his peculiar needs and abilities. According to recent statistical reports there is an increasing demand for well qualified teachers in all areas of exceptionality, and most especially the area of the educable mentally retarded. The School of Education, Tennessee A. and I. State University, in accordance with its ideals and purposes, has expanded its teacher education offerings to include a program in the area of mental retardation.

Students who pursue the program in special education must also meet all of the requirements of the teacher education program for elementary certification.

COURSES FOR TEACHERS OF THE MENTALLY RETARDED

Specialized Courses—

Sp. Ed. 465	Introduction to Special Education	3 hrs.
Sp. Ed. 467	Characteristics and Needs of the Mentally Retarded	3 hrs.
Sp. Ed. 469	Vocational Guidance of the Mentally Retarded	3 hrs.
Sp. Ed. 471	Methods and Materials for Teaching the Mentally Retarded	3 hrs.
Sp. Ed. 473	Observation, Participation, and Teaching Mentally Retarded	3 hrs.

Related Courses (6 hours of Electives)

Psy. 323	Mental Hygiene	3 hrs.
Soc. 452	Sociology of Child Development	3 hrs.
Psy. 461	Psychometrics (Required)	3 hrs.

COURSES IN SPECIAL EDUCATION

465. *Introduction to Special Education.* (3) Designed to acquaint the student with the general field of special education—its purpose and scope. The course is a prerequisite to all courses either graduate or undergraduate. Offered each quarter.

467. *Characteristics and Needs of the Mentally Retarded.* (3) A critical study of the classifications, etiology and specific characteristics of the various types of children with low intelligence. Prerequisite: Sp. Ed. 465.

469. *Vocational Guidance and Placement of the Mentally Retarded.* (3) Designed to acquaint the student with the duties and responsibilities of a rehabilitation counselor of a client who has a disability of mental retardation. Prerequisite: Sp. Ed. 465.

471. *Methods and Materials for Teaching the Mentally Retarded Child.* (3) Designed to acquaint the students with the principles underlying the methods and materials for teaching the children with low intelligence. Prerequisite: Sp. 465.

473. *Observation, Participation and Teaching the Mentally Retarded.* (3) A practicum in actual classroom situations, guiding the learning experiences of the mentally retarded child. Frequent conferences and reference readings will aid in the interpretation and solution of existing problems, as well as improving teacher-learning situations. Students must have completed the sequence of courses listed in the specialized area. Prerequisites: Sp. Ed. 465, 467, 471.

LIBRARY SERVICE

JESSIE C. SMITH, Ph.D., *Coordinator*

The Library Service program may be elected as a minor field of concentration by students taking a major in any department of the institution. In general the student begins his library training at the junior level. However, upon approval of his major advisor, he may be permitted to take no more than two courses at the advanced sophomore level. During his junior and senior years he can complete requirements by taking one or two courses in each term.

The library service curriculum provides training for the following groups: (I) students who wish to prepare for library positions in elementary and secondary schools; (II) students who plan to enter a graduate library school after receiving the bachelor degree; (III) in-service teachers, administrators, and prospective teachers who desire information on library materials related to their teaching needs; (IV) students who wish guidance in the use of library resources.

Group I—Requirements

Students pursuing a teacher education program on either the elementary or secondary level may elect library service as a minor so as to qualify for positions as teacher-librarians or school librarians. Those who wish to qualify as

teacher-librarians should complete the following courses: Library Service 361, 362, 363, 441, 451 and 452. Those who wish to qualify as school librarians must complete the following additional courses: Library Service 341, 463 and 483.

Group II—Requirements

Students preparing to enter a graduate library school for further training 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. Language requirements vary in graduate library schools. Some schools require two years of college credit in the designated languages, while others may waive such requirements altogether, depending upon the kind of library work the student chooses for specialization.

Group III—Requirements

In-service teachers, administrators, and prospective teachers may enroll in library service courses even though they do not plan to complete a minor. It is recommended that they take courses dealing with materials.

Group IV—Requirements

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.

COURSES FOR A MINOR IN LIBRARY SERVICE

Name of Course	*Quarter* I	II	III
Library Service 362	3		
Library Service 363		3	
Library Service 361			3
Library Service 341	3		
Library Service 441	3		
Library Service 451		3	
Library Service 452		3	
Library Service 463			3
Library Service 483			3

Courses required for a minor will be offered in both Summer terms.

ELECTIVE COURSE (Sections offered each quarter)			
Library Service 211	3	3	3

COURSES IN LIBRARY SERVICE

Undergraduate

211. *Use of Library Resources.* (3) A general course on the use of library facilities including the card catolog, periodical indexes, bibliographies, encyclopedias and other reference tools. Designed primarily to aid students in developing a systematic approach to using library materials. Students from any department may elect this course which is not included in courses required for certification. Three lectures.

341. *Introduction to Librarianship.* (3) Planned for the orientation of students in the broad field of library service. Includes an introduction to the development and function of libraries, types of services, types of library work and opportunities in librarianship. Field trips will be made in the city to libraries, bookstores, publishing houses and book binderies. Three lectures.

361. *Reference Materials.* (3) Embraces a study of basic reference books and other reference materials particularly for the school library or small library. Also includes the organization and administration of reference services. Three lectures.

362. *Book and Related Materials for Young People.* (3) Principles of selection, aids for selection, evaluation and use of books and related materials for young people. Emphasizes reading of books and an examination of materials

for curricular needs, reading interests and personal growth of adolescent students. Attention also given to development of promotional activities aimed at stimulating use of materials by students and teachers. Three lectures.

363. *Books and Related Materials for Children.* (3) Principles of selection, aids for selection, evaluation and use of books and related materials for children. Emphasis placed on required readings for acquainting students with children's books and writers in the field. Attention given to an examination of materials for curricular needs, reading interests, and personal growth, and to the development of promotional activities aimed at stimulating use of materials by students and teachers. Three lectures.

441. *Classification and Cataloging.* (3) Introduction to principles underlying the classification and simplified techniques of cataloging books. The abridged Dewey Decimal Classification scheme used and printed cards stressed. Making of unit cards, filing, and other essential procedures of organizing the book collection are included. Three lectures and one laboratory period.

451. *Organizing Library Materials.* (3) The organization of non-book materials including periodicals, vertical file and audio-visual materials such as filmstrips, films and recordings. Attention also given to weeding, inventory and care of books, and other procedures involved in developing a systematic program of acquisition, upkeep and use of library materials. Prerequisite 441. Three lectures.

452. *School Library Administration.* (3) Principles, objectives and procedures involved in administering the small library. Standards and evaluation, housing and equipment, personnel, financial support, budgeting, loan systems, reports and other administrative procedures included. Three lectures and one laboratory period.

463. *Books and Related Materials for Adults.* (3) Special attention given to reading interests of adults, principles of selection, evaluation, and use of books and related materials for adults. Development of reading lists based on adult interests and activities such as book reviews, forums and book discussions included. Three lectures.

483. *Non-book Materials.* (3) Emphasis on selection, aids for selection, evaluation and use of non-book materials in the library program in relation to the entire school program. Problems involved in developing the library as a materials center that is responsible for films, filmstrips, recordings and other non-book materials is included. Three lectures.

THE DEPARTMENT OF ART AND MUSIC EDUCATION

EDWARD C. LEWIS, JR., Ph.D., *Head*

General Statement

The department of Art and Music Education is organized to serve the State's art and music education structure through teacher education, leadership, and statewide cooperation; to provide sound guidance and thorough training for the gifted student whose career goal is professional music; to enable students interested in art to continue art study; and to bring the gifts of art and music in exhibits, lecture demonstrations, concert offerings and participation opportunities to all its people, as its contribution to the cultural enrichment of the campus, the community, and the state families.

The courses are designed to provide experiences leading to general culture, a mastery of fundamental tools, adequate performance ability, and the science and art of teaching. A curriculum in music education and courses in art education are offered to prepare the student in that area of teaching for which he is best suited.

The undergraduate program in Music leads to the Bachelor of Science degree in Music Education. The minimum number of quarter hours required for the Bachelor of Science degree in Music Education is 195. The minimum number of quarter hours in Music required is 98. The minimum of quarter hours in 300 and 400 level courses required for both the major in music education and for graduation is 46.

MUSIC EDUCATION

Method of Instruction

Courses in applied music are taught by means of private lessons. Beginning instruction in voice, piano, and in the string and wind instruments is offered in the group instruction method. Academic classes are taught by means of the lecture and project system with laboratory sessions as required or desirable. Upon entry and at the end of each academic year the student's accomplishment level or potential is evaluated by a jury of staff members and he is assigned to a teacher for private or class instruction. Progress is determined through examination by a jury and is based upon the student's native talent, technical advancement, and repertoire. All courses in music, whether applied or academic, must be passed with a grade of "C" or above. Each student will be expected to repeat courses in which a grade of "D" or below is earned until the grade of "C" or above is achieved. All music majors must take Comprehensive examinations in music theory, music history, music education, and applied music prior to practice teaching or during the final quarter of matriculation at the University. The time and place of these examinations will be announced periodically.

Applied Music

Applied music is defined as instruction and preparation in voice and the various instruments. Courses are offered in voice, piano, organ, violin, viola, violincello, string bass, flute, oboe, clarinet, bassoon, saxaphone, French horn, cornet (trumpet), trombone, tuba, and the percussion instruments. Each student must declare a major applied area of performance and must concentrate in this area for the equivalent of four years, and must present a senior recital during the senior year. It is expected that each student will make numerous appearances on seminars and student recitals during the freshman, sophomore, and junior years. For all students majoring in some instrument other than piano, it is expected that piano will be the minor performance area. In most instances the choice of the major applied area and curriculum will be governed by the proficiency that the student has achieved prior to entering the University.

For those new students who demonstrate talent but are lacking in formal training, the department offers courses in theory and applied music for no credit, and these courses must be pursued until credit level of proficiency is attained. All students enrolled in theory or applied courses for no credit are probationary students and may be advised to change to another academic curriculum.

Ensemble

Membership in music ensemble groups is open to all students of the University who qualify for admission and participation. Each music major is required to participate in a major ensemble group for the entire four years of his matriculation. Membership is not limited to one ensemble, but instrumental majors must participate in University Band and Vocal majors must participate in University Choirs. One credit per quarter is offered for each group.

The following ensembles are offered:

University Choir, Concert Singers, Men's Glee Club, University Band, Brass Choir and String Ensemble. These groups are organized to study and perform the standard repertoire for the various combinations of voice or instrument.

Concerts and Recitals

Organized music groups, small ensemble groups, faculty and student soloists offer concerts and recitals frequently in the University auditorium. These are open to the public without charge, and students are particularly encouraged to attend.

Lyceum Series

Each year the University Lyceum Series sponsors an Artist Course, bringing to the campus and the community artists and ensembles of national prominence. This series along with the Faculty series provides a full and diversified musical calendar.

Teacher Education

The essential orientation of the curriculum in music is that of the teacher education program. Opportunities for professional development and for artistic preparation are amply provided for within the general pedagogical framework.

CURRICULA IN MUSIC EDUCATION

EDWARD C. LEWIS, Ph.D., *Coordinator*

CURRICULUM I

Teacher Education

Piano Major

Freshman Year *Name of Course*	*Quarter Hours Credit* I	II	III
English 101-2-3	3	3	3
Soc. Studies 111-2-3	3	3	3
Music 120-1-2	4	4	4
P. E., AFROTC	1-2	1-2	1-2
Music 104-5-7	1	1	1
Choir or Band	1	1	1
Music 11a, b, c	1	1	1
Music 191-2-3	1	1	1
	15-16	15-16	15-16

Sophomore Year *Name of Course*	*Quarter Hours Credit* I	II	III
Science 121-2-3	4	4	4
Music 220-1-2	3	3	3
Mathematics 111, 112	3	3	
Music 131			
Ed. 201, Psy. 242-43	3	3	3
P. E. AFROTC	1-2	1-2	1-2
Choir or Band	1	1	1
Music 21a, b, c	1	1	1
	16-17	16-17	16-17

Junior Year *Name of Course*	*Quarter Hours Credit* I	II	III
Music 337-8-9	3	3	3
English 211-2-3	3	3	3
Ed. 301, Psy. 312, Ed. 387	3	3	3
Music 108-134-135	1	1	1
Music 320-21, S.S. 114	3	3	3
Choir or Band	1	1	1
Music 31a, b, c	2	2	2
Music 371a, b, 304	3	3	3
	19	19	19

Senior Year *Name of Course*	*Quarter Hours Credit* I	II	III
Music 420-21	3		3
Music 430			3
Health 211, Art 133	3		
Ed. 462, Ed. 471-2	3	15	
Choir or Band	1		1
Mus. 305, 371, 451	3		5
Music (applied)	2		2
	15	15	17

CURRICULUM II

Teacher Education

Voice Major

Freshman Year *Name of Course*	*Quarter Hours Credit* I	II	III
English 101-2-3	3	3	3
Social Studies 111-2-3	3	3	3
Music 120-1-2	4	4	4
P. E., AFROTC	1-2	1-2	1-2
Music 104-5-7	1	1	1
Choir	1	1	1
Music 14a, b, c	2	2	2
Music 11a, b, c	1	1	1
	16-17	16-17	16-17

Sophomore Year *Name of Course*	*Quarter Hours Credit* I	II	III
Science 121-2-3	4	4	4
Music 220-1-2	3	3	3
Mathematics 111, 112	3	3	
Music 131			3
Ed. 201, Psy. 242, 243	3	3	3
P. E., AFROTC	1-2	1-2	1-2
Choir	1	1	1
Music 24a, b, c	2	2	2
Music 21a, b, c	1	1	1
	18-19	18-19	18-19

Junior Year Name of Course	Quarter Hours Credit I	 II	 III
Music 337-8-9	3	3	3
English 211-2-3	3	3	3
Ed. 301, Psy. 312, Ed. 387	3	3	3
Music 108-134-135 ...	1	1	1
Music 320-21, 305 ...	3	3	3
Choir	1	1	1
Music 34a, b, c.....	2	2	2
Mus. 371a, Mus. 304 Ed. 462	3	3	3
	19	19	19

Senior Year Name of Course	Quarter Hours Credit I	 II	 III
Music 420-21	3		3
Music 430			3
Health 211, Art 133..	3		3
Music 428			3
Ed. 462, Ed. 471-2....	3	15	
Choir	1		1
Soc. Stu. 114	3		
Mus. 371, 451	3		2
Music (applied)	2		2
	18	15	14

CURRICULUM III

Teacher Education

Instrumental Major

Freshman Year Name of Course	Quarter Hours Credit I	 II	 III
English 101-2-3 3	3	3	3
Social Studies 111-2-3	3	3	3
Music 120-1-2	4	4	4
P. E., AFROTC 1-2		1-2	1-2
Music 104-5-7	1	1	1
Band	1	1	1
Music 11a, b, c	1	1	1
Major Applied	2	2	2
	16-17	16-17	16-17

Sophomore Year Name of Course	Quarter Hours Credit I	 II	 III
Science 121-2-3	4	4	4
Music 220-1-2	3	3	3
Math 111, 112	3	3	
Music 131			3
Ed. 201, Psy. 242-243	3	3	3
P. E., AFROTC 1-2		1-2	1-2
Band	1	1	1
Music 21a, b, c	1	1	1
Major Applied	2	2	2
	18-19	18-19	18-19

Junior Year Name of Course	Quarter Hours Credit I	 II	 III
Music 337-8-9	3	3	3
English 211-2-3	3	3	3
Ed. 301, Psy. 312, Ed. 387	3	3	3
Music 108-134-135....	1	1	1
Music 320-21, S.S. 114	3	3	3
Band	1	1	1
Mus. 371a, 371b, Music 304	3	3	3
Major Applied	2	2	2
	19	19	19

Senior Year Name of Course	Quarter Hours Credit I	 II	 III
Music 420-21	3		3
Music 430			3
Health 211			3
Art 133			3
Music 428	3		
Ed. 462, Ed. 471-2..	3	15	
Band	1		1
Major Applied	2		2
Mus. 305, 371, 451...	6		2
	18	15	17

COURSES IN MUSIC

Undergraduate

Applied Music Courses

The laboratory fees, unless otherwise stated, are for each quarter.

11A, B, C. *First Year Piano.* (3) Some of the easier works of Bach, Haydn, 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.

21A, B, C. *Second Year Piano.* (3) Selected works from Bach, and other composers. Prerequisite: Permission from the Office of the Music Department, and Piano 11C. Two one-half hour periods. Laboratory fee $7.00.

31A, B, C. *Third Year Piano.* (6) Larger compositions, and other exacting materials requiring excellent musicianship, skills and techniques are used. Prerequisite: Music 21C. Two one-half hour periods. Laboratory fee $7.00.

*41A, B, C. *Fourth Year Piano.* (6) The study of advanced piano materials. Prerequisite: Music 41C. Two one-half hour periods. Laboratory fee $7.00.

12A, B, C. *First Year Organ.* (6) 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 10, and permission from the Office of the Music Department. Two one-half hour periods. Laboratory fee $20.00.

22A, B, C. *Second Year Organ.* (6) Advanced pedal studies and scales. Prerequisite: Music 12C. Two one-half hour periods. Laboratory fee $20.00.

32A, B, C. *Third Year Organ.* (6) A continuation of pedal studies and scales in addition to the Toccate and Fugue in D Minor, and other major works, some from modern composers. Prerequisite: Music 22C. Two one-half hour periods. Laboratory fee $20.00.

*42A, B, C. *Fourth Year Organ.* (6) A continuation of Music 32C with special emphasis on representative works from the various schools of composition including 20th Century composers. Two one-half hour periods. Laboratory fee $20.00.

13A, B, C. *First Year Violin or Viola.* (6) Instruction with standard elementary violin or viola materials. Prerequisite: Permission from the Office of the Music Department. Two one-half hour-periods. Laboratory fee $7.00.

23A, B, C. *Second Year Violin or Viola.* (6) Instruction with standard elementary violin or viola materials. Prerequisite: Music 13C. Two one-half hours periods. Laboratory fee $7.00.

33A, B, C.
43A, B, C. } *Advanced Violin or Viola.* (6) Instruction with standard advanced violin or viola materials. Prerequisite: Music 23C. Two one-half hour periods. Laboratory fee $7.00.

14A, B, C. *First Year Voice.* (6) The study of breath control, and voice placement in tone production. Prerequisite: Permission from the Office of the Music Department. Two one-half hour periods. Laboratory fee $7.00.

24A, B, C. *Second Year Voice.* (6) The study of voice drills in voice placement, intonation, breathing, phrasing, diction, etc. Prerequisite: Music 14C. Two one-half hour periods. Laboratory fee $7.00.

34A, B, C.
44A, B, C. } *Third and Fourth Year Voice.* (6) The study of drills in vocal techniques. Prerequisite: Music 24C. Two one-half hour periods. Laboratory fee $7.00.

191-2-3. *Voice Class.* (3) The study of breath control, voice placement, in tone production, intonation and repertoire. Prerequisite: Permission from the Office of the Music Department. Two one-hour periods per week. Laboratory fee $3.50.

15A, B, C. *First Year Cornet.* (6) Instruction with standard elementary materials. Prerequisite: Permission from the Office of the Music Department. Two one-half hour periods. Laboratory fee $7.00.

25A, B, C. *Second Year Cornet.* (6) The study of standard intermediate materials. Prerequisite: Music 15C. Two one-half hour periods. Laboratory fee $7.00.

35A, B, C.
45A, B, C. } *Third and Fourth Year Advanced Cornet.* (6) Instruction with standard advanced materials. Two one-half hour periods. Laboratory fee $7.00.

16A, B, C. *First Year Trombone.* (6) Instruction with standard elementary materials. Prerequisite: Permission from the Office of the Music Department. Two one-half hour periods. Laboratory fee $7.00.

26A, B, C. *Second Year Trombone.* (6) The study of standard intermediate materials. Prerequisite: Trombone 16C. Two one-half hour periods. Laboratory fee $7.00.

* Approved for graduate credit.

36A, B, C. } *Third and Fourth Year Trombone.* (6) Instruction with
46A, B, C. } standard advanced materials. Two one-half hour periods. Laboratory fee $7.00.

17A, B, C. *First Year Clarinet.* (6) Instruction with standard elementary materials. Prerequisite: Permission from the Office of the Music Department. Two one-half hour periods. Laboratory fee $7.00.

27A, B, C. *Second Year Clarinet.* (6) The study of standard intermediate materials. Prerequisite: 17C. Two one-half hour periods. Laboratory fee $7.00.

37A, B, C. } *Third and Fourth Year Clarinet.*((6) Instruction with stan-
47A, B, C. } dard advanced materials. Two one-half hour periods. Laboratory fee $7.00.

18A, B, C. *First Year Flute.* (6) The study of standard elementary materials. Prerequiste: Permission from the Office of the Music Department. Two one-half hour periods. Laboratory fee $7.00.

28A, B, C. *Second Year Flute.* (6) Instruction with standard intermediate materials. Prerequisite: Flute 18C. Two one-half hour periods. Laboratory fee $7.00.

38A, B, C. } *Third and Fourth Year Flute.* (6) Individual instruction
48, B, C. } with standard advanced materials. Two one-half hour periods. Laboratory fee $7.00.

19A, B, C. *First Year Saxophone.* (6) The study of standard elementary materials. Prerequisite: Permission from the Office of the Music Department Two one-half hour periods. Laboratory fee $7.00.

29A, B, C. *Second Year Saxophone.* (6) The study of standard elementary Materials. Prerequisite: Saxophone 19C. Two one-half hour periods. Laboratory fee $7.00.

39A, B, C. } *Third and Fourth Year Saxophone.* (6) Instruction with
49A, B, C. } standard advanced materials. Two one-half hour periods. Laboratory fee $7.00.

181, 2, 3. *First Year Percussion.* (6) An intensive study of elements of percussion technic. Accent will be on snare drum rudiments. One full hour, or two half hour lessons per week. Permission of Department of Music.

281, 2, 3. *Second Year Percussion.* (6) Continuation of above. Attention to bass drum and timpani. One full hour instruction per week.

381, 2, 3. *Third Year Percussion.* (6)Intermediate materials for percussionists. Review of all rudiments, introduction of solo and ensemble materials for percussion. Attention to tuned percussion instruments. One full hour instruction per week.

481, 2, 3. *Fourth Year Percussion.* (6) Advanced technic and literature for solo percussion instruments and percussion ensembles. Emphasis on recital literature in preparation for Senior Recital.

134-5-6. *String Instrument Class.* (3) The study of the fundamentals of bowling, fingering, construction and care of string instruments. Three periods.

104. *Woodwind Class (Clarinet).* (1) Fundamentals of tone production, technic, care, construction, and minor repair. Prerequisite: Permission of the Office of the Music Department. Two periods.

105. *Woodwind Class (Flute).* (1)

106. *Woodwind Class (Saxophone).* (1)

107. *Brass Class (Trombone).* (1) Fundamentals of care, construction, minor repair, and performance.

108. *Brass Class (Cornet).* (1)

109. *Percussion Class.* (1) Fundamentals of care and minor repair; study of technic of performance on most percussion instruments with emphasis on the snare drum. Two periods.

305. *Orchestral Conducting.* (3) A study of the technic of conducting with particular emphasis on the use of the baton, score reading, program planning, and rehearsal procedures. An evaluation of orchestral and other instrumental music suitable for use in secondary schools. Prerequisite: Junior standing in Department of Music. Three lectures.

Major Ensemble Groups

Men's Glee Club (1) The study and performance of representative material for male voices. Attention to both sacred and secular materials. Performance on and off campus. Membership open to any qualified male student in the University. Three (3) practices weekly.

University Choirs; Concert Singers. (1) The study of a variety of the finest choral literature. Prerequisite: Permission from the Office of the Music Department. Three or more periods.

University Band. (1) The study and performance of the finest band literature. (After the football season, the University Band becomes the Concert Band. For membership requirements see Band Director.) Prerequisite: Ability to satisfactorily play an instrument. Three or more periods.

MUSIC EDUCATION

Music 301-2-3. *Introduction to Public School Music.* (9) An introductory course in music for students in elementary education. Consists of a thorough study in music fundamentals, terminology, scales, keys, rhythms, and sight singing drills and dictation. Prerequisite: Permission from the Office of the Music Department. Three lectures.

371a. *Music Education.* (3) A study of principles, methods, materials, objectives, and procedures for teaching music in elementary schools. Prerequisite: Junior standing in Department of Music. Three lectures.

371b. *Music Education.* (3) A study of principles, methods, materials, objectives, and procedures for teaching music in secondary schools. Prerequisite: Junior standing in Department of Music. Three lectures.

371c. *Instrumental Methods.* (3) A study of methods, philosophies, materials, and objectives for teaching instrumental music from grade four (4) through grade twelve (12). Prerequisite: Junior standing in Department of Music. Three lectures.

304. *Choral Methods and Materials.* (3) A study of the principles and problems of teaching voice, managing and directing choral organizations, and the analysis and evaluation of choral materials. Prerequisite: Permission from the Office of the Music Department. Three lectures.

Music, History, Literature, and Appreciation

131. *Music Appreciation.* (3) Emphasis 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 lectures.

337-8-9. *Music History and Literature.* (9) General information concerning the history of music. Embodies an analytical approach to music history, its growth and development. Prerequisite: Permission from the Office of the Music Department. Three lectures.

Theory and Composition

119. *Orientation to Music.* (2) Elementary instruction in basic language of music, scale formation, rhythms, sight singing, melodic dictation. Attention given to practice and study habits for music majors.

120-1-2. *Freshman Theory.* (12) Basic notation, intervals, scales and modes, rhythms, contrapuntal harmony, written and keyboard, sight singing and ear training; harmonic and form analysis. Prerequisite: Pass the basic Theory Test. Three lectures.

220-1-2. *Sophomore Theory.* (9) Aural and written harmony; keyboard harmony; figured bass; counterpoint; sight singing; ear training; analysis. Prerequisite: Music 122. Three lectures.

320-1. *Counterpoint.* (6) A study of the techniques underlying the principles used in writing good melodies and their association without losing independence. Prerequisite: Music 222. Three lectures.

420-1. *Forms and Analysis.* (6) A study of composition in the smaller and larger forms. Prerequisite: Music 321. Three lectures.

430. *Orchestration.* (3) A systematic study and application of the techniques for utilizing the capabilities of orchestral and band instruments in Music Composition. Prerequisite: Music 321. Three lectures.

428. *Physics of Music.* (3) Theoretical and applied considerations of sound production and promulgation; the tempered scale, and other scales; the acoustical basis of wind and stringed instruments; analysis of complex tones produced by human voice and certain wind instruments. Prerequisite: Music 222. Three lectures.

433. *Composition.* (3) A study of composition and the application of creative ability along systematic lines in writing original larger forms. Prerequisite: Permission from the Office of the Music Department. Three lectures.

451. *Senior Recital.* (2) Credit given only upon successful completion of public senior recital. Prerequisite: Permission of major applied instructor.

CURRICULUM IN ART EDUCATION

EDWARD C. LEWIS, JR., *Coordinator*

In keeping with the conviction of educators throughout the nation that all teachers should use creative expression as a rich source of teaching method, the Art Curriculum, with emphasis on Art Education, has these objectives: to offer courses which stimulate students to learn about art, and to express themselves creatively as a part of their cultural growth; to guide students in the understanding of the importance of art experience in public school education, and life in general; to guide students in the realization of the many ways that art affects their daily living; to acquaint students with the arts of all peoples through assigned reading, observation and visual aids; to show the relationship of art to other fields of learning; to counsel and encourage students who show interest and ability for artistic growth, to continue the study of art in its various forms so as to be instrumental in placing art education in the public school curriculum on a level with other school subjects; to effectively employ the use of leisure, and to develop creative productions.

The department offers a major in Art Education leading to the degree of Bachelor of Science in Education, the curriculum for which is listed below.

The minimum number of quarter hours required for the Bachelor of Science Degree in Art Education is 195. The minimum number of quarter hours in Art required is 66 of which 36 hours are on the 300 and 400 levels. The minimum number of quarter hours of 300 and 400 level courses required for graduation is 54.

A minor in Art consists of 27 hours of Art, including courses in Art 101-2-3 (9); Design 131 (3); Crafts 241 (3); Art History 331-2-3 (9).

CURRICULUM FOR B.S. DEGREE WITH A MAJOR IN ART EDUCATION

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 101-2-3	2	3	3
Math. 111-2	3	3	
Music 131			3
Social Studies 111-12-13	3	3	3
Art 121-2-3	3	3	3
Phy. Ed. 11-12-13 ..	1	1	1
Air Sci. (Men)	1	1	1
Art 101-2-3	3	3	3
	16-17	16-17	16-17

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 211-12-3 ..	3	3	3
Psy. 242, 243		3	3
Education 201	3		
Natural Science 121-2-3	4	4	4
Art 221-2-3	3	3	3
Art 241	3		
Social Studies 114 ..	3		
Phy. Ed. 20-50	1	1	1
Air Science (Men)	1	1	1
	17-18	17-18	17-18

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Psychology 312	3		
Education 301, 387		3	3
American History 201-2-3	3	3	3
Art 301-2-3	3	3	3
Art 331-2-3	3	3	3
Art 321-2-3	3	3	3
French 101-2-3 or Spanish 101-2-3	3	3	3
	18	18	18

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Psychology 463		3	
Art 472			12
Art 371a-b, 471	3	3	3
Education 462		3	
Senior Project 450 ..		3	
Health 151	3		
Electives	6	3	
	12	15	15

DESCRIPTION OF COURSES FOR ART MAJORS

101. *Introduction to Art.* (3) An overview of Art expression; what art refers to, for whom art is, and how art can have meaning for one by learning how art is appreciated, and by applying its principles to art performance with materials of one's choice.

102-3. *Art Appreciation.* (6) An opportunity to explore both past and present day art through reading, through pictures and objects, and through investigation of the influence of art on our present day living and thinking.

121-2-3. *Fundamentals of Drawing.* (9) Students work for the understanding of one and two point perspective and the function of line, shape, form, light and shade in composition. Laboratory.

131. *Design Fundamentals.* (3) Study of principles of structural and decorative design, giving opportunity for creative experiment with materials, structural form, and surface decoration.

221-2-3. *Painting in Various Media.* (9) The student has the privilege of concentrating in a chosen medium. Emphasis on the study of the environment Creative composition from inspiration. Laboratory.

241. *Hobby Crafts.* (3) A crafts course giving art experience useful in community activities: recreation centers, camps, vacation Bible Schools, Scout programs, and for individuals seeking a hobby in the plastic arts. Processes are simple, direct, modern.

301. *Pottery Craft.* (3) A beginner's course in hand built clay construction in two and three dimensions. Slab and coil methods. Decoration by low relief, incising and colored glazes.

302-3. *Clay Modeling.* (6) Clay sculptures built in two and three dimensions. Traditional methods, and push and squeeze methods produce interesting unobjective forms. Emphasis on individual design in form and decoration. Articles are cast in plaster or fired and glazed.

331-2-3. *Art History.* (9) Survey courses from early Egyption through the arts of Mesopotamia, Crete, Greece, Rome, Early Christian and Byzantine times.

371a-b. *Materials and Methods—Art Education.* (6) Experience in understanding the methods and materials for teaching art in grades 1-12.

471. *Student Teaching Seminar.* (3)

472. *Student Teaching.* (12)

Courses in Art and Art Education

133. *Man and Materials.* (3) The course is concerned with the investigation of man's experience with materials in the development of visual and plastic arts and their place in the environment.

Courses in Art for Elementary Education Majors

Art 310. *Manuscript Writing, and Expression in Two and Three Dimensions.* (3) Develops skill in simple letter forms; upper and lower case letters to facilitate the teaching of reading in the first elementary grades, for chart making and chalk-board work. Aids students in understanding the art pro-

ductions of children at various levels of growth, and to realize that the child's general growth is tied up with his creative development, and visa-versa.

Students experiment with devices useful in aiding release of the child's creative impulses. Students study examples of children's work for experience in evaluation of art performance at various levels of growth.

Related Courses in Art for Home Economics Majors

201. *Color and Design.* (3) Good taste as it applies in personal grooming. Problems of color and design as 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) Students who have had Related Art 201 may elect 202 for guidance, and experience in further application of art principles.

203. *Costume Design.* (3) Study of historic costumes as a background and inspiration for modern costume. Does not emphasize original designing and drafting although individual ideas in keeping with good taste encouraged. Emphasis 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. Experiments 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) Brief study of American contribution to domestic architecture and interior decoration fixtures: panels, stairways, cornices, cabinets. Planning the small house for comfort and convenience. Application for aesthetic qualities in home planning through the understanding of art principles and how to apply them; and fundamentals of blue print reading. Usually offered in the spring and summer quarters.

DIVISION OF BUSINESS

R. Grann Lloyd, Ph.D., *Director*

OBJECTIVES

The primary objectives of the Division of Business are: (1) to provide training in the methods, techniques and principles underlying modern business as a foundation for business careers; (2) to provide students with a knowledge and understanding of the changing and developing character of our economic society and the responsibility incumbent upon educated men and women engaged in economic activity; (3) to provide training in those phases of business that concern every member of organized society; and (4) to train students for the teaching of business subjects on the secondary and collegiate levels.

ORGANIZATION

The Division of Business offers two curricula: Business Administration and Business Education. Special curricula may be followed by students who do not wish to obtain college degrees. A master of education degree is offered in the Division.

The Department of Economics and Business Administration sponsors a chapter of the Future Business Leaders of America—an organization open to all students of the department, beginning in the freshman year.

DEPARTMENT OF ECONOMICS AND BUSINESS ADMINISTRATION

R. Grann Lloyd, Ph.D., *Head*

The curriculum in Economics and Business Administration is offered to those students who are planning for careers in accounting, insurance, financing,

marketing, real estate, salesmanship, and other general business pursuits. The courses are designed to prepare students for leadership in our complex economy, and to provide professional education in the area of their choice.

REQUIREMENTS FOR THE DEGREE

The bachelor of science degree is offered in business administration and is awarded for the attainment of knowledge and skills in business and related fields demonstrated to the satisfaction of the university.*

A meaningful program of study is provided. The nature and extent of this program, in general, depends upon the student's previous training and experience. Normally, one-third of the work is in the field of concentration, one-third in related fields, and one-third in general education and electives.

The student must complete at least forty-five quarter hours in the field of Business Administration with a major emphasis in accounting and general business. Sixty quarter hours must be completed in courses on the 300 and 400 level. One hundred and ninety-eight quarter hours are required for graduation.

Pre-Law: Colleges of Law usually have no specific requirements with regard to courses pursued in pre-legal study. However, the education of a lawyer begins much earlier than the beginning of the formal study of law. Moreover, successful pursuit of a professional career in law requires more than mastery of the rules of law. It depends, also, upon the individual's ability to comprehend and think, proficiency in verbal expression, the ability

* Basic knowledge of keyboard required, including typing at 40 words a minute. Optional: For those entering who have met above requirements.

to function with others, an understanding of the social and physical environment in which we live, and a high degree of responsibility. Therefore, the Department of Economics and Business Administration offers a pre-law program for majors interested in such a course of study. Students interested in pre-law study should consult the Head of the Department as soon as they have made their decision, preferably during the sophomore year.

The Department neither encourages nor approves the practice of course substitution in the required subject core. Students are advised to follow the prescribed programs in their respective curricula, to enroll for courses on their grade levels, and to take these courses in sequence. It is a departmental requirement that students earn a grade of "C" or better in all courses in the major field.

CURRICULUM FOR MAJORS IN BUSINESS ADMINISTRATION

BACHELOR OF SCIENCE DEGREE

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
B. A. 101	3		
B. A. 102		3	
English 101-2-3	3	3	3
Science 121-22-23	4	4	4
History 101-2-3	3	3	3
Art (and/Or mus/. Phil)			3
Math. 111-112-173	3	3	3
Phys. Ed. 11-12-13	1	1	1
Air Sci. 151-52-53	1	1	1
Women	17	17	17
Men	18	18	18

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Acctg. 211-12-13	3	3	3
B. A. 201			3
Economics 211-12-13	3	3	3
Pol. Sci. 221-22	3	3	
Geog. 271-72		3	3
Phys. Ed. 20-50	1	1	1
Air Sci. 251-52-53	1	1	1
English 211-12-13	3	3	3
Elective	3		
Women	16	16	16
Men	17	17	17

Junior Year	Quarter Hours Credit			Senior Year	Quarter Hours Credit		
Name of Course	I	II	III	Name of Course	I	II	III
Acctg. 311-12-13	3	3	3	B. A. 441		3	
B. A. 335			3	B. A. 420-21		3	3
B. A. 323-24-25	3	3	3	B. A. 328		3	
B. A. 331	3			B. A. 423 or 425	3		
Econ. 301 or 303				B. A. 433-34	3	3	
304-315	3	3	3	Econ. 404-5-19	3	3	3
Psy. 221-22	3	3		Statistics 311	3		
English 321		3		B. A. 450-51-52	1	1	1
Econ. 302 or B.A. 337			3	B. A. 422			3
B. A. 326-27		3	3	Electives	5	2	8
Electives	3				18	18	18
	18	18	18				

A PROGRAM WITH EMPHASIS IN ACCOUNTING

Freshman Year	Quarter Hours Credit			Sophomore Year	Quarter Hours Credit		
Name of Course	I	II	III	Name of Course	I	II	III
English 101-2-3	3	3	3	Acctg. 311-12-13	3	3	3
Math. 11-12-73	3	3	3	Econ. 211-12-13	3	3	3
Acctg. 211-212-213 ...	3	3	3	Natural Sci. 121-2-3..	4	4	4
Acctg. Lab 111-12-13	1	1	1	English	3		
History 201-2-3	3	3	3	Geography 271-72		3	3
B. A. 101	3			Pol. Sci. 221-222.....		3	3
O. A. 211		3		Phys. Ed. 20-50	1	1	1
Art (and/or mus./				Air Sci. 251-52-53....	1	1	1
Phil.)			3	Geography 261	3		
Phy. Ed. 11-12-13	1	1	1				
Air Sci. 151-52-53	1	1	1				
Women 17	17	17	17	Women 17	17	17	17
Men 18	18	18	18	Men 18	18	18	18

Junior Year	Quarter Hours Credit			Senior Year	Quarter Hours Credit		
Name of Course	I	II	III	Name of Course	I	II	III
Acctg. 314-15-16	3	3	3	Acctg. 411-12	3	3	
Acctg. 400-401	3	3		Acctg. 413-14	3	3	
Acctg. 320			3	Economics 420-22		3	3
Bus. Law 323-24-25 ..	3	3	3	B.A. 433-1434		3	3
B.A. 335	3			B.A. 441	3		
B.A. 326-27		3	3	Acctg. 418			3
Bus. English 321-322 .		3	3	B.A. 422	3		
*Psychology 221-22 ..	3	3		Electives	3		
Phys. Ed. (if not taken				B.A. 450-51-52	1	1	1
in freshman & soph.)	1	1	1	B.A. 423-24		3	3
Electives	3		3		15	15	15
	18	18	18				

Electives:
Econ. 301 (3)
Econ. 302 (3)
Econ. 303 (3)
Stat. 311 (3)
Econ. 403 (3)
Econ. 404 (3)
Econ. 419 (3)
B.A. 425 (3)

COURSE DESCRIPTIONS

Accounting

211-12-13. *Elementary Accounting.* (9) A basic course in accounting theory and practice. A prerequisite to all other courses in accounting. Two one-hour laboratory periods.

Accounting 220. *Machine Accounting.* (3) Methods and problems of machine accounting including the use of punched-card system and electronic methods of processing accounting data. Prerequisite: Accounting 213.

311-12-13. *Intermediate Accounting.* (9) Theory and practice relating to the various balance sheet accounts, working papers, and statements. Prerequisite: Accounting 213. Two one-hour laboratory periods.

314-15-16. *Cost Accounting.* (9) A study of the principles of manufacturing and distribution cost accounting. Material, labor, and overhead cost in job order and process cost accounting; determination analysis of costs of distribution; and related problems treated; cost systems analyzed. (Formerly Acctg. 321-421-422). Prerequisite: Acctg. 313.

317. *Administrative Aspects of Accounting.* (3) Designed to aid students who expect to become managers; provides information concerning the meaning of accounting figures, terms, and techniques of analysis of reports; provides applications of techniques in making managerial decisions and judging performance. (Formerly Acctg. 316)

320. *Governmental Accounting.* (3) Accounting theory and problems peculiar to governmental units including organization, budgetary accounting, fiscal accounting, auditing, classification and use of funds, and financial statements and reports. Prerequisite: Accounting 213.

400-401. *Advanced Accounting Problems.* (6) Theory and problems in advanced topics, including partnership problems, insolvency, estates and trusts and consolidated statements. Prerequisite: Accounting 313.

411-412. *Federal Tax Accounting.* (6) Designed to provide a comprehensive explanation of the Federal tax structure and to provide training in the application of tax principles to specific problems.

413-14. *Auditing Procedures.* (6) Principles of auditing which include a critical examination of financial statements. The text materials are amplified by special problems. Prerequisite: Advanced status in Accounting. (Formerly Acctg. 423).

415. *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. (Formerly Accounting 462).

418. *Accounting Systems.* (3) A study of the problems involved in the design and installation of accounting systems, including systematizing the clerical department of business. Prerequisite: Advanced status in Accounting. (Formerly Acctg. 461).

Business Administration

101. *Business Principles.* (3) A survey of the fundamental principles of business organization, finance, banking, credit management, salesmanship, and advertising. Required for all business majors. (Formerly Bus. Orient. 101).

102. *Business Finance.* (3) A survey of the general field of finance, including discussions of promotion; various types of business organizations; capitalization; methods of obtaining capital; business failures and re-organization.

201. *Data Processing.* (3) A study of the basic principles and applications of punched-card and record-keeping by tape in business. Card, tape, and business report designs; basic card and tape equipment, and their functions. Prerequisite: Sophomore status and above.

323-24-25. *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. (Formerly B.A. 322-23-24).

326-27. *Marketing Principles.* (6) A general survey of the marketing structure as it exists and functions. Problems involving marketing procedures, policies, and techniques are considered. (Formerly B.A. 311-12).

328. *Principles of Retailing.* (3) A basic survey course for students interested in retailing. Special consideration given to store organization, operation, and current distribution problems.

329. *Salesmanship.* (3) A study of the basic principles underlying the sales process and their application to the problems of salesmen. Prerequisite: Psychology 221-22 or registered therein. (Formerly B.A. 313).

330. *The Small Business Enterprise.* (3) Problems and practices peculiar to the establishment and operation of small business enterprises will be considered; opportunities, hazards, and management problems will be analyzed; case studies will be reviewed. Prerequisite; Permission of the instructor.

331-32. *Business Organization and Management.* (6) A study of the various types of business organizations and management with special emphasis on their financing by means of stock, bonds, and other instruments of finance. The work of promotion, underwriting securities, internal financial management, reorganization and receivership treated.

335. *Report Writing.* (3) The purpose of this course is to help students to develop a clear, concise, convincing, and correct writing style which is adopted to readers of a report; to help students collect analyze, organize, interpret, and present information to solve business problems; to instill in students an awareness of correct grammar and punctuation in writing.

336. *Internship in Business Administration.* (3) In this course, the student accepts an assignment for a period of 12 consecutive weeks in a business firm or institution cooperating with Tennessee A. and I. State University. The student works a minimum of 240 hours during the 12 week period and is paid a pre-determined, specified hourly rate by the cooperating employer. Elective with Departmental approval.

337. *Public Finance.* (3) Business expenditures; Federal and state reserve systems; financial administration; budgeting and public debt management.

401. *Problems in Insurance and Real Estate.* (3) Law of property as related to conveyance, bailment, carriers, negligence, surety, guaranty and insurance.

402. *Property, Wills, Trusts, Estates, and Taxation.* (3) Advanced treatment of the problems of organization and management of estates and trusts; wills, trusts, and estates and the taxation thereof by the Federal and state governments; estate planning and business insurance.

403. *Law of Agency, Partnerships and Corporations.* (3) An examination of the various relationships of agency is pursued in terms of laws involving the formation, operation, and termination of partnerships and corporations.

420-21. *Money and Banking.* (6) The purpose of this course is to develop a sound understanding of the role of banks in our economy. Specific emphasis 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.

422. *Corporation Finance.* (3) Corporate organization and control; corporate securities; the management of fixed capital, working capital and income; reserve, surplus, and undivided profits; investment banking and the securities market; failure and reorganization. Prerequisites; 331-32.

423-24. *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, personnel procedures, and employee relationships are considered.

425. *Principles of Real Estate.* (3) The course deals with real estate contracts, deeds, and mortgages, the value of leases and leaseholds, and the valuation of real estate. Questions of title and title insurance and the Tennessee law regarding real property are considered. (Formerly Business Administration 437).

431-32. *Advertising Principles.* (6) A study of the economics of advertising the use of research in advertising, analysis of current advertising policy and methods of procedure in selecting appeals and media, writing copy, and constructing layouts. Prerequisites; Marketing 311-12. (Formerly B.A. 411-12).

433-34. *Principles of Insurance.* (9) Presents the personal and business uses and fundamental principles of insurance in general and the types and organization of the insurance business. Emphasis is placed on life, accident

and health, automobile, fire, and other property lines. (Formerly B.A. 325-26-27).

440. *Principles of Investments.* (3) Consideration is given to the functions and economic basis of investment; basic elements of investment and personal investment programs; although emphasis is on investment in securities, other avenues of investment are considered.

441. *Principles of Management.* (3) A study of the fundamentals of the organization and management of business and industry; the tasks of the business manager; correlation of the productive functions; scientific management; basic features of business administration.

450-51-52. *Senior Project.* (3)

Courses In Economics

211-2-3. *Economic Principles.* (9) Principles and problems associated with the production, exchange, and the use of wealth.

This course is a prerequisite to all Junior and Senior level courses in Economics.

204. *Consumer Economics.* (3) Designed to acquaint the student with the character and significance of the factors which determine and govern consumption, particularly as they are related to the prosperity and stability of the economic system.

315. *Current Economic Problems.* (3) Examination of key economic issues. Such major objectives as economic progress, economic stability, economic freedom, and economic justice provides a general framework for analyzing existing and proposed economic programs and policies. Analysis of problems relating to concentration of economic power, economic growth, inflation, unemployment, public debt, income maintenance, agricultural and international economic affairs.

301. *Labor Problems.* (3) A study of labor problems from union and management point of view with emphasis on the social and economic aspects of labor relations.

302. *Intermediate Economics* ()3 An examination of the theory of price and distribution, as to the price-market system and the means by which it allocates scarce resources among computing wants. Topics included are: Consumer behavior and analysis, Product pricing and output Resource pricing, and the welfare implications of alternative market organizations. Prerequisite: Economics 213.

303. *Labor Legislation and Public Policy.* (3) Criteria for public policy concerning unions and collective bargaining; current problems in labor legislation; role of federal and state government in industrial relations; decision-making process in labor legislation.

304. *Government and Business.* (3) This course deals with the problems involved in developing and maintaining public policy that will preserve and stimulate competition in American industry. Attention will focus on administrative and legislative controls in such areas as general restraints of trade and monopoly, regulation of standards of fair competition, licensing and regulation of entry into trade and professions, and regulation of public utilities and services.

401. *Economic Development of the United States.* (3) A study in the progress in agriculture, industry, communication, transportation, banking and trade, and the developments in governmental economic policy.

402. *State and Local Taxation.* (3) A survey course devoted to tax problems of state and local governments; special emphasis on state questions.

403. *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.

404. *Comparative Economic Systems.* (3) The study and appraisal of the operation of and theories underlying capitalism, fascism, socialism, communism, and other economic systems.

405. *International Economics.* (3) Deals with the history and methods of international economic relations and the effects of international trade upon the efficiency, growth, and stability of national economies. This course is

concerned with the analysis of international policies involving commodity agreements, trade restrictions, exchange controls, exchange rates, commercial treaties, custom unions, European economic intergration, foreign investments, and related topics.

419. *Business Economics.* (3) This course deals with the application of economic theory to business decision making, with emphasis on profit objectives, capital budgeting, economic forecasting, and economic measurement.

420-21. *Money and Banking.* (6) The purpose of this course is to develop a sound understanding of the role of banks in our economy. Specific emphasis 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.

DEPARTMENT OF BUSINESS EDUCATION

CECILLE E. CRUMP, Ed.D., *Head*

A bachelor of science degree may be obtained in the department of Business Education.

The department is a member of the National Association of Business Teacher Educators. Membership in Beta Psi Chapter of Pi Omega Pi, national honorary scholastic fraternity in Business Education, is avialable to all students in Business Education on the basis of superior attainment during the first two years of college work.

Requirements for Undergraduate Degree

A total of 197 hours is required for graduation, of which 70 hours must be completed in the 300 and 400 level courses. Aminimum of 45 hours is required for a major in Business Education and/or Office Administration, of which 30 hours must be completed in the 300 and 400 level courses.

Students following a program of study for Office Administration will obtain 36 quarter hours in English and 36 hours in Business Administration.

Certification in Tennessee

Students following the program of study for Business Education may obtain state certification in business subjects.

To be endorsed in general business, the applicant shall offer a minimum of 27 quarter hours, including 18 quarter hours in introduction to business, accounting, typewriting, business law, economics, business mathematics.

An applicant endorsed in general business may secure additional single subject endorsements for the following subjects by the completion of the hours indicated including quarter hours completed for endorsement in general business:

Bookkeeping	15	quarter hours
Typewriting	9	quarter hours, including 3 hours of advanced typewriting
Shorthand	9	quarter hours, including 3 hours of advanced shorthand
Business Law	9	quarter hours
Economics	18	quarter hours, including principles and related subjects in that field
Salesmanship	9	quarter hours in marketing
Secretarial Practice	3	quarter hours of office practice plus certification in shorthand and typewriting
Business Machines	3	quarter hours
Business English	3	quarter hours
Business Arithmetic	9	quarter hours (6 in mathematics and 3 in business mathematics, or 9 in business mathematics)
Office or Clerical Practice	3	quarter hours in office, secretarial or clerical practice
Consumer Education	3	quarter hours in consumer economics or consumer education

Students desiring certification in other states should check bulletins in the departmental office.

DESCRIPTION OF PLAN FOR SUPERVISED STUDENT TEACHING

During the senior year, students are required to block one quarter for intensive methods and student teaching. Prospective business teachers spend two weeks, six hours a day, studying methods and procedures in directing learning activities. They are then placed in a classroom for observation and student teaching activities. After spending eight weeks at an off-campus teaching center, the students return to the department for one week to evaluate their experiences.

Off-campus student teaching centers are selected on the following basis:

1. The High School must offer business subjects (at least two or more).
2. The High School must be accredited by the State.
3. There must be a full-time business education teacher with the following qualifications:
   a. At least two years teaching experience
   b. Hold the Bachelor's degree in Business Education
   c. Cooperative attitude with the training program

OFFICE INTERNSHIP

Students are required to spend one quarter in studying basic office procedures and in engaging in full-time office employment. For the first four weeks of the quarter, students work in the departmental secretarial laboratory where they study office management and engage in laboratory experiences under the supervision of the departmental supervisor. Then, they are placed in an office to work for six weeks. They return to the department the last week of the quarter for an evaluation of their experiences.

Offices selected for Office Internship are provided as follows:

1. Those offices requiring the services of a full-time secretary.
2. Offices with necessary and up-to-date equipment.
3. Offices with employers willing to cooperate with our training program.

Minor

The Department of Business Education offers a minor to students in other divisions or departments of the University. Thirty-six (36) quarter hours in Business Education and Office Administration courses are required for the minor. The minor may be in Secretarial Training or Teacher Education. Advisers in the Division should be consulted early in the four-year college period concerning a course of study.

TEACHER EDUCATION CURRICULUM IN BUSINESS EDUCATION

Freshman Year	*Quarter Hours Credit*			*Sophomore Year*	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*	*Name of Course*	*I*	*II*	*III*
English 101-2-3	3	3	3	English 211-12-13	3	3	3
Science 121-22-23	4	4	4	Soc. Stud. 111-12-13	3	3	3
Math. 111, 112, 173	3	3	3	Econ. 211-12-13	3	3	3
Mus. 131, Art 133, Health 151	3	3	3	Education 201, Psych. 242-43	3	3	3
Offi. Admin. 212-13-21 22	3	3	3	Offi. Admin. 204-5-6	3	3	3
Bus. Ed. 101-2-3	1	1	1	Phys. Ed.	1	1	1
Phys. Ed. 11-12-13	1	1	1	Air Science (Men)	1	1	1
Air Science (Men)	1	1	1				
Women	18	18	18	Women	16	16	16
Men	19	19	19	Men	17	17	17

Junior Year	Quarter Hours Credit		
Name of Course	I	II	III
Off. Admin. 304-5-6	3	3	3
Acctg. 211-12-13	3	3	3
English 321-22	3	3	
Offi. Admin. 201			3
Bus. Admin. 324-24	3	3	
Bus. Ed. 400			3
Ed. 301	3		
Soc. Stud. 114	3		
Speech 221		3	
B.A. 331			3
	18	15	15

Senior Year	Quarter Hours Credit		
Name of Course	I	II	III
Bus. Ed. 471ABC	6		
Bus. Ed. 472	9		
OA 401-2-3		9	
OA 434		3	
BE 450		3	
BE 413			3
Psy. 311			3
Psy. 312			3
Psy. 463			3
Electives			6
	15	15	18

BACHELOR OF SCIENCE DEGREE CURRICULUM IN BUSINESS EDUCATION

Secretarial Science

Freshman Year	Quarter Hours Credit		
Name of Course	I	II	III
English 101-2-3	3	3	3
Science 212-2-3	4	4	4
Math. 111, 112,173	3	3	3
B.E. 101-2-3	1	1	1
O.A. 212-13, 221-22	3	3	3
Health 151, Music 131, Art 133	3	3	3
Physical Ed. 101-2-3	1	1	1
Air Science (Men)	1	1	1
Women	18	18	18
Men	19	19	19

Sophomore Year	Quarter Hours Credit		
Name of Course	I	II	III
English 211-2-3	3	3	3
Economics 211-2-3	3	3	3
O.A. 204-5-6	3	3	3
O.A. 201-2, Psy. 221	3	3	3
Speech 221, Eng. 272, Art 203	3	3	3
Phy. Educ.	1	1	1
Air Science (Men)	1	1	1
Women	16	16	16
Men	17	17	17

Junior Year	Quarter Hours Credit		
Name of Course	I	II	III
English 321-22-23	3	3	3
O.A. 304-5-6	3	3	3
Acctg. 211-12-13	3	3	3
B.A. 323-24-25	3	3	3
English 301-2-3	3	3	3
B.A. 326-335	3	3	
	18	18	15

Senior Year	Quarter Hours Credit		
Name of Course	I	II	III
O.A. 401-2-3	3		6
B.A. 423	3		
B.E. 450			3
B.A. 331-32	3	3	
Psy. 311	3		
O.A. 301		3	
Electives	6	9	
O.A. 434			3
	18	15	12

DESCRIPTION OF COURSES

OFFICE ADMINISTRATION

OA 201. *Office Machines.* (3) Basic instruction and training to develop reasonable skill in the operation of the calculating, duplicating, voice writing, and other common office appliances. (Prerequisite: O.A. 212.)

OA 202. *Office Machines.* (3) Instruction and training to develop a high degree of skill in the operating of the three major duplicating machines: a mimeograph, multilith and multigraph. Also includes the vari-typer, addressograph, and other office appliances. Prerequisite: OA 201.

OA 204-5-6. *Beginning Shorthand.* (9) Designed to develop an understanding of the basic principles of simplified Gregg Shorthand, and the ability to apply these principles to an extensive shorthand writing vocabulary.

OA 211-2-3. *Beginning Typewriting.* (9) Beginning typewriting for business majors, and so far as facilities permit, for other students who wish to acquire skill in typewriting.

OA 221-222. *Typewriting Speed.* (6) Development of superior skill in typewriting, to enable students to meet the demand for higher production rates for typewritten material.

OA 301. *Office Systems.* (3) Routine and procedures for handling correspondence and mailing, filing system, oral communication, office planning and layout. Systems of control are applied to each type of office work.

OA 302. *Survey of Punched Card Data Processing.* (3) Principles and operation of data processing in business—including card designing, key punching, sorting, programming, and tabulating. Basic skill in the operation of machines is stressed. Classes meet five days a week and extra laboratory hours are arranged.

OA 303. *Problems in Data Processing.* (3) Practical application of data processing in business operations—programming, system designing, and analyzing and converting business procedures to electronic processing equipment. Classesm eet five days a week, and extra laboratory hours are arranged.

OA 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 type transcripts.

OA 306. *Secretarial Training.* (3) Instruction in office procedures, performance of upper-level secretarial duties, filing, business ethics, and personality development.

OA 401-2-3. *Office Internship and Secretarial Problems.* (9) Based on a job-training program which provides opportunity for practical experience under actual office conditions. For seniors only.

OA 434. *Problems of Office Management.* (3) Problems involved in planning and directing the functions of business and professional offices, including office building, layout, management and preparation of office manuals.

BUSINESS EDUCATION

BE 101-2-3. *Guidance and Orientation to Business.* (3) A guidance, business and library orientation course for freshmen and new students. Includes orientation to the University, to the Department, to the area of business, and a survey of library resources and techniques. During the last quarter, students study principles of business.

BE 400. *Principles of Business Education.* (3) A study of the historical background, philosophy and objectives, principles and problems, and trends in business education.

BE 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.

BE 450. *Senior Project Writing.* (3) Designed to aid the senior student in writing the project required for graduation.

BE 471A. *Methods of Teaching Typewriting.* (2) Methods and materials in teaching typewriting. (Pre-requisite, BE 400, courses in typewriting and education courses). Seniors only. See requirements for student teaching.

BE 471B. *Methods of Teaching Shorthand.* (2) Methods and materials in teaching typewriting. (Pre-requisite, BE 400, courses in typewriting and education courses). Seniors only. See requirements for student teaching.

BE 471C. *Teaching the Social Business Subjects.* (2) Methods of classroom procedure in the teaching of general business subjects, business law, business organization, elementary economics, bookkeeping, and other business subjects.

BE 472. *Observation and Student Teaching Business Subjects.* (9) Student teaching in the field in an accredited high school, in shorthand, typewriting, and other business subjects. (Prerequisite: methods courses).

Terminal Vocational Training

The basic objective of the terminal vocational training program is to equip each student with sufficient knowledges and skills to enter an office occupation and to perform satisfactorily on the job.

The program provides marketable job skills for workers in the following office occupations:

1. Clerical Work—including Typewriting
2. Stenography
3. Office Machine Operations

When the trainee has completed the requirements of the job-training program, he is presented a certificate which indicates the type of training he has received and the level of proficiency he has achieved.

THE CLERICAL CURRICULUM

FIRST YEAR

	Quarter Hours Credit		
	Fall	*Winter*	*Spring*
BE 101-2-3 Orientation, Business Principles, and Spelling	1	1	1
OA 211/12/13 Typewriting	3	3	3
OA 21-22-23 Record Keeping and Applied Arithmetic	3	3	3
OA 31-32-33 Clerical Training	3	3	3
OA 61-62-63 Business Communication	3	3	3
OA 71-72-73 Personal-Social Relations	1	1	1
Total	14	14	14

SECOND YEAR

	Quarter Hours Credit		
	Fall	*Winter*	*Spring*
OA 221-222 Production Typewriting	3	3	
OA 201-2-3 Office Machines	3	3	
OA 74-75 Office Relations and Etiquette	1	1	
OA 34-35-36 Office Practice	3	3	6
Sp 221 Business and Professional Speech	3		
OA 54 Key Punch Operation		3	
Total	13	13	6

THE STENOGRAPHIC CURRICULUM

FIRST YEAR

	Quarter Hours Credit		
	Fall	*Winter*	*Spring*
BE 101-2-3 Orientation, Business Principles, and Spelling	1	1	1
OA 211/12/13 Typewriting	3	3	3
OA 61-62-63 Business Communication	3	3	3
OA 71-72-73 Personal-Social Relations	1	1	1
OA 204-5-6 Shorthand	3	3	3
OA 31-32-33 Clerical Training	3	3	3
Total	14	14	14

SECOND YEAR

	Quarter Hours Credit		
	Fall	*Winter*	*Spring*
OA 304-5 Dictation and Transcription	3	3	
OA 221/22 Production Typewriting	3		
Sp 221 Business and Professional Speech	3		
OA 74-75 Office Relations and Etiquette	1	1	

OA 64 Advanced Business Communication	3		
OA 46 Office Procedures		3	
OA 65 Report Writing		3	
BA 101 Business Principles		3	
OA 47 Stenographic Practices			6
Total	13	13	6

OFFICE MACHINES CURRICULUM

Duplicating Operator (51)

B.A. 101 Business Principles	3
O.A. 71 Personal-Social Relations	1
O.A. 211-12-13 Typewriting	3
O.A. 51 Duplicating	6
	13

Accounting, Billing and Posting Machines Operator (52)

B.A. 101 Business Principles	3
O.A. 71 Personal-Social Relations	1
O.A. 211-12-13 Typewriting	3
O.A. 52 Accounting Machines Operation	6
	13

Data Processing Operator (53)

B.A. 101 Business Principles	3
O.A. 71 Personal-Social Relations	1
O.A. 211-12-13 Typewriting	3
O.A. Data Processing	6
	13

Key Punch Operator (54)

B.A. 101 Business Principles	3
O.A. 71 Personal-Social Relations	1
O.A. 211-12-13-21 Typewriting	1
O.A. 54 Key Punch Operation	6
	13

DESCRIPTION OF COURSES

OA 21-22-23. *Record Keeping and Applied Arithmetic.* (9) General Aspects of record keeping for business, including, cashier's records, checks and bank statements, petty cash, budget, purchase, payroll, and retail salesclerk records, and record keeping for small retail businesses; related arithmetic computations are included.

OA 31-32-33. *Clerical Training.* (9) Basic clerical procedures, including filing, business forms, office communication, visual reproduction, mail and messenger service, receiving callers, typing business papers, sales procedures, and handling cash and checks.

OA 34-35-36. *Office Practice.* (12) The mastery of offce duties in realistic office situations. During the last quarter, students are placed on jobs.

OA 46. *Office Procedures.* (6) A study of the work performed in a typical office—business information needed by the office worker, her duties, and the basic skills, training, and personal traits required.

OA 47. *Stenographic Practice.* (6) Internship in an office in the position of a stenographer.

OA 51. *Duplicating.* (6) The operation of machines frequently used by office workers, with particular concentration on automated equipment—spirit, stencil, offset, and automatic machines.

OA 52. *Accounting Machines Operation.* (6) Instruction emphasizes common recordkeeping activities, including customer billing, payrolls, deposit ledgers, knowledge of form design and analysis, requiring skill on billing and posting machines.

OA 53.*Data Processing.* (6) Principles and operation of data processing in business, including card designing, key punching, sorting, programming, and tabulating. Basic skill in the operation of machines is stressed.

OA 54. *Key Punch Operation.* (6) Development of skill in key punching for automated business machines.

OA 61-62-63. *Business Communication.* (9) Development of ability to write business correspondence, including a review of basic English principles.

OA 64. *Advanced Business Communication.* (3) Development of the ability to compose and edit business correspondence. The course is designed for students in the stenographic curriculum.

OA 65. *Report Writing.* (3) Development of the ability to compose reports requierd in business.

OA 71-72-73. *Personal-Social Relations.* (3) An understanding of and skill in inter-personal relationships, personality, morale, personal efficiency, and human behavior as they relate to work climate and productivity.

OA 74-75. *Office Relations and Etiquette.* (2) Orientation to office decorum and the development of the ability to work with people.

DEPARTMENT OF HEALTH AND PHYSICAL EDUCATION

ROBERT SAMUEL COBB, Ph.D., *Head*
E. P. MITCHELL, Ph.D., *Chairman of the Upper Division*
C. M. LEATHERS, H.S.D., *Chairman of the Lower Division*

The curriculum in the Department of Health and Physical Education is designed to serve all students in the University by contributing to their health, organic vigor, and good mental and physical habits. The Department aims: (1) to provide incentives for students to engage in some physical activities as a balance to the demands of college life; (2) to provide opportunities for students to develop a reasonable degree of skill in a variety of leisure-time activities, both for immediate and later use; (3) to offer opportunities for worthwhile social contacts in the activities of the service program, in intramural activities, and in intercollegiate athletics; and (4) to prepare prospective teachers in the field of health education, physical education, and athletic coaching.

A minimum of 195 quarter hours is required for graduation with a major in health and physical education, of which 66 quarter hours must be on the 300-400 levels. Students who qualify for the bachelor's degree with a major in this Department and plan to teach on the secondary school level must earn 64 quarter hours in the General Education Curriculum and 36 quarter hours in Core Professional Education as outlined and prescribed by the University.

A major in health and physical education requires a minimum of sixty-six (66) quarter hours distributed as follows: thirty-six (36) quarter hours in physical education theory; eighteen (18) quarter hours in health education; and twelve (12) quarter hours in physical education fundamentals and techniques. Of the sixty-six (66) quarter hours thirty-six (36) quarter hours must be in courses numbered in the 300 and 400 series.

A minor in health education requires thirty-three (33) quarter hours as outlined. A *minor in physical education* requires thirty-six (36) quarter hours as outlined.

An applicant for *certification in health and physical education* must complete a total of thirty-six (36) quarter hours of which eighteen (18) quarter hours are in health education and eighteen (18) quarter hours are in physical education as outlined.

THE PHYSICAL EDUCATION SERVICE PROGRAM

All freshman and sophomore students are required to take two hours of physical education activity each week until six quarters of work have been completed. A student whose physical condition does not permit him to pursue the regular activity courses must take courses in "Individually adapted physical education." These students must secure a permit through the school health service following a physical examination.

Required Courses for All Freshman Students:		*Credit Hours*
P.E. 11	Body Conditioning and Group Games	1
P.E. 12	Elementary swimming	1
P.E. 13	Volleyball	1

Required Courses for All Sophomore Students—Select any three:

P.E. 21	Basketball	1
P.E. 22	Folk and Square Dancing	1
P.E. 23	Soccer and Speedball	1
P.E. 26	Tennis	1
P.E. 27	Clog and Tap Dancing	1
P.E. 28	Modern Dance	1
P.E. 29	Softball	1
P.E. 30	Touch Football	1
P.E. 31	Archery	1
P.E. 32	Badminton and Deck Tennis	1
P.E. 34	Track and Field	1
P.E. 35	Wrestling	1
P.E. 36	Field Hockey	1
P.E. 37	Small Craft	1
P.E. 38	Bowling	1
P.E. 39	Handball and Shuffleboard	1
P.E. 41	Golf	1
P.E. 42	Social Dancing	1
P.E. 43	Horseback Riding	1
P.E. 91-96 (incl.)	Individually Adapted Physical Education	1

Uniform Regulations.—Students enrolled in physical education activity courses are required to provide themselves with the following apparels to be secured through the University Book Store:

Women	
One regulation gymnasium suit	$ 4.00
One pair of socks	.50
One pair of gymnasium shoes	3.50
One swimming suit	3.00
One bathing cap	1.00
Total	$12.00

Men	
One white "T" shirt	$ 1.00
One pair of blue shorts	1.50
One pair of socks	.50
One pair of gymnasium shoes	4.00
One pair of swimming trunks	2.50
One athletic supporter	.75
Total	$10.25

These prices are subject to change. Uniform regulations for elected courses as bowling, dancing, and golf are governed by the activity (for example: Leotards $4.25, Bowling shoes $4.95).

Lock-Locker Regulation.—Each "woman" student is required to purchase a specified regulation lock which is "hers" for subsequent courses. The lock must be purchased at the University Bookstore.

Courses Required for Health Instruction as a Minor. A minor in health education must include 33 quarter hours of work as follows:

Course		*Credit Hours*
Health 151	Personal Hygiene	3
Health 211	Health Examination	3
Health 212	School Hygiene	3
Health 213	Health Instruction	3
Health 301	Community Hygiene and Sanitation	3
Health 302	First Aid	3
Health 304	Family Health	3
Nutrition 212	Nutrition for Teachers	3
HPE 401	Seminar in Health and Physical Educ.	3

HPE 402	Organization and Administration of Health and Physical Education	3
HPE 403	Individual Physical Education for Handicapped Students	3
	Total	33

Courses Required for Certification in the Area of Health Instruction

Course		Credit Hours
Health 151	Personal Hygiene	3
Health 211	Health Examination	3
Health 212	School Hygiene	3
Health 213	Health Instruction	3
Nutrition 212	Nutrition for Teachers	3
Health 301	Community Hygiene and Sanitation	3
Health 302	First Aid	3
Health 304	Family Health	3
	Total	24

COURSES IN HEALTH EDUCATION

Undergraduate

101. *Health and Physical Education Orientation.* (3) Introduces freshman to the requirements for effective college living in general and to the fields of health, education and physical education in particular. Includes a review of objectives, scientific foundations, opportunities for service and the qualifications and training of professional personnel in these two areas.

151. *Personal Hygiene.* (3) Emphasis is placed on positive health through a consideration of various conditions which affect health. A study of the care of the various systems of the body. Discussions center around food and nutrition; recreation and rest; care of the feet, hair, and skin; clothing; fads; and disease prevention. An elective for students fulfilling the 60-hour core curriculum in general education.

211. *Health Examination.* (3) Designed to give a general knowledge of those procedures established to determine the health status of the child and to relate ways and means of enlisting the cooperation of pupils, teachers, and parents in health protection. Required of all majors in health and physical education.

212. *Nutrition for Teachers.* (3) See Curriculum for area of Foods and Nutrition for description. Required of all majors in health and physical education.

212. *School Hygiene.* (3) Concerned with giving general information regarding 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 play in maintaining a healthful situation. Required of all majors in health and physical education.

213. *Health Instruction.* (3) Emphasis is placed on a knowledge of children, sources of health information and materials, and ways of gathering information. Suggestions are made regarding 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 in health and physical education.

301. *Community Hygiene and Sanitation.* (3) Designed to acquaint students and teachers with practices and procedures in controlling the environment, especially such practices as are now used in the control of communicable diseases, food, water, waste materials, and other sanitation problems arising in communities. Various methods of ventilating, heating, and lighting in their relationships to health are stressed. An elective for students fulfilling the 60-hour core curriculum in general education. Required of majors in health and physical education.

302. *First Aid.* (3) Major consideration is given to demonstration and practice of general first aid care of emergencies with specific stress placed on

bandaging, the controlling of bleeding, administering artificial respiration, and the treatment of strains, bruises, sprains, wounds, and shocks. A Red Cross certificate is given for successful completion of the course. Required of all majors in health education and physical education.

304 *Family Health.* (3) Aims to acquaint the student with the important individual, family, and community factors essential to healthful living. The significance of heredity, nutrition, and housing in effective family living is emphasized. Stress is placed upon the provision and use of health services for material and child care, and for the prevention of illness. The mental, physical, and emotional aspects of family health are also considered. Prerequisites: Nine quarter hours in health education. Required of all majors in health and physical education.

401. *Seminar in Health and Physical Education.* (3) Designed to acquaint the prospective teacher with changing trends in health education and in physical education as related to present educational practices. Conducted on a problem–project basis. Required of all majors in health and physical education and minors in health education or physical education. Prerequisites: Twenty-one quarter hours in health education and physical education courses.

402. *Organization and Administration of Health and Physical Education.* (3) Considers the philosophies policies, procedures, and financing of school health services and of the physical education program. Effective approaches are discussed for setting up a program and initiating it in relation to the entire curriculum of the school and community needs. Includes utilization and care of facilities and equipment, scheduling of classes, teaching loads, classification of pupils, selection of content, record keeping, and evaluation. Required of all majors in health and physical education and minors in health education or physical education. Prerequisite: Twenty-one quarter hours in health education and physical education courses.

403. *Individual Physical Education for Handicapped Students.* (3) A study of the types of handicapping conditions requiring modified physical education activity with instruction in specific activities for each type. Class work is organized on a laboratory basis to provide practical experience in conducting the program. Required of majors in health and hpysical education and minors in health education and physical education. Prerequisite: Health Education 302 and twenty-one quarter hours in health and physical education courses.

404. *Care and Prevention of Athletic Injuries.* (3) A course designed primarily for prospective coaches in the junior and senior high schools for preventing and administering treatment to athletic injuries. Discussion of the training program, including conditioning, athlete's diet, training room supplies, and the use of therapeutic equipment are included. Discussion, demonstration, and practical laboratory experiences related to various techniques used in taping and bandaging are provided. An elective for majors. Prerequisite: P.E. 312.

CURRICULUM FOR BACHELOR OF SCIENCE DEGREE WITH A MAJOR IN HEALTH AND PHYSICAL EDUCATION

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 101, 102, 103	3	3	3
Social Sciences	3	3	3
Biology 101, 102, 103	4	4	4
Health Educ. 151	3		
Art 133		3	
Music 131			3
Mathematics 111-112		3	3
HPE 101 Orientation	3		
Required P.E. 11, 12, 13	1	1	1
Air Science (Men)	1	1	1
Women	17	17	17
Men	18	18	18

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Literature 211, 212, 213	3	3	3
Social Sciences	3		
Zoology 202, 203		4	4
Health Educ. 211, 212, 213	3	3	3
Education 201	3		
Psychology 242, 243		3	3
Nutrition 212		3	
Phy. Educ. 103, 202, 243	2	1	3
Required P.E.	1	1	1
Air Science (Men)	1	1	1
Women	15	18	17
Men	16	19	18

Junior Year	Quarter Hours Credit		
Name of Course	*I*	*II*	*III*
Education 301, 387, 462	3	3	3
Health Educ. 301, 302, 304	3	3	3
Psychology 312	3		
Phy. Educ. 311, 312, 333	3	3	3
Phy. Educ. 421, 422, or 423, 434	2	2	
Health and Physical Education 371			3
Phys. Educ. (Fund and Tech Rhythms or Sports)	2	2	2
Electives of HPE 404		3	3
	16	16	17

Senior Year	Quarter Hours Credit		
Name of Course	*I*	*II*	*III*
Education 471-2		15	
Psychology 463			3
Health and Phys. Educ. 401, 402, 403	6		3
Health and Physical Education 450			3
Phys. Educ. (Fund and Tech Rhythms or Sports)	4		2
Electives	6		3
	16	15	14

SUMMARY OF REQUIREMENTS FOR HEALTH AND PHYSICAL EDUCATION MAJORS

Area	*Quarter Hours*
General Education	64
Core Professional	36
Major: Health and Physical Education	66
Zoology 202, 203	8
Minor and/or Electives	21
Total	195

		Quarter Hours
Sophomore:	Health 211, 212, 213 Physical Education 103*, 202*, 221*, 243	17
Junior:	Health 301, 302, 304 Physical Education 311, 312, 333, 471 Fundamentals and Techniques 6 hrs.	27
Senior:	HPE 401, 402, 403, 450 Physical Education 421 or 422/423/434 Fundamentals and Techniques 6 hrs.	22
	Total	66

A minimum of twelve (12) quarter hours is required in fundamentals and techniques from the three groups as outlined below in addition to PE 103 Conditioning, Apparatus, Stunts and Tumbling and PE 202 Intermediate Swimming.

GROUP I INDIVIDUAL AND DUAL SPORTS (any four) .... 4 hrs.

231	Archery	236	Golf
233	Tennis	235	Badminton
234	Track and Field	237	Handball and Shuffleboard
		239	Bowling

GROUP II TEAM SPORTS (any four) ..... 4 hrs.

101 M	Football	203	Volleyball and Deck Tennis
101 W	Field Hockey	212	Basketball
201	Soccer and Speedball	213	Softball

GROUP III RHYTHMS ..... 4 hrs.

211	Modern Dance	223	Modern Dance
*221	Folk Rhythms	240	Composition
222	Tap Rhythms		Social Dancing

* Exclusive of courses selected in General Education Core.

Courses Required for Physical Education as a Minor: Thirty-six (36) quarter hours.

Course			*Credit Hours*
Physical Education	103	Conditioning, Apparatus, Stunts and Tumbling	2
Physical Education	202	Intermediate Swimming	1
Physical Education	221	Folk Rhythms	2
Physical Education	243	Play and Games for Elementary Schools	3
Physical Education	333	Principles and Philosophy	3
Physical Education	421	Athletic Coaching and Officiating—Football	2
or	422	Athletic Coaching and Officiating—Basketball	2
Physical Education	371	Methods in Physical Education	3
Health Education	302	First Aid and Care of Injuries	3
Health and Physical Educ.	402	Organization and Administration of Health and Physical Education	3
Health and Physical Educ.	403.	Individual Physical Education for Handicapped Students	3
Electives from Rhythmic Activities			2
Physical Education	211	Fundamentals and Techniques—Modern Dance	
Physical Education	222	Tap Rhythms	
Physical Education	223	Modern Dance Composition	
Physical Education	240	Social Dancing	4
Electives from Team Sports			
Physical Education	101M	Fundamentals and Techniques—Football or 101W Fundamentals and Techniques—Field Hockey	
Physical Education	201	Fundamentals and Techniques—Soccer and Speedball	
Physical Education	203	Fundamentals and Techniques—Volleyball and Deck Tennis	
Physical Education	212	Fundamentals and Techniques—Basketball	
Physical Education	213	Fundamentals and Techniques—Softball	5
Electives from Individual and Dual Sports			
Physical Education	231	Fundamentals and Techniques—Archery	
Physical Education	233	Fundamentals and Techniques—Tennis	
Physical Education	234	Fundamentals and Techniques—Track and Field	
Physical Education	235	Fundamentals and Techniques—Badminton	
Physical Education	236	Fundamentals and Techniques—Golf	
Physical Education	237	Fundamentals and Techniques—Handball and Shuffleboard	
Physical Education	239	Fundamentals and Techniques—Bowling	
Physical Education	242	Fundamentals and Techniques—Wrestling	
Total			36

Courses Required for Certification in the Area of Health and Physical Education: Eighteen (18) quarter hours in Health Education and eighteen (18) quarter hours in Physical Education.

Course			*Credit Hours*
Nutrition	212	Nutrition for Teachers	3
Health	212	School Hygiene	3
Health	213	Health Instruction	3
Health	301	Community Hygiene and Sanitation	3
Health	302	First Aid	3
Health	304	Family Health	3
			18

Physical Education 103	Conditioning, Apparatus, Stunts and Tumbling	2
Physical Education 202	Intermediate Swimming	1
Physical Education 243	Play and Games for Elementary Schools	3
Health and Physical Educ. 403	Individual Physical Education for Handicapped Students	3
Electives from Rhythmic Activities one course:		
Physical Education 221	Folk Rhythms or	
Physical Education 222	Tap Rhythms	2
Electives from Team Sports four courses:		4
Physical Education 101M	Fundamentals and Techniques—Football or	
101W	Fundamentals and Techniques—Field Hockey	
Physical Education 201	Fundamentals and Techniques—Soccer and Speedball	
Physical Education 203	Fundamentals and Techniques—Volleyball and Deck Tennis	
Physical Education 212	Fundamentals and Techniques—Basketball	
Physical Education 213	Fundamentals and Techniques—Softball	
Electives from Individual and Dual Sports three courses:		3
Physical Education 231	Fundamentals and Techniques—Archery	
Physical Education 233	Fundamentals and Techniques—Tennis	
Physical Education 234	Fundamentals and Techniques—Track and Field	
Physical Education 235	Fundamentals and Techniques—Badminton	
Physical Education 236	Fundamentals and Techniques—Golf	
Physical Education 237	Fundamentals and Techniques—Handball and Shuffleboard	
Physical Education 239	Fundamentals and Techniques—Bowling	18
Total		36

COURSES IN PHYSICAL EDUCATION

Undergraduate

Courses numbered in the 100's and 200's include theoretical and practical work and are designed only for majors in health and physical education. All majors in health and physical education must elect skills courses in the following sequential order: two digit, fundamentals and techniques, coaching and officiating.

101M. *Fundamentals and Techniques in Football.* (1) Required of men majors.

101W. *Fundamentals and Techniques in Field Hockey.* (1) An elective.

103. *Conditioning, Apparatus Work, Stunts and Tumbling.* (2) Required of majors.

201. *Fundamentals and Techniques in Soccer and Speedball.* (1) An elective for majors.

202. *Intermediate Swimming.* (1) Instruction in the fundamental arm and leg stroke techniques, plain diving, and elementary forms of rescue leading to Red Cross Certification. Required of majors and those seeking certification. Prerequisite: Ability to swim 60 feet.

203. *Fundamentals and Techniques in Volleyball and Deck Tennis.* (1) An elective for majors.

211. *Fundamentals and Techniques in Modern Dance.* (1) An elective for majors.

212. *Fundamentals and Techniques in Basketball.* (1) An elective for majors.

213. *Fundamentals and Techniques in Softball.* (1) An elective for majors.

221. *Folk Rhythms.* (2) Dances that are peculiar to foreign countries such as Hungary, Germany, Sweden, Russia, and England are taught with emphasis upon the relationship of movements to custom and habits of each particular country. Opportunity for participating in mixers, rounds, and square dances with stress on the western type suitable for use at the upper elementary and secondary school levels. Required of majors.

222. *Tap Rhythms.* (2) Materials included which serve as a functional basis both for in-school and out-of-school activities. Modern music used to develop routine in slow and fast fox trot and waltz-time. An elective for majors in physical education.

223. *Modern Dance Composition.* (2) Experimentation 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. An elective for majors. Prerequisite: P.E. 211.

231. *Fundamentals and Techniques in Archery.* (1) An elective for majors in physical education.

232. *Advanced Swimming and Life Saving.* (1) A professional course for physical education teachers. Practice provided for all coordinate styles of swimming, instruction in life saving and water safety skills, and in techniques leading to the American Red Cross Senior Life Saving and Water Safety Certificate. An elective. Prerequisite P.E. 202 or equivalent.

233. *Fundamentals and Techniques in Tennis.* (1) An elective for majors.

234. *Fundamentals and Techniques in Track and Field.* (1) An elective for majors.

235. *Fundamentals and Techniques in Badminton.* (1) elective for majors.

236. *Fundamentals and Techniques in Golf.* (1) An elective for majors.

237. *Fundamentals and Techniques in Handball and Shuffleboard.* (1) An elective for majors.

239. *Fundamentals and Techniques in Bowling.* (1) An elective for majors.

240. *Social Dancing.* (1) An elective for majors.

242. *Fundamentals and Techniques in Wrestling.* (1) An elective for men majors.

243. *Play and Games for Elementary Schools.* Formerly P.E. 401. (3) Acquaints the student with a knowledge of the theory and practice of rhythmic activities, mimetic activities, hunting games, story plays, games, sports, athletic games, and other activities as they are related to the elementary school. Considers and explains different methods of teaching these activities at various age and grade levels. Provides a careful study of some 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. Discussions of play areas, equipment, and supplies. Required of majors and minors in physical education.

253. *Principles of Recreation.* (3) Designed to acquaint the student with the fundamentals of recreation and the techniques for organizing and promoting leisure-time activities for home, school, and community. Aims to develop a philosophy of recreation consistent with the aims and objectives of education. An elective.

311. *General Anatomy.* (3) Elementary course in gross anatomy designed to offer the student in health education and physical education, an opportunity to acquire a general knowledge of the gross structure of the human body. Required of all majors.

312. *Kinesiology.* (3) A study of the bones, joints, ligaments, and muscles and their functions in the various movements involved in games, sports, and other physical education activities. Stresses ways of incorporating health education and physical education. Required of majors in health and physical education. Prerequisite: P.E. 311.

333. *Principles and Philosophy.* (3) An application of anatomy, physiology, psychology, and sociology to physical education methods and procedures. Required of majors in physical education. Prerequisites: Educ. 201, Psych. 242, and 243.

353. *Playground Management and Supervision.* (3) Purposes to equip the student to manage and supervise playgrounds. Emphasizes program planning,

current trends in principles, philosophy, skills, and techniques in playground management and supervision. An elective.

401. *Seminar in Health and Physical Education.* (3) Designed to acquaint the prospective teacher with changing trends in health education and in physical education as related to present educational practices. Conducted on a problem– project basis. Required of all majors in health and physical education and minors in health education and physical education. Prerequisites: Twenty-one quarter hours in health education and physical education courses.

402. *Organization and Administration of Health and Physical Education.* (3) Considers the philosophies, policies, procedures, and financing of school health services and of the physical education program. Effective approaches are discussed for setting up a program and initiating it in relation to the entire curriculum of the school and community needs. Includes utilization and care of facilities and equipment, scheduling of classes, teaching loads, classification of pupils, selection of content, record keeping, and evaluating. Required of all majors in health and physical education and minors in health education or physical education. Prerequisites: Twenty-one quarter hours in health education and physical education courses.

403. *Individual Physical Education for Handicapped Students.* (3) A study of the types "of handicapping conditions" requiring modified physical education activity with instruction in specific activities for each type. Class work organized on a laboratory basis to provide practical experience in conducting the program. Required of majors in health and physical education and minors in health education and physical education. Prerequisite: Health Education 302 and twenty-one quarter hours in health and physical education courses.

412. *Organization and Administration of Recreation.* (3) Aims to give the student a knowledge of the organizational, administrative, and supervisory policies and procedures utilized in the field of recreation. This knowledge is further supplemented with the skills and techniques necessary to prepare the student to meet and solve the many problems to be encountered as an administrator of recreation in parks, playgrounds, churches, camps, settlement houses, Christian associations, clubs, and community centers. An elective.

413. *Program Planning in Physical Education.* (3) Acquaints the student with the state and recommended programs in physical education. Stresses ways of incorporating physical education into the total school program. Emphasis is placed on plans and procedures for adapting programs to local conditions. An elective for majors and minors in health and physical education. Prerequisites: P.E. 243, 333, and 471.

414. *Organization and Administration of Camping and Scouting.* (3) It is designed to give the student a general background and information about the organization and administration of camping and scouting and suggests means of helping the community or neighborhood organize itself to utilize the program. It further emphasizes the physical aspects, especially in camping and outdoor activities. An elective.

421. *Athletic Coaching and Officiating in Football.* (2) Examinations and explanations of rules, methods of organizing, practice and handling of teams, strategy, team offense and defense, and various fundamentals and techniques in football. Required of men majors in health and physical education. Prerequisite: Approval of the instructor.

422M. *Athletic Coaching and Officiating in Basketball.* (2) Fundamentals of basketball from a coach's and an official's point of view. Required of men majors in health and physical education. Prerequisite: Approval of the instructor.

422W. *Athletic Coaching and Officiating in Basketball and Volleyball.* (2) Fundamentals of basketball and volleyball from a coach's and an official's point of view. An opportunity given for the student to qualify as a local or national official in basketball and/or volleyball. Required of women majors in physical education. Prerequisite: Approval of the instructor.

PE 423. *Athletic Coaching and Officiating in Track and Field.* (2) An elective for men and women majors which discusses fundamentals of track and field events from a coaching and officiating point of view. An opportunity is given the student to learn methods of organizing a track team; practice, sched-

TENNESSEE AGRICULTURAL AND INDUSTRIAL STATE UNIVERSITY

1965-1966 University Calendar

FALL QUARTER 1965

September 1, Wednesday ..... Last Date to receive Application and transcripts for Fall Quarter
September 17-18, Friday-Saturday ..... Faculty and Staff Workshops
September 20-23, Monday-Thursday ..... Freshman Week
September 22 Wednesday, (8:00 a.m.-4:00 p.m.) ..... Registration for Freshmen and New Students; Undergraduate and Graduate
September 23-25, Thursday-Saturday (8:00-4:00) ..... Registration for Upperclassmen and Graduate Students
September 27, Monday ..... Classes Begin at 8:00 a.m.
October 5, Tuesday ..... Opening Convocation
November 3-4, Wednesday-Thursday ..... Mid-Term Examinations
November 25-27, Thursday-Saturday ..... Thanksgiving Holidays
December 14-18, Tuesday-Saturday ..... Examinations, Fall Quarter
December 18, Saturday ..... Christmas Recess Begins after last scheduled class

WINTER QUARTER 1965-1966

January 3, Monday ..... Registration, Winter Quarter
January 4, Tuesday ..... Classes Begin at 8:00 a.m.
February 8-9, Tuesday-Wednesday ..... Mid-Term Examinations
March 11-16, Friday-Wednesday ..... Examinations, Winter Quarter
March 17-19, Thursday-Saturday ..... Spring Recess

SPRING QUARTER 1966

March 21, Monday ..... Registration, Spring Quarter
March 22, Tuesday ..... Classes Begin at 8:00 a.m.
April 27-28, Wednesday-Thursday ..... Mid-Term Examinations
May 30-June 3, Monday-Thursday ..... Examinations, Spring Quarter
June 5, Sunday ..... Baccalaureate-Commencement

SUMMER QUARTER 1966

First Term

June 13, Monday ..... Registration
June 14, Tuesday ..... Classes Begin at 8:00 a.m.
July 4, Monday ..... Holiday
July 15-16, Friday-Saturday ..... Examinations, First Six Weeks

Second Term

July 18, Monday ..... Registration
July 19, Tuesday ..... Classes Begin at 8:00 a.m.
August 18-19, Thursday-Friday ..... Examinations, Second Six Weeks
August 21, Sunday ..... Baccalaureate-Commencement Exercises

FEES AND EXPENSES

1965-1966

All fees listed on this sheet are quoted on a quarterly (12 weeks) basis. Approximately $35.00 per quarter should be allowed for books and supplies. Books and supplies can be purchased at the University Bookstore located in the Student Union Building.

CAMPUS STUDENTS FOR QUARTER

	TENNESSEE STUDENTS			OUT OF STATE STUDENTS		
	New Dorms	Clement Hankal	Others	New Dorms	Clement Hankal	Others
Tuition	None	None	None	$ 55.00	$ 55.00	$ 55.00
Composite Fee	$ 55.00	$ 55.00	$ 55.00	55.00	55.00	55.00
Board	105.00	105.00	105.00	105.00	105.00	105.00
Room Rent	75.00	60.00	51.00	75.00	60.00	51.00
TOTAL	$235.00	$220.00	$211.00	$290.00	$275.00	$266.00

CAMPUS STUDENTS MAKING MINIMUM PAYMENT*

	New Dorms	Clement Hankal	Others	New Dorms	Clement Hankal	Others
Tuition	None	None	None	$ 55.00	$ 55.00	$ 55.00
Composite Fee	$ 55.00	$ 55.00	$ 55.00	55.00	55.00	55.00
Board	35.00	35.00	35.00	35.00	35.00	35.00
Room Rent	75.00	60.00	51.00	75.00	60.00	51.00
TOTAL	$165.00	$150.00	$141.00	$220.00	$205.00	$196.00

OFF-CAMPUS STUDENTS FOR QUARTER

	TENNESSEE STUDENTS	OUT OF STATE STUDENTS
Tuition	None	$ 55.00
Composite Fee	$55.00	55.00
TOTAL	$55.00	$110.00

Off-campus students may purchase meal tickets at the Dining Hall for $35.00 per month.

NO CREDIT

The Business Manager is not authorized to grant deferment in payment of fees and bills due on Registration. A student is officially admitted to class only when the teacher is presented a schedule card which has been validated by the Office of Admissions and the Business Manager. PERSONAL CHECKS ARE NOT ACCEPTED. All Money Orders, Cashier's Checks, or Certified Checks should be made payable to Tennessee A. and I. State University and and sent to the BUSINESS MANAGER'S OFFICE, Tennessee A. and I. State University, Nashville, Tennessee 37203.

Male students should add $10.00 AFROTC deposit.

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*$35.00 due the first of October and November for first quarter; $35.00 due the first of January and February for second quarter and $35.00 due the first of April and May for third quarter.

uling, strategy in competition, diet, conditioning, and the psychology of coaching tract and field events are discussed. Prerequisite: Approval of the instructor.

431. *Measurement and Evaluation in Physical Education.* (3) Acquaints the student with tests available in physical education. Deals with the theory, application, and administration of tests for use in evaluating the content and methods, measuring students' achievements, and grading. Required of majors in health and physical education.

434. *Festivals and Demonstrations.* (2) Organized to acquaint the student with materials, methods, and techniques of presenting pageants, festivals, exhibitions, athletic events, special celebrations, and events of a similar nature. Includes a study and discussion of activities calling for a large number of participants and methods of combining a number of areas as dancing, dramatics, crafts, and athletics. An elective.

450. *Senior Project.* (3) Designed to give the student an opportunity to work upon and develop a problem of interest to him in the area of health and/or physical education. A student may follow one of two plans: namely: (1) prepare a junior thesis utilizing the techniques of professional writing which adhere to an acceptable form; or (2) present a laboratory problem which may be a dance recital, intramural or recreational program, pageant, or play day. If plan (2) is followed the student must write a synopsis of the project accompanied by photographs or drawing and diagrams. Required of prospective graduating seniors. A senior should enroll in this course at least one quarter prior to the expected date of graduation.

371. *Materials and Methods in Health and Physical Education.* (3) Special attention to content of the program, methods, procedures, techniques, and devices relative to individual and dual sports, team games, rhythms, self-testing activities, and related events for boys and girls at the secondary school level. Required of majors and minors in physical education. Prerequisites: P.E. 221, 222, and 243 and at least three (3) other fundamentals and techniques courses.

Ed. 471 and 472. 12 hrs. See description in education.

481. *Organization and Administration of Intramural Activities.* (3) Iectures, discussions, and projects dealing with finance, equipment, types of tournaments, schedules, policies, and officiating. An elective.

483. *History of Physical Education.* (3) The evolution of physical education from ancient time to the present. Considerations of the relationship of physical education to education and to national life and ideals during various historical periods. An elective.

DEPARTMENT OF PSYCHOLOGY

M. I. Claiborne, Ph.D., *Head*

The courses in the department of Psychology are designed to satisfy the needs of two groups of students: First, students who desire to major in psychology as preparation for a career in psychology or who desires intensive training in psychology as 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.

Requirements for a Major in Psychology

Requirements for a major in psychology are Psychology 221-22-23 (the basic courses in general psychology) and thirty-six additional hours in psychology courses on the 300 and 400 levels. Requirements for a minor in psychology are Psychology 221-22-23, and eighteen additional hours in psychology courses on the 300 and 400 levels.

Supporting courses in other departments required for a major in psychology are: Biology 111-12-13, Mathematics 131-32-33, Sociology 211-12-13, two years French or German, Art Appreciation and Music Appreciation.

Recommended electives: Genetics, Human Physiology, Physics, Philosophy, Anthropology, Economics and advanced courses in the areas of Sociology and Economics.

Graduation requirements for Bachelor of Arts degree in Psychology: complete and basic Liberal Arts Core, fulfill the general college requirements for Bachelor of Arts degree (two years college foreign language, one year laboratory science, one year college mathematics), earn a minimum of 195 hours credit, 72 of which must be in 300 and 400 level courses including the 36 hours of advanced psychology required for major.

NOTE: *Teacher Education.* General Psychology is not a teacher education area. Students who desire to major in psychology and also desire to qualify in a teacher education area are advised to major in the teacher education subject area they desire and to minor in psychology.

Psycho-Educational Clinic

Children's Level: The clinic offers a children's service to public schools that consists of mental testing and diagnosis of learning disabilities, with recommendations for treatment.

College Level: The clinic offers the following services to college students: educational guidance based on mental testing, aptitude testing, and interest and personality inventories; and diagnosis of academic failure followed by counseling relative to removing the causes of failure.

Reading Clinic: The reading clinic is designed to diagnose and offer training leading to the correction of reading disabilities on both the child and the adult level.

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

CURRICULUM FOR BACHELOR OF ARTS DEGREE WITH A MAJOR IN PSYCHOLOGY

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 101-02-03	3	3	3
Biology 111-12-13	4	4	4
Mathematics 111, 112, 113	3	3	3
French or German	3	3	3
History 121-22-23	3	3	3
Physical Education 11-12-13	1	1	1
Air Science (men only) 151-52-53	1	1	1
Women	17	17	17
Men	18	18	18

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Psychology 221-22-23	3	3	3
English 211-12-13	3	3	3
French or German	3	3	3
Sociology 211-12-13	3	3	3
Psychology 311	3		
Music and Art Appreciation		3	3
Physical Education 20-50	1	1	1
Air Science 251-52-53	1	1	1
Women	16	16	16
Men	17	17	17

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Psychology 321-22-23	3	3	3
Psychology 431-32-341	3	3	3
Electives	12	12	12
	18	18	18

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Psychology 411-12-13	3	3	3
Psychology 450-461-462	3	3	3
Psychology 481			3
Electives	9	9	6
	15	15	15

CURRICULUM FOR BACHELOR OF SCIENCE DEGREE WITH A MAJOR IN PSYCHOLOGY

(Without Teacher Certification)

Same as Curriculum for Bachelor of Arts Degree, with the exception of the Foreign Language requirement.

Psychology Courses Recommended for Education Students

Psychology courses included in the "Core Program of Professional Education," and required for teacher certification in the State of Tennessee:

Educational Psychology I, Human Development, 242
Educational Psychology II, Psychology of Learning, 243
Measurement and Evaluation, 312
Guidance for Classroom Teachers, 463

Psychology courses which may be used for education credit, but which are not included in the Core Program of Professional Education, and are not required for certification in Tennessee: (These courses may *not* be substituted for Core Professional courses for certification in Tennessee.)

General Psychology, 221-22
Adolescent Psychology, 263
Mental Hygiene, 323

Sequence of Courses

Undergraduate, Courses

Orientation, 101-02-03
General Psychology, 221-22-23
Educational Psychology I, Human Development, 242
Educational Psychology II, Psychology of Learning, 243
Adolescent Psychology, 263
Elementary Statistics, 311
Measurement and Evaluation, 312
Abnormal Psychology, 321-22
Mental Hygiene, 323
Social Psychology, 341
Machine Scoring of Tests, 400
Experimental Psychology, 411-12-13
Physiological Psychology, 431-32
Senior Project, 450
Differential Psychology, 461
Introduction to Psychological Testing, 462
Guidance for Classroom Teachers, 463
History and Schools of Psychology, 481

101-02-03. *Orientation for Psychology Majors.* (3) General orientation to college and introduction to the area of psychology as a profession. Students given opportunity to make self appraisal of abilities, aptitudes, interests, reading level, and study habits; and to improve reading level and steady habits. One hour credit each quarter. Required of Freshman majors in psychology.

221-22. *General Psychology.* (6 Hrs.) The basic course in general psychology; designed to acquaint the student with the fundamental principles of human behavior and experience, the scope of psychology, and the methods of psychological research. Course is a prerequisite for all "advanced" courses in psychology; is required of all students majoring or minoring in psychology, and is recommended for students in education.

223. *General Psychology.* (3) Prerequisite Psych. 221-22. Required of psychology majors, and open as an elective to non-majors who desire to further explore the content and nature of general psychology. Offers a critical consideration of psychological systems, and methodology, and a review of the fields of psychology.

242. *Educational Psychology I, Human Development.* (3) The first in a sequence of two courses in educational psychology. Designed to give the student an understanding of the child as a growing organism, of how behavior is acquired, and the relationship between growth and learning. Required in the professional Education Core.

243. *Educational Psychology II, Psychology of Learning.* (3) Prerequisite Psych. 242. The second in a sequence of two courses in educational psychology. Designed to introduce the student to learning theory and the implications of learning theory for classroom teaching, and to give the student training in the application of psychological principles to the various functions of the school. Required in the Professional Education Core.

263. *Adolescent Psychology.* (3) Emphasis on the development of and the problems of adolescents in the home, school, and community environment. Attention given to the guidance of adolescents. (Students may not receive credit for both Psych. 242 and Psych. 263.)

311. *Elementary Statistics.* (3) Offers training in tabulating and processing scores and other data; covers measures of central tendency, measures of varibility, the normal curve, and simple correlation.

312. *Measurement and Evaluation in Public Schools.* (3) 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. Prerequisite Psych. 242 and 243. Required in the Professional Education Core.

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.

323. *Mental Hygiene.* (3) 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 the practice of mental hygiene in the classroom.

341. *Social Psychology.* (3) Lectures and discussions of social behavior and application of principles of psychology to social behavior.

401. *Machine Scoring of Tests.* (1) Offers training in scoring tests on an I.B.M. machine. One hour practice per day required. Prerequisite: course in testing, junior classification, and approval of instructor.

411-12-13. *Experimental Psychology.* (9) Offers training in applying the scientific procedure of experimentation to the study of psychological phenomena in the various fields of psychology.

431-32. *Physiological Psychology.* (6) A study of the sensory, motor, and adjustor (brain) mechanisms as they relate to behavior.

450. *Senior Project.* (3) Required of all seniors. Under the supervision of the student's adviser, each senior shall complete a project appropriate to the student's major area. The completed project must be approved by the student's adviser and the head of the department. Three typewritten copies of the project are to be turned in before a grade is awarded. One copy will be returned to the student.

461. *Differential Psychology.* (3) An intensive study of individual differences, with emphasis on discovery, measurement, and interpretation.

462. *Introduction to Psychological Testing.* (3) Designed to give the student an understanding of the basic principles underlying psychological measures; officers training in selection and use of psychological tests, and practice in both group and individual testing.

463. *Guidance for Classroom Teachers.* (3) Designed to train classroom teachers in providing guidance to their pupils. Attention is given to the functions, techniques, and tools of guidance, and to the organization and execution of guidance programs. Required in the Professional Education Core.

481. *History and Schools of Psychology.* (3) Special attention to the historical development of psychology as a science, and to the fundamental concepts of the various schools of psychology.

SCHOOL OF ENGINEERING

NAPOLEON JOHNSON, Dean

Faculty:

Department of Architectural Engineering
Ronald Harris, Leon Q. Jackson, Harry E. Lash, and Walter Vincent.

Department of Civil Engineering
Walter Dabney, Jack Figilis, Macon G. Hinton, Napoleon Johnson, and Robert S. Armstead.

Department of Electrical Engineering
Fred W. Bright, Jack W. Breed, Soon Kwy Cho, Paul Dicker, Andrew Ewing, K. W. Madden, and Carl Manuel.

Department of Mechanical Engineering
Yvonne Y. Clark, Clinton E. Jones, J. A. Morris, James A. Parsons, Jr., and J. W. Reynolds.

Department of Industrial Education
Leon C. Farbes, William V. Harper, Hayes Howard, Harry E. Lash, Gilbert K. Pleasant, Cecil Ryan and Preston E. Stewart.

SCHOOL OF ENGINEERING

NAPOLEON JOHNSON, M.S.E., P.E., *Dean*

GENERAL INFORMATION

The School of Engineering is divided into two articulated components of technical education, namely:

1. A Bachelor of Science Degree program with curricula in Architectural, Civil, Electrical and Mechanical Engineering. Electrical Engineering is offered under two options of power and communications and Mechanical Engineering with a choice of power or metallurgy options.
2. An Industrial Education Program with teacher training curricula in Industrial Arts Education and Aviation Education both of which lead to the Bachelor of Science Degree.

The aim of the School of Engineering is to train students rigorously and thoroughly on a broad basis of a coherently related sequence of subjects in three major fields: physical science and mathematics; social-humanistics; and the respective professional or vocational disciplines. To these ends, the instructional facilities of the School of Arts and Sciences and the School of Education are available to the students of the Engineering School. Out of such programs graduates will possess also the general education for a well-rounded and wholesome life in their communities.

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 twelve weeks each) in length, leading to the Bachelor of Science degree in Architectural Engineering, Civil, Electrical, Mechanical, Metallurgical Engineering and Industrial Education.

The School may revise from time to time any of its curricula in order to conform with technological advancement or for purposes of accreditation. All students must satisfactorily complete the prescribed courses under their curriculum in order to qualify for the Bachelor of Science degree.

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 first-hand 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, model-making laboratories, three drafting rooms; classrooms and reading rooms; and offices.
2. Industrial Arts Building—In this building are located the machine, welding, sheet metal, refrigeration, household appliance vocational technical training shops. The building is fully equipped with lathes, milling machines, sheet metal and welding machines.
3. The Vocational Shop Building—The masonry, printing and auto mechanics areas are located in this building.
4. Mechanical Engineering and Heating Building—This building houses the steam engineering laboratories and contains a packaged Westinghouse Turbine-Electric Generating Unit; and a horizontal steam engine with indicator and prony brake.
5. Cumberland Airport—Equipment consists of testing and flight training facilities including aircraft, link trainer, jet and reciprocating engines.

COURSES IN ENGINEERING

The following core courses in general are offered in all degree programs.

Engineering Orientation

Offered by the Faculty of the individual departments

100. *Engineering.* (Supervised Study) (0) Time analysis and organization, complete a study schedule, instruction in the improvement of study habits, instruction in the taking of reading and lecture notes. Homework assignments done under supervision. Inspection of home assignments done outside of class.

101. *Engineering Problems.* (3) An introduction to the engineering profession. The use of the slide rule for the solution of engineering problems. Instruction in the techniques of the solution and presentation of engineering problems.

Engineering Mechanics

Offered by the Faculty of Department of Civil Engineering

202. *Analytical Mechanics Statics.* (5) 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.

203. *Analytical Mechanics Dynamics.* (5) Instruction in principles of kinetics and Kinematics. Includes the theory of rectlinear, curvilinear and rotary motion, impact stresses, and impulse and momentum. Prerequisites: Eng. 202; Math 263.

311-12-13. *Fluid Mechanics.* (6) Fundamentals of fluid behavior. It deals with the properties of fluids; theory of hydrostatics; basic principles of fluid flow and measurements, study of applied flow in pipes, open channels; and water power machinery. Prerequisite: Engr. 202, 203.

341-2. *Strength of Materials.* (6) 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.

401. *Materials Testing.* (3) Testing properties of wood, metal and refactory products; control of concrete mixtures; instruction in field tests for determining quality of cement; analysis of and fine aggregates. Prerequisites: Eng. 342. One lecture and four laboratory periods.

402. *Engineer-In-Training License Review.* (2) A course designed to prepare students for the EIT examinations, a partial requirement for obtaining license as a professional engineer. The subject matter will be drawn from six subject areas: Mathematics, Engineering Mechanics, Fluid Mechanics, Mechanics of Materials, Electricity and Chemistry.

Engineering Surveying

123. *Elementary Surveying.* (3) An elementary course in surveying, emphasis will be placed on the development of the following proficiencies. A knowledge of the theory of errors: A technical knowledge of the use of surveying instruments in leveling and measuring angles. Measurement of distance by tape and stadia, design, calculation and layout of circular, spiral and vertical curves. Prerequisite Math 162.

Engineering Graphics

Offered by Faculty of Department of Architectural Engineering

112. *Engineering Graphics.* (3) Sections and dimensions practice, pictorial representation, freehand lettering and technical sketching. Required of all engineering and industrial education students. Six laboratory periods.

113. *Engineering Graphics.* (3) Representation of screw threads, fasteners, springs, gears, pipe drawing. Working drawings of machine parts. Freehand lettering and technical sketching. Required of all engineering and industrial education students. Prerequisite: Engineering 112 or equivalent. Six laboratory periods.

211. *Engineering Graphics.* (3) An elementary study of the geometry of the point, line and plane, with theoretical and practical problems. Six laboratory periods. Required of all mechanical, architectural and civil engineering students. Prerequisite: Engineering 113.

212. *Descriptive Geometry.* (3) Curved surfaces, their tangent lines and planes; the intersection of surfaces, developments, shades and shadows, perspective. Required of all civil, mechanical and architectural engineering students. Prerequisite: Engineering 211. Six laboratory periods.

Engineering Metallurgy

Offered by Faculty of Department of Mechanical Engineering (Metallurgy Option)

223. *Fundamentals of Physical Metallurgy.* (3) An introductory course based upon the physics of the metallic state. The internal structure of metals and its influence upon the attendant properties, phase equilibia and transformations in the solid state are emphasized. Prerequisites: Chem. 113, Physics 222.

Engineering Thermodynamics

Offered by Faculty of Department of Mechanical Engineering

301. *Elementary Thermodynamics.* (3) Thorough treatment of the laws of heat; transformation of energy, theoretical limitations; second law, absolute temperature, entropy and available energy; properties of gases, liquids, vapors and vapor mixtures. Prerequisites: Math. 261-2-3.

Engineering Law

Offered by Faculty of Department of Civil Engineering.

463. *Engineering Law.* (3) Emphasis upon negotiable instruments; real property; contracts; riparian rights and condemnation proceedings; writing and interpretation specification. Three lecture periods.

DEPARTMENT OF ARCHITECTURAL ENGINEERING

L. Quincy Jackson, M.S., *Head*

The Department of Architectural Engineering offers a course of study leading toward a professional degree. Courses are designed to develop technical knowledge and insight into architecture in order to meet the highest professional standards. The primary objective is to encourage the student to investigate the fundamental principles of organic order and to develop individually a medium of controlling architectural forms for man's protection and accommodation.

Unusual opportunities are available through close contact with the many other engineering courses and research programs offered by the school. The architectural engineering curriculum integrates these technical resources with social and cultural needs.

The graduate will find many opportunities for employment with private firms, industrial establishments or governmental agencies. With additional years of experience the graduate architectural engineer may engage in private business after meeting registration requirements of the state in which he desires to practice. Minimum quarter hours required for Bachelor of Science degree in Architectural Engineering are 237.

CURRICULUM IN ARCHITECTURAL ENGINEERING

Freshman Year	*Quarter Hours Credit*			*Sophomore Year*	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*	*Name of Course*	*I*	*II*	*III*
Math 161-62-63	5	5	5	Math. 261-62-63.....	5	5	5
English 101-02-03	3	3	3	English 211	3		
Chemistry 111-112-113	4	4	4	Physics 221-22-23	4	4	4
Engineering 112-113 ..		3	3	Engr. 202		5	
Engineering 123			3	Arch. Engr. 201-2-3 ..	4	3	3
Engineering 101	3			Arch. Engr. 213			3
Engineering 100	0			Engr. 211-12	3	3	
History 121-122	3	3		Air Science II	1	1	1
Air Science I	1	1	1	Phy. Ed. 20's to 50's..	1	1	1
Phy. Ed. 11-12-13....	1	1	1				
	20	20	20	Men	21	22	17

Junior Year	Quarter Hours Credit		
Name of Course	I	II	III
Arch. Engr. 301-2-3..	3	3	3
Arch. Engr. 311-12-13	2	2	2
Arch. Engr. 322		4	
Arch. Engr. 332		2	
Arch. Engr. 333			3
Civil Engr. 301-3....	3		3
Civil Engr. 442-443 ..	4	4	
Engr. 341-42	3	3	
Engr. 223			3
Engr. 463			3
Electives		3	3
Arch. Engr. 213	2		
Speech 202	3		
	20	21	20

Senior Year	Quarter Hours Credit		
Name of Course	I	II	III
Arch. Engr. 401-2-3..	4	4	5
Arch. Engr. 411	2		
Arch. Engr. 422		2	
Arch. Engr. 433			4
Arch. Engr. 443			4
Arch. Engr. 450	3		
Arch. Engr. 452		4	
Arch. Engr. 463	.		4
Civil Engr. 431	4		
Civil Engr. 432		3	
Civil Engr. 451-52....	3	3	
Elect. Engr. 301-2....	3	3	
Engr. 401	3		
Elective			3
	22	19	20

COURSES IN ARCHITECTURAL ENGINEERING

201. *Architectural Design II Small Structures.* (4) Introduction to architectural design; expressions of principles, in structural and aesthetic relationship. Prerequisites Engr. 101-2-3. Three three-hour laboratory periods per week.

202. *Architectural Design II Small Structures.* (3) Problems of more complex nature involving principles, materials, space concepts and site relationship. Prerequisites Arch. Engr. 201. Four two-hour laboratory periods per week.

203. *Architectural Design II Intermediate Design.* (3) Design of small structures. Problems emphasizing design and the use of materials in the development of creative activity. Prerequisites: Arch. Engr. 201-202. Three two-hour laboratory periods per week.

213. *Engineering Materials.* (3) Prefabricated building materials, manufacturing processes, characteristics of new and old materials; emphasis on relationships between common use of materials and imagination; techniques directed toward limitations and potentialities. Prerequisites: Arch. Engr. 202. Three two-hour laboratory periods per week.

301-2-3. *Architectural Design III Composition.* (9) The design of architectural problems of a complex nature involving principles of organic order and the use of structural elements site relationship, form and logical concepts. Relation of design concepts to space and the process of architectural composition. Problems in planning with close co-ordination of site, materials, human needs and structural harmony. Prerequisites: Arch. Engr. 203-213. Three-three hour laboratory periods per week.

311-12-13. *History of Architecture.* (6) Materials and forms of Architecture and related arts of the past and of the present, including emphasis on social, religious and political life. Prerequisites: Arch. Engr. 202-213.

322. *Working Drawings.* (4) Development of various techniques in drafting, representating materials and methods. Elementary construction drawing for small buildings and furnishings. Prerequisite: Arch Engr. 301. Four-two hour laboratory periods per week.

332. *Sanitation.* (2) Elements of engineering investigation and reports involving the design and installation of hot and cold water systems for domestic and commercial use. Local and national codes. Selection of fixtures, private water supply and disposal systems. Prerequisites: Arch. Engr. 203, Physics 223. One hour lecture and two two-hour laboratory periods per week.

333. *Architectural Construction.* (3) Methods of building construction and the assembly and use of building materials. Studies on building types old and new. Prerequisite: Arch. Engr. 213.

401. *Architectural Design IV Planning.* (4) A continuation of Architectural Engr. 303, principles applied in a series of more complex problems; each problem presented on a design need covering the whole field of architectural

procedures. Prerequisites: Arch: Engr. 303, 321-22-12. Five-two hour laboratory periods per week.

402. *Architectural Design Planning.* (4) For completion of senior standards of Architectural Engineering this course is continued by course 403. All seniors are given practical problems within the community, having an actual site and having to meet requirements given by the faculty and concerned persons outside the university. Prerequisites: Arch. Engr. 322, 401. Five two-hour laboratory periods per week.

403. *Architectural Design—Advanced Planning.* (5) Continuation of Architectural Design 402. One single problem guided by the faculty; working drawing, specifications and contracts will be presented to the consultants upon presenting final completed problem. Prerequisites: Arch. Engr. 321-22-411. Five-two hour laboratory periods per week.

411. *Estimating and Supervision.* (2) Estimating construction cost for the building trades; methods and procedures in the supervision of building construction. Prerequisites; Arch. Engr. 333.

422. *Specifications.* (2) Writing of architectural specifications and specification documents; duties and responsibilities of the architect from a professional standpoint.

433. *Professional Practice.* (4) Principles on the proper performances of the duties of an architect, ethical, moral and legal responsibilities; requirements for proper types of contracts and the architect's responsibility in the community. Requirement for registration. Prerequisites: Arch. Engr. 303, Civil Engr. 303. One lecture period per week.

443. *Building Equipment.* (4) The selection, use and design of and mechanical equipment for buildings; problems involving cost, maintenance and purchasing of standard and custom design equipment.

452. *Heating and Air-conditioning.* (4) Design and layout of heating and air conditioning systems, (hot water, steam warm air, radiant, electrical and solar), basic principles in determining heat gain and heat losses in structures, selection and use of equipment for year-round conditioning. Prerequisite: Physics 223.

463. *Electrical Applications in Buildings.* (4) Electrical lighting, equipment and circuit design in modern buildings. Prerequisite: Elect. Engr. 301-2.

DEPARTMENT OF CIVIL ENGINEERING

ROBERT S. ARMSTEAD, B.S., *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 industrial and urban life, such as transporation routes, water supply and power developments, sewage, irrigation, bridges, tunnels, airports and other structures. Dealing, as he does, with both the forces of nature and with projects that influence the economic and social conditions of many people, the Civil Engineer must combine fundamental knowledge of science and engineering with experience and judgment, and with personal characteristics of the highest order.

The curriculum in Civil Engineering is arranged so that all students receive training in the basic principles of mathematics and science and in engineering applications such as surveying, engineering geology and structural theory and design.

The curriculum in Civil Engineering leads to the degree of Bachelor of Science in Civil Engineering upon the completion of a minimum of 231 quarter hours.

CURRICULUM IN CIVIL ENGINEERING

Freshman Year	Quarter Hours Credit		
Name of Course	*I*	*II*	*III*
Math. 161-162-163 ...	5	5	5
English 101-102-103 .	3	3	3
Chemistry 111-112-113	4	4	4
Engineering 112-113 ..		3	3
Engineering 123			3
Engineering 101	3		
Engineering 100	0		
History 121-122	3	3	
Air Science I	1	1	1
Phy. Ed. 11-12-13 ...	1	1	1
	20	20	20-60

Sophomore Year	Quarter Hours Credit		
Name of Course	*I*	*II*	*III*
Math. 261-262-263 ...	5	5	5
CE 221	3		
Physics 221-222-223 .	4	4	4
Engineering 202-203 .		5	5
Engineering 211-212 .	3	3	
Air Science II	1	1	1
Phy. Ed. 20's to 50's ..	1	1	1
Speech 202	3		
History 123			3
	20	19	19-58

Junior Year	Quarter Hours Credit		
Name of Course	*I*	*II*	*III*
CE 301-302-303	3	3	3
Engr. 311-312-313 ...	3	3	3
Engineering 341-342 .	3	3	
Economics 211		3	
Engineering 223			3
EE 301-302-303	3	3	3
Math. 462-463	3	3	
Engineering 301	3		
CE 333			3
English 211			3
	18	18	18-54

Senior Year	Quarter Hours Credit		
Name of Course	*I*	*II*	*III*
CE 402		5	
CE 421-422	3	3	
CE 431-432	4	3	
CE 442-443		4	4
CE 451-452-453	3	3	3
CE 450			3
Engineering 463			3
English 212-213	3	3	
Engineering 401	3		
Non-tech Elective	3	3	
Music 131			3
	19	21	19-59

COURSES IN CIVIL ENGINEERING

221. *Advanced Surveying.* 3 hrs. Office computations, traverses and sample triangulations. Coordinate systems, system of public land surveys, field astronomy and determination of true meridian principles of photogrammetry, earthwork computations and analysis. Prerequisite Engineering 123.

301. *Theory of Structures.* (3) 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.

302. *Theory of Structures II.* (3) 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: C. E. 301.

303. *Theory of Structures III.* (3) Application of elastic theory, moment distribution and method of least work in the application of elastic theory in the analysis of statically indeterminate structures. Prerequisite: C. E. 301-2.

CE 333. *Engineering Geology.* (3) Application of the principles of geology to the practice of Civil Engineering. Study of the formation of soils and investigation of the properties of rocks and minerals.

402. *Transportation Engineering.* (5) An introductory course in transportation that emphasizes principles of movement. It embraces principles common to all modes of transportation which when applied in detail determine the utility, cost, operation and design of each mode. Prerequisites: CE 321-333-431.

421. *Waterworks and Sewerage I.* (3) Elements of the processes governing the depletion and replenishment of the water resources of the land areas of the earth. Prerequisites: C. E. 313.

422. *Waterworks and Sewerage II.* (3) Theory and Design of the collection, purification and distribution of public water supplies. Prerequisite: C. E. 421. Three lecture periods and field trip.

431. *Soil Mechanics.* (4)—3 hr. lecture—2 hr. Lab. Principles of soil mechanics involving consolidation theory, shear, bearing capacity, pressure distributing, conpaction and seepage problems. Laboratory tests to determine Atterberg Limits, unconfined compressions, grain size analysis, maximum density, direct shear permeability tests, consolidation tests, triaxial tests.

432. *Foundation Engineering.* (3) 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.

442. *Structural Design I.* (4) Design of steel and timber structures. Prerequisite-Engineering 341-342.

443. *Structural Design—Steel II.* (4) Design of steel roofs and bridge trusses; plate girders and built-up columns and main compression members. Prerequisite: C. E. 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 design and making of a project complete with drawings, pictures, specification and detail data involved in its construction; or, a research and compilation of a subject within the field of the student's interest.

451. *Structural Design—Concrete I.* (3) Design of concrete beams and girder structures; concrete joist of metal pan and terra cotta construction. Two lectures and two laboratory periods.

452. *Structural Design—Concrete II.* (3) Design of flat slab structures; retaining walls; and bridges. Two lectures and two laboratory periods.

453. *Structural Design—Concrete III.* (3) Ultimate Design Theory. Prestress, Design Creep and Shrinkage. Three two-hour laboratory periods.

CURRICULUM DISTRIBUTION

BASIC SCIENCES

Natural Science

Chemistry 111-112-113	12 hrs.
Physics 221-222-223	12 hrs.

Mathematics

College Algebra 161	5 hrs.
Trigonometry 162	5 hrs.
Analytic Geometry 163	5 hrs.
Calculus 261-262-263	15 hrs.
Differential Equations 462-63	6 hrs.
	60 hrs. (26%)

Materials Testing Lab.—Engr. 401	3 hrs.

Basic Core Courses

Engineering Problems—Engr. 101	3 hrs.
Supervised Study—Engr. 100	0 hrs.
Engineering Graphics I—Engr. 112-113	6 hrs.
Elementary Surveying—Engr. 123	3 hrs.
Engineering Graphics II—Engr. 211-212	6 hrs.
Engineering Law—Engr. 463	3 hrs.

ENGINEERING SCIENCES AND CORE COURSES

Analytical Mechanics

Statics—Engineering 202 ..	5 hrs.
Dynamics—Engineering 203 .	5 hrs.
Strength of Materials—Engr. 341-342	6 hrs.
Fluid Mechanics—Engr. 311-312-313	9 hrs.
Thermodynamics—Engr. 301	3 hrs.
Electrical Theory—EE 301-302-303	9 hrs.

Nature and Property of Materials

Fund of Phy. Metallurgy—Engr. 223	3 hrs.

ENGINEERING ANALYSIS DESIGN AND SYSTEMS

Analysis

Theory of Structures CE 301-302-303	9 hrs.
Advanced Surveying—CE 221	3 hrs.
Engineering Geology—CE 333	3 hrs.
Transportation—CE 402	5 hrs.
Waterworks & Sewerage—CE 421-22	6 hrs.
Soil Mechanics—CE 431	3 hrs.
Senior Project—CE 450	3 hrs.
	33 hrs. (14%)

Design

Foundation Engineering	3 hrs.
Structural Design of Steel CE 442-443	8 hrs.
Structural Design of Concrete —CE 451-452-453	9 hrs.
	20 hrs. (9%)

Humanistic—Social

Music Appreciation	3 hrs.
Growth of Civilization History 121-122-123	9 hrs.
World Literature Eng. 211-212-213	9 hrs.
Economic Principles—Eco 211	3 hrs.
Non-tech Electives	6 hrs.
	30 hrs. (13%)

COURSES FROM WHICH THE ELECTIVES MAY BE CHOSEN

General Psychology— Psy 221-222	6 hrs.
Economic Principles— Eco. 212-213	6 hrs.
Man & Materials—Art 133 ..	3 hrs.
Anthropology—Soc. 221	3 hrs.
Urban Sociology—Soc. 461 ..	3 hrs.
American Drama—Speech 343	3 hrs.
Literature of Negro Life English 393	3 hrs.
Intro to Philosophy—Phy 323	3 hrs.

COMMUNICATIONS

English Composition

Freshman Composition English 101-102-103	9 hrs.

Speech

Public Speaking—Speech 202	3 hrs.
	12 hrs. (5%)

Air Science I and II	
AS 151-152-153	3 hrs.
AS 251-252-253	3 hrs.
Physical Education	
Phy. Ed. 11-12-13	3 hrs.
Phy. Ed. 20's to 50's	3 hrs.
	12 hrs. (5%)

DEPARTMENT OF ELECTRICAL ENGINEERING

N. JOHNSON, *Acting Head*

The field of electrical engineering is very broad. It embraces the techniques and devices for the generation, transmission and use of electrical energy to supply light and power in the home, the shop and in industry. It includes the areas of radio, television and radar. It encompasses the new and rapidly developing areas of control, measurement and calculation where electronics has made possible the achievement of hitherto undreamed accuracy.

The graduate in electrical engineering is equipped to take his place as a junior engineer, with either industry or government in one or more of these areas of the profession. Here he will work under close supervision until he has acquired the experience requisite to the assumption of responsibility. His progress in the profession will depend to a large degree upon how well he has mastered his college courses and upon how assiduously he applies himself to his work. He is prepared to study at the graduate level in preparation for a career in research.

The minimum quarter hours required to receive the Bachelor of Science degree in Electrical Engineering are 236.

CURRICULUM IN ELECTRICAL ENGINEERING

Freshman Year *Name of Course*	Quarter Hours Credit *I*	*II*	*III*
Mathematics 161-62-63	5	5	5
English 101-02-03	3	3	3
Chemistry 111-12-13 ..	4	4	4
History 121	3		
Engr. 112-113		3	3
Engr. 123			3
Speech 202		3	
Engineering 101	3		
Air Science I	1	1	1
Phys. Ed. 11-12-13 ...	1	1	1
Men 20	20	20	
Women 19	19	19	

Sophomore Year *Name of Course*	Quarter Hours Credit *I*	*II*	*III*
Mathematics 261-62-63	5	5	5
Physics 221-22-23	4	4	4
English 211	3		
Elect. Engr. 211-12-13	3	3	2
Elect. Engr. 311			3
Engineering 202-3		5	5
Air Science II	1	1	1
Elect. Engr. 233			1
Economics 211	3		
Phys. Ed. 20's to 50's .	1	1	1
Women 19	19	18	21
Women 19	19	19	21

POWER OPTION

Junior Year *Name of Course*	Quarter Hours Credit *I*	*II*	*III*
Engineering 341-42 ..	3	3	
Speech 203			3
Elect. Engr. 363			3
Elect. 321-22	1	1	
Elect. Engr. 383			1
Elect. Engr. 373			3
Elect. Engr. 351-52 ..	3	3	
Engr. 301	3		
Mech. Engr. 302		3	
Mathematics 462-63 ..	3	3	
Engr. 223			3
Engr. 311-12	3	3	
Physics 311-12-13	3	3	3
Non Technical elective			3
	19	19	19

Senior Year *Name of Course*	Quarter Hours Credit *I*	*II*	*III*
Elect. Engr. 411-12-13	3	3	3
Elect. Engr. 414-15-16	1	1	1
Mech. Engr. 411-12-13	3	3	3
Elect. Engr. 450			3
Elect. Engr. 361-62 ..	3	3	
Elect. Engr. 372		1	
Engr. 401	3		
Economics 202		3	
Engr. 463			3
Major electives	6	6	6
	19	20	19

COMMUNICATION OPTION

Junior Year *Name of Course*	Quarter Hours Credit *I*	*II*	*III*
Engineering 342-43 ..	3	3	
Speech 203			3
Elect. Engr. 351-52 ..	3	3	
Elect. Engr. 363			3
Elect. Engr. 373			3
Elect. Engr. 321-22 ..	1	1	
Elect. Engr. 383			1
Engr. 301	3		
Mech. Engr. 302		3	
Engr. 223			3
Mathematics 462-63 ..	3	3	
Physics 311-12-13	3	3	3
Elect. Engr. 361-62 ..	3	3	
Elect. Engr. 372		1	
English 213			3
	19	20	19

Senior Year *Name of Course*	Quarter Hours Credit *I*	*II*	*III*
Elect. Engr. 411-12-13	3	3	3
Elect. Engr. 421-22-23	2	2	2
Elect. Engr. 431-32-33	2	2	2
Elect. Engr. 450			3
Elect. Engr. 451-52-53	3	3	3
Elect. Engr. 461-62-63	1	1	1
E. Engr. 481-82	3	3	
E. Engr. 473			3
Engr. 401	3		
Economics 212		3	
History 122-23		3	3
Engr. 311-12	3		
	20	20	20

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 161-2-3.

233. *Direct Current Machinery Laboratory.* (1) Laboratory experiments paralleling the theory of Electrical Engineering 311, taken concurrently with 311. One laboratory period per week.

301-02-03. *Elements of Electrical Engineering.* (9) Direct and alternating current theory. Direct and alternating current generators and motors, transformer theory, the amplidyne and synchro. For non-majors, Prerequisite, Math 262; Physics 221-22-23. Three lecture periods and one laboratory period.

311. *Direct Current Machinery.* (3) Basic theory of generator and motor action; dynamo magnetization curve; armature windings and armature reaction; voltage characteristics. Direct current generator; generation and control of e,m.f.; performance characteristics of shunt and compound types; parallel operation. Direct current motor; counter e.m.f., speed and torque characteristics; starting, reversing and speed control; performance characteristics of series, shunt and compound types. Starters and controllers, losses and efficiency of generators and motors. Prerequisites: E. E. 211-12-13.

321-22. *Alternating Current Measurements Laboratory.* (2) Laboratory experiments paralleling the theory of 351. One two-hour laboratory period per week.

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-sinsusoidal voltages and currents. Introduction to Heaviside notation. Prerequisite: E. E. 211-12-13; Mathematics 263.

361-62. *Electronics.* (6) A study of electron ballistics, thermal and high field emission with application to cathode ray tubes and vacuum tubes. The Diode, the multi-element vacuum tube and the transistor. Rectifiers and amplifiers. Prerequisites: E. E. 351-52.

363. *Introduction to Electrical Transients.* (3) Direct or alternating current transients in electrical circuits. Spectrum coefficient calculations by means of the fourier integral. Classical and transform solution of problems. Prerequisite: E. E. 352—Math. 462.

372. *Electronics Laboratory.* (1) A laboratory course taken concurrently with EE 362. Experimental determination of the operating characteristics of the diode, the triode, multi-element vacuum tubes and the transistor. One two-hour laboratory period per week.

373. *Electrical Networks.* (3) Kirchoff's laws. Mesh and node analysis. Network Theorems. Symmetrical and Asymmetrical T and pi networks. Bridge circuits.

383. *Electrical Networks Laboratory. (1) Laboratory experiments paralleling* the theory of E. E. 373. One laboratory period per week.

411-12-13. *Alternating Current Machine Theory.* (9) Theory of the transformer, polyphase and single phase motors, synchronous motors, alternators and converters. Prerequisites: E. E. 233, 311, 351-52, 321-22.

461-62-63. *Alternating Current Machine Laboratory.* (3) Laboratory experiments paralleling the theory of E. E. 411-12-13. One two-hour laboratory period each. 461-62-63.

421-22-23. *Communication Engineering.* (6) A study of the principles of communication systems. The Fourier integral. Pole-zero method of circuit-behavior analysis. Resonance, infinite lines and reflection. Filters and equalizers. Impedance transformation and impedance matching by means of stubs. Modulation and demodulation.

431-2-3. *Communication Engineering Laboratory.* (6) Laboratory experiments paralleling the theory of E. E. 421-22-23. One four-hour laboratory per week.

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.

442. *Electrical Power Networks.* (3) Solution of circuits by the methods of symmetrical components. Sequence impedances of power equipment. Determination of fault current in electrical systems.

443. *Power System Stability.* (3) The operation of power systems under abnormal conditions. Switching and lighting disturbances, transient stability, traveling waves and surge impedances.

444. *Electrical Machine Design.* (3) Principles of design of D C Machinery including complete design problems. Prerequisites: E. E. 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: E. E. 411-12. Two lecture periods and one computation period.

446. *Electrical Machine Design.* (3) Principles of design of A C Generators, synchronous converters, including complete design problem. Prerequisites: E. E. 411-12-13. Two one-hour lectures and one computation period.

450. *Senior Project.* (3) A technical paper on a special topic in Electrical Engineering. Prerequisites: Senior Standing.

451-2-3. *Ultrahigh Frequency Engineering.* (9) A general study of the techniques associated with ultrahigh frequency systems. Prerequisites: Math 462-63; E. E. 363.

471-72. *Transistors.* (6) A study of the junction transistor. The following topics are treated: characteristic curves, stabilization of bias, equivalent circuits and small signal amplifiers, feedback, power amplifiers, switching circuits and transient response, video amplifiers. Prerequisite: EE 362.

473. *Fundamentals of Servomechanisms.* (3) A study of elementary control systems. Viscous and error-rate damping. Integral control. Transfer function analysis. Prerequisites: E E 363-472.

DEPARTMENT OF MECHANICAL ENGINEERING

JAMES A. PARSONS, JR., E.E., *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, sales activities of industry. Minimum quarter hours required for Bachelor of Science degree in Mechanical Engineering are 250.

Metallurgical Engineering Option for Mechanical Engineers

Nine hours of physical metallurgy are required of all mechanical engineers. These include Fundamentals of Physical Metallurgy 211, Physical Metallurgy 322 and eMtallography 333. In addition Mechanical engineers may elect twelve hours of mechanical metallurgy including Foundry Theory 313, Foundry Practice 323, Advanced Foundry Theory 451 and Advanced Foundry Practice

461. The option is completed with Application Metallurgy 413 and a senior project in Metallurgy 450. All courses in Mechanical Metallurgy are based upon Metal Processing designed to prepare engineers for the rapidly developing foundry industry. The Foundry Educational Foundation is encouraging engineering students to enter this branch of industry where opportunities for engineers capable of assuming supervisory positions are significant both in quantity and quality.

CURRICULUM IN MECHANICAL ENGINEERING

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Math 161-62-63	5	5	5
English 101-02-03	3	3	3
Chemistry 111-12-13..	4	4	4
Engineering 112-13 ..		3	3
Engineering 123			3
Engineering 101	3		
Engineering 100	0		
History 121-122	3	3	
Air Science 151-52-53	1	1	1
Phy. Ed. 11-12-13	1	1	1
	20	20	20

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 213	3		
Math. 261-62-63	5	5	5
Physics 221-22-23	4	4	4
Engr. 211-12	3	3	
Engr. 202-3		5	5
Mech. Engr. 211-12 ..	3	3	
Air Science II	1	1	1
History 123			3
Phy. Ed. 20's to 50's..	1	1	1
Engr. 223			3
	20	22	22

SUMMER I

Music Appreciation 131
and Non-tech Electives—6 hours

SUMMER II

World Literature—211-212

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Engr. 341-42	3	3	
Engr. 463			3
Engr. 301	3		
Mech. Engr. 302-3....		3	3
Mech. Engr. 311			3
Met. Engr. 321	3		
Engr. 311-12	3	3	
Mech. Engr. 341-42-43	3	3	3
Math. 462-463	3	3	
Tech Electives		3	
Fuels and Lubricants 403			3
Met. Engr. 333			3
Economics 211	3		
	21	18	18

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Elect. Engr. 301-2-3..	3	3	3
Civil Engr. 301	3		
Mech. Engr. 452-53 ..		3	3
Mech. Engr. 411-12-13	3	3	3
Mech. Engr. 401-32-42	3	3	3
Mech. Engr. 450			3
Tech Electives	3	6	3
Engr. 401	3		
	18	18	18

COURSES IN MECHANICAL ENGINEERING

211. *Manufacturing Process-Metal Fabrication.* (3) Pattern Making, pattern design and materials. Fundamental principles underlying manufacturing processes in the area of casting. Classroom discussion and demonstration.

212. *Manufacturing Processes-Metal Fabrication.* (3) Fundamental Principles underlying manufacturing processes in the area of machine tools. Classroom discussion and demonstration.

302. *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: Engr. 301.

* Mechanical Engineering majors may elect any two of the following shop courses: Foundry 101-2, Metal Bench Work 101, Sheet Metal 101-2.

303. *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. Engr. 302.

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. 261-2-3. M. E. 302.

341. *Kinematics.* (3) Analysis of mechanisms. A study of instantaneous centers, velocities, accelerations, and forces in plane mechanisms both analytical and graphical. Prerequisites: Math. 263, Engr. 212 and Engr. 203. One lecture period. Two laboratory 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. Prerequisite: Mech. Eng. 341. One lecture period. Two laboratory periods.

343. *Machine Design.* (3) The design of machine parts including shafting, gears, brakes, clutches, bearings, (sliding and anti-friction), springs, flywheels and frames. Prerequisite: Mech. Eng. 342.

401. *Heat 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. Prerequisite: M. E. 303.

403. *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 and four laboratory periods. Fee $5.00.

411. *Steam Engineering I.* (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: M. E. 311. One lecture and four laboratory periods.

412. *Steam Engineering II—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. Prerequisite ME 411.

413. *Steam Engineering III.* (3) Tests for determining the economy, efficiency, and operating characteristics of steam and gas 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. Prerequisite ME 412.

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 fraction and lubrication. Prerequisite: M. E. 343. One lecture period. 2 Lab. periods.

422. *Machine Design.* (3) The actual design of a simple machine, including making of the necessary calculations, detaila nd assembly drawings. Prerequisite: M. E. 421.

432. *Refrigeration Engineering.* (3) An application of general thermodynamic theory to mechanical refrigeration and its commercial applications, including consideration of refrigerants and their properties, compounds and multiple effect compression and absorption systems, and recent developments. Prerequisite M. E. 401.

442. *Refrigeration Laboratory.* (3) Tests on refrigeration machinery; cooling towers, and air-conditioning equipment. Prerequisite: M. E. 432. Six laboratory periods.

450. *Senior Project.* (3) A written thesis on a project in the student's major field of study.

452. *Internal Combustion Engines.* (3) The study of spark ignition and compression ignition engines; combustion, detonation, carburetion and fuels. Prerequisite: M. E. 303. Three lecture periods.

453. *Internal Combustion Engines Laboratory.* (3) The testing of internal combustion engines; fuels and combustion products; brakes and dynamometers; lubricating oil tests. Prerequisite: M. E. 452. Three laboratory periods.

Note: Students choosing the metallurgy option in Mechanical Engineering may do so by devoting all electives in the junior and senior years to the following Metallurgical Engineering courses: 322, 421, 432, 442 and 443.

COURSES IN METALLURGICAL ENGINEERING

321. *Physical Metallurgy.* (3) Application of equilibrium diagrams to the physical and mechanical properties of metals and alloys and their heat treatment. Recrystallization and grain grown, a quick coordinated practical working understanding of the various types of steel with special application to engineering design is offered. Prerequisite: Met. Engr. 223.

322. *Metal Processing I.* (3) Principles and processes of foundry operations; foundry materials including sands, clays, fluxes and core binders, calcination, thixotropy and the mechanism of bonding. Principles of soil mechanics as applied to molding and core making. Prerequisite: Met. Engr. 321.

333. *Metallography.* (3) Microstructure of alloys, as related to composition, thermal history and mechanical properties. Preparation of specimens. Principles and use of the metallurgical microspoce. Prerequisite: Met. Eng. 322. Two lectures and two laboratory periods.

421. *Metal Processing Lab. I.* (3) Testing of bonding material for foundry and core sands. Control of foundry sand mixtures. Melting, refining and alloying of aluminum and copper bearing alloys. Prerequisite: Met. Engr. 322. One lecture and four laboratory periods.

432. *Metal Processing II.* (3) Basic principles of solidification. The physics of gating and risering. Gases in liquid and solid metal, theory of hot tearing. Prerequisite: Met. Engr. 322.

442. *Metal Processing Lab. II.* (3) Electric melting practice. Induction furnace melting of low carbon stainless and tool steel, arc furnace melting and refining of carbon and alloy steels. Oxygen lance practice as applied to the production of low carbon stainless steel in the electric arc furnace. Prerequisite: Met. Engr. 432. One lecture and four laboratory periods. Laboratory fee $5.00. (Formerly F. E. 461).

443. *Application Metallurgy.* (3) Selecting of Engineering alloys as a result of their ease of fabrication, resistance to high strength and toughness, wear and abrasion and other special physical and mechanical properties, alloy design, quality control and service behavior. Prerequisite: Met. Engr. 333.

450. *Senior Project.* (0) A written thesis on a project for Metallurgical Option majors. (formerly F. E. 450).

DEPARTMENT OF INDUSTRIAL EDUCATION

HAYES HOWARD, M.S., *Head*

The Department of Industrial Education is designed to prepare young men and women for gainful occupation in Industrial Arts Education, Vocational-Industrial Education, and Aviation Education.

The department offers undergraduate courses which lead to the Bachelor of Science degree in Industrial Education.

As advances are made in industry, the department of Industrial Education will alter its curricula to meet industrial demands for an adequate program of Industrial Education instruction.

CURRICULUM IN INDUSTRIAL ARTS EDUCATION

The Industrial Arts Education Curriculum is designed to offer experiences which will prepare young men and women as teachers of Industrial Arts Education in elementary, junior high, and senior high schools; to prepare supervisors and coordinators of Industrial Arts programs; and, to provide experiences for all students who wish to develop an appreciation for and an understanding of the technological society in which they live.

Successful completion of this curriculum leads to the degree of Bachelor of Science and qualifies one to obtain a state teaching certificate in Industrial Arts.

The following requirements must be met by all majors in order to qualify for teacher certification in Industrial Arts:

1. The completion of a minimum 95 Quarter hours credit in the Industrial Arts area including:
   a. 18 Quarter hours in Graphic Arts: Ind. Arts Drawing 111-112-113, General Printing 101-102-103.
   b. 3 Quarter hours of General Shop 301.
   c. 9 Quarter hours of Woodworking (Carpentry 101-102-103 or Woodworking 111-112-113.)
   d. 9 Quarter hours Electricity (301-302-303-401 or Electronics 101-102-103.)
   e. 9 Quarter hours General Metals (Sheet Metal 101-102-103 or Machine Shop 101-102-103.)
   f. A choice of 9 Quarter hours 101-102-103 shop series in Metals, Radio, Masonry, Aero Mechanics.
   g. 3 Quarter hours of *Power* and *Transportation.*
   h. 6 Quarter hours of Art Appreciation and Design (Art 133-Industrial Arts 401.)
   i. 3 Quarter hours General Crafts (351).

CURRICULUM IN INDUSTRIAL ARTS EDUCATION

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 101-2-3	3	3	3
Ind. Arts Draw 111-2-3	3	3	3
Math. 111, 112, 113..	3	3	3
Health 151			3
Ind. Arts in Modern Ed. 121	2		
Hist. of Ind. Art 122..		2	
Air Science 151-2-3	1	1	1
Phil, of Ind. Arts 123..			2
Phy. Ed. 11-12-13	1	1	1
Art 133		3	
Gen. Woods 111-12-13	3	3	3
Men	16	19	19
Women	15	18	18

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 211-12-13	3	3	3
Gen'l Print. 101-2-3..	3	3	3
Soc. Stud. 111-12-13..	3	3	3
Air Science 251-2-3...	1	1	1
Natural Science 121-22-23	4	4	4
Phy. Ed. 20's-50's	1	1	1
Education 201	3		
Psychology 242-3		3	3
Men	18	18	18
Women	17	17	17

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Ed. 301-387	3		3
Psy. 312		3	
Gen'l Elec. 301-2-3...	3	3	3
Gen'l Shop 301	3		
Soc. Stud. 114			3
Foreign Lang. 100 Level	3	3	3
Ind. Ed. 331-2		3	3
Health 212	3		
Gen. Metals 101-2-3..	3	3	3
Ind. Ed. 371		3	
	18	18	18

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Ed. 462	3		
Psy. 463	3		
Ind. Ed. 450	3		
Ind. Ed. 472-3		12	3
Gen'l Crafts 351	3		
Power & Transportation 354			3
Ind. Arts Design 401..			3
*Electives 300 & 400 Levels	3		6
Educ. 471		3	
Phil. 323	3		
	18	15	15

* Electives may be taken in courses listed below: Education 341; Sociology 221, Special Ed. 469-465; Ind. Ed. 410; General Crafts 353; Aero Mechanics.

COURSES IN INDUSTRIAL ARTS

121. *Industrial Arts in Modern Education.* (2) History and development of Industrial Arts in general education.

122. *History of Industrial Arts.* (2) History of the development of Industrial Art from its beginning to modern times.

123. *Philosophy of Industrial Arts Education.* (2) The philosophy of industrial arts in modern education.

301. *General Shop.* (3) For Industrial Arts students only. General concepts, organization, and administration of the general shop. Instruction is offered in woods, metals, ceramics, plastics, leather, general electricity, household mechanics.

351. *General Crafts.* (3) The application of the fundamental principles of design and construction of all types of crafts projects dealing with woods, metals, plastics, leather and ceramics.

352-353. *General Crafts.* (6) Continuation of general craft 351. Deals with the processes, principles, and techniques of construction in the use of metals, woods, leather, plastics and ceramics.

354. *Power and Transportation.* (3) History of power and transportation. Horse drawn vehicles. Internal combustion, engines, Marine Transportation, Aeronautics.

355-356. *Power and Transportation.* (6) Continuation of Power and Transportation 354. Using skillfully common hand tools and machine tools that are used in motor mechanics. Design and construction of Marine and Aircraft models. Assist in maintenance of various types of machines and engines.

473. *Seminar.* (3) A seminar for students who have completed their student teaching. Appraisal and evaluation of individual problems encountered in student-teaching. Furthering the knowledge and/or skills needed on an individual basis.

401. *Industrial Arts Design.* (3) The application of the fundamental principles of design and construction to all types of school shop projects. Working drawings are made of projects. Six combined lecture and laboratory periods.

COURSES IN INDUSTRIAL EDUCATION

201-2-3. *Basic Experience in Trade and Industrial Education.* (9) Effective methods of teaching and the use of specialized instructional aids and devices.

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.

321-2-3. *Part-time Program 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.

332. *Instructional Aids.* (3) This course is designed to motivate and teach industrial education students to use, design and construct teaching aids for industrial classrooms and shops. Students are actually required to construct three-dimensional teaching aids.

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 projects, 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.

371. *Methods of Teaching Industrial Education.* (3) Lesson planning, techniques of the demonstration, plans for related instruction; and methods of testing are studied.

400. *Driver Education and Traffic Safety.* (3) Set up to teach the beginning driver to drive according to standards of the American Automobile Association. Six lecture and laboratory periods.

410. *Teaching, Methods in Driver Education and Traffic Safety.* (3) Designed to prepare teachers, administrators and supervisors of driver education. It involves practice in both class-room and behind-the-wheel phases of the program. Prerequisite: 400. Six lecture and laboratory 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 foreman conferences by means of foremen's clubs, plant educational programs.

412-3. *Job Analysis.* (6) 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.

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: 412.

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, earning, wage scales and similar items may also be carried out.

450. *Senior Project.* (3) Each senior is required to select and execute a project under the supervision of his major advisor. It may involve the designing and making of a project complete with drawing, pictures, specifications and detail date involved in its construction; or a research and compilation of a subject within the field of the student's interest.

472. *Directed Teaching.* (9) This course provides an opportunity for each prospective industrial education teacher enrolled at this institution to engage in the actual observation and teaching of industrial education classes in the secondary schools in this state.

VOCATIONAL-INDUSTRIAL EDUCATION

(Building Construction)

The curriculum in building construction meets the needs of students who wish to acquire principles of light frame and small commercial building construction. Related work is given in planning, estimating, and the necessary related technical information concerning materials and processes of related trades. This curriculum gives basic information in management and business operation which enables students to obtain positions as construction supervisors and contractors after they have had a reasonable amount of practical experience. This curriculum also has a cooperative program which gives students practical experiences in actual building construction.

The curriculum in Vocational-Industrial Education, Building Construction, is designed for two purposes: (1) to train young men and adults to make a living by acquiring necessary skills and techniques for employment in industry; and, (2) to offer experiences which will provide Trade and Industrial teachers for the State of Tennessee after two years of journeyman experience.

Freshman Year	Quarter Hours Credit		
Name of Course	I	II	III
English 101, 2-3	3	3	3
Math. 111, 112, 113..	3	3	3
Health 151	3		
Construction Draw 111-12-13 ..	3	3	3
Carpentry 101-2-3	3	3	3
Physical Ed. 11-12-13	1	1	1
Air Science 151-52-53	1	1	1
Typing 211		3	
Men 17	17	14	
Women 16	16	13	

Sophomore Year	Quarter Hours Credit		
Name of Course	I	II	III
English 211-12-13	3	3	3
Construction Draw 221-22-23 ...	3	3	3
Concrete and Masonry Construction 202-3-4	3	3	3
Social Studies 111-12-13	3	3	3
Physics 211-12-13	4	4	4
Air Science 251-52-53	1	1	1
Physical Ed. 20's-50's..	1	1	1
Men 18	18	18	
Women 17	17	17	

Junior Year	Quarter Hours Credit		
Name of Course	I	II	III
Education 201	3		
Psychology 242-43, 312	3	3	3
*Advanced Carpentry 401	3		
Machine Equipment of Building 312		3	
Electricity 301-2-3 ...	3	3	3
Shop Org. and Management 331 ..			3
Job Analysis 312	3		
Material and Methods for Shop Related Subjs, Teachers		3	
Health 212			3
Accounting 211-2		3	3
	15	15	15

Senior Year	Quarter Hours Credit		
Name of Course	I	II	III
Elem, Accounting 213	3		
Business Law 323-24-25	3	3	3
Painting and Finishing 402	3		
Estimating 424	3		
Foremanship Training by Conference Meth. 411		3	
Curriculum Bldg. in Trade and Ind. Subjects 431-2		3	3
Prob. of Trade and Ind. Teachers 435-6-7	3	3	3
Electives		3	3
	15	15	12

COURSES IN VOCATIONAL-INDUSTRIAL EDUCATION

Building Construction

Drawing

111. *Drawing.* (3) Instruction in the use of drafting tools, sketching in industrial design; orthographic, isometric, oblique and cabinet drawing as applied to industrial products.

112. *Drawing.* (3) Methods and systems of construction; their application in the design and erection of residences, and commercial structures; architectural detailing.

113. *Drawing.* (3) Continuation of 102.

221. *Construction Drawing.* (3) Study of modern house and small commercial buildings. Construction methods, application and use of present-day building materials through analysis and drawing; free hand drawing, details of carpentry and masonry construction, structural designing.

222. *Construction Drawing.* (3) Continuation of Construction Drawing 221.

223. *Construction Drawing.* (3) Specification and Estimating; Reading and interpreting blueprints; making complete sets of drawings; writing specifications and figuring costs.

* Summer internship to be arranged—course 472. It is taken during the summer of the Junior year for 12 credit hours.
A major will complete 207 hours for the Bachelor of Science degree in Building Construction.

Concrete and Masonry Construction

212. *Masonry Construction.* (3) The course deals with the use and care of tools; common materials and methods used in bricklaying; mortar making and spreading; laying straight walls using standard bonds; concrete footings, walls, piers, plain and reinforced mortars; laying out foundations; and excavating.

213. *Masonry Construction.* (3) Practice is given in building walls using various structural bonds; running veneer wall against block and frame backings; building construction work to include openings, arches, windows, doors, flues and vents.

214. *Masonry Construction.* (3) Practice is given in advanced brick and concrete work; laying fire brick; fireplace work; stone cutting and setting tile.

401. *Advanced Brick Construction.* (6) The study of construction of chimneys, mantels, special wall designs, arches and bonds. Prerequisite: 101. Twelve lecture and laboratory periods.

402. *Fundamentals of Plastering.* (6) The study of common materials; care and use of tools. Mixtures and application. Prerequisite: 101. Twelve lecture and laboratory periods.

403. *Fundamental Concrete Work, Cement Finishing.* (6) The study of materials, care and use of tools. Application of concrete mixtures, form building. Construction of foundation walls, walks and floors. Prerequisite: 101. Twelve lecture and laboratory periods.

Estimating

312. *Mechanical Equipment of Building.* (3) Fundamentals of plumbing and heating; installation of controls on gas, water, and steam systems; layout for plumbing, heating and ventilation; fixtures.

424. *Estimating.* (3) Practical examples in estimating costs of buildings; labor; and materials.

Painting and Finishing

402. *Painting and Finishing.* (3) Blending and matching colors, colors and pigments; and house painting and furniture refinishing.

Industrial Internship

472. *Industrial Internship.* (12) A cooperative venture between the University and industrial enterprises which provides actual on-the-job experiences for majors in the department. All students are required to take Industrial Internship at the end of the junior year. The head of the department of Industrial Education will approve all internships before students are permitted to enroll. Internship may be conducted in a commercial establishment or at Tennessee A. and I. State University. Efforts will be made to arrange with contracting agencies who cooperate in the industrial internship program to assist in financing subsistence needs of students. However, a student enrolled in Vocational-Industrial Education should arrange to finance himself during his internship.

TEACHER EDUCATION CURRICULUM IN AERONAUTICS

The curriculum in Aeronautics is designed to meet the requirements of the Tennessee State Department of Education for certification as a public school teacher of Aeronautics, grades 7 thru 12. It covers material in Civil air regulations, Navigation, Meteorology, Theory of flight and engines, Aircraft familiarization, Social, geographic and economic implications of aviation and flight training.

AERONAUTICS CURRICULUM

Freshman Year	Quarter Hours Credit		
Name of Course	I	II	III
English 101-2-3	3	3	3
Engr. Drawing 111-12-13	3	3	3
Aero Mechanics 101-2-3	3	3	3
Math. 111, 112, 113	3	3	3
I. A. 121-2-3	2	2	2
Air Science 151-2-3	1	1	1
Aeronautics 111	3		
Health 151		3	
Art 133			3
Phys. Educ. 11-12-13	1	1	1
Men	19	19	19
Women	18	18	18

Sophomore Year	Quarter Credit Hours		
Name of Course	I	II	III
English 211-12-13	3	3	3
Aero Mechanics 201-2-3	3	3	3
Sci. Ed. 121-2-3	4	4	4
Social Studies 111-12-13	3	3	3
Air Science 251-2-3	1	1	1
Aero. 202-3		3	3
Phy. Educ. 20's to 50's	1	1	1
Educ. 201	3		
Psy. 242		3	
Men	18	21	18
Women	17	20	17

Junior Year	Quarter Hours Credit		
Name of Course	I	II	III
Social Studies 114	3		
Psychology 243-312	3	3	
Education 301-387		3	3
Health 212			3
Shop Electives	6	6	6
Aeronautics 321-22-23	3	3	3
Aeronautics 311-12	3	3	
Aeronautics 412			3
	18	18	18

Senior Year	Quarter Credit Hours		
Name of Course	I	II	III
Psychology 463			3
Education 462			3
Shop Electives	3		3
Electives Restricted to 300 and 400 level Courses	6		6
Aeronautics 371 450-403	6	6	3
Aeronautics 472		12	
Education 471		3	
Philosophy 323	3		
	18	15	18

TECHNICAL AERONAUTICS CURRICULUM

The Curriculum in Technical Aeronautics meets the needs of students desiring to acquire the basic skills pertaining to flight training, aircraft and power plant maintenance and related shop experiences.

TECHNICAL AERONAUTICS CURRICULUM

Freshman Year	Quarter Hours Credit		
Name of Course	I	II	III
English 101-2-3	3	3	3
Engr. Drawing 111-12-13	3	3	3
Aero 101-2-3	3	3	3
Math 111-12-13	3	3	3
I.A. 121-2-3	2	2	2
Air Science 151-2-3	1	1	1
Aeronautics 111	3		
Health 151		3	
Art 133			3
P.E. 11, 12, 13	1	1	1
	19	19	19

Sophomore Year	Quarter Hours Credit		
Name of Course	I	II	III
English 211-12-13	3	3	3
Aero 201-2-3	3	3	3
Sci. Ed. 121-2-3	4	4	4
Soc. Stud. 111-12-13	3	3	3
Air Sci. 251-2-3	1	1	1
Aeronautics 202-203		3	3
P.E. 20's throu 50's	1	1	1
Econ. 211-2	3	3	
	18	21	18

Junior Year	Quarter Hours Credit		
Name of Course	I	II	III
Aero 301-2-3	3	3	3
Aeron 321, 22-23	3	3	3
Aeron 311, 312, 412	3	3	3
M.E. 211-212	3	3	
BA 329-330-335	3	3	3
Shop Electives	3	3	6
	18	18	18

Senior Year	Quarter Hours Credit		
Name of Course	I	II	III
Aero 401-2-3	3	3	3
Aeron. 401, 402, 403	3	3	3
Engineering Law 463			3
M.E. 403			3
Aeron. 450			3
E.E. 471	3		
Electives	6	9	
	15	15	15

COURSES IN AERONAUTICS

111. *Model Building.* (3) A course specifically designed for prospective teachers of aviation education. It deals with the structure and design for various model assembly. Six laboratory hours.

202. *Aircraft Familiarization.* (3) Designed to acquaint the student with the operation, parts and assembly and routine inspection of light aircraft.

203. *Implications of Aviation.* (3) Deals with the social, geographic, economic and political implications of the air age.

311. *Communications.* (3) The development of methods of communication, radio navigation, morse code, etc.

312. *Civil Air Regulations.* (3) Federal, State and local safety regulations with its application to aviation.

321. *Theory of Flight and Engines.* (3) The laws of nature as applied to aviation, also the principles, familiarization and operations of the internal combustion and jet engines.

322. *Aerial Navigation.* (3) The principles involved in scientifically going from one place to another by means of air travel. Practical experience is offered in this course.

323. *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.

371. *Materials and Methods for Aeronautics.* (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 teaching units.

401. *Link Trainer Operation.* (3) The principles involved in the Link Trainer, its operation and maintenance.

402. *Advanced Flight.* (3) Supervised solo with dual flight instruction and experience. One lecture and two laboratory periods.

403. *Meterology.* (3) General effects of weather phenomena. Special study of its relation to aviation.

412. *Aerodynamics.* (3) A general course dealing with the properties of air flow, air foil characteristics, wing theory, parasite drag, introduction of stability and control, and wind tunnel experiments.

413. *Aeronautics Workshops.* (3) Designed primarily for in-service teachers whose objectives are to enrich their curriculum by weaving air age materials into their specific subject area. Development of classroom procedures.

450. *Senior Project.* (3) Each senior is required to select and execute a project under the supervision of his major advisor. It may include the development of a complete course outline or research and compilation of a subject within the field of a student's interest.

472. *Directed Practice Teaching in Aeronautics.* (6) Observation of aeronautics classes of all types. Preparation of lesson plans and directed teaching in at least three classes. Prerequisite: All required subjects in junior year of aeronautics curriculum. Open only to majors in Aeronautics.

COURSES IN AERO MECHANICS

101. *Aircraft Basic Science.* (3) Covers those subjects which are generally regarded as essential for both aircraft mechanics and aircraft engine mechanics.

This includes foundation in: theory of flight, airfoil design, blue print reading, aircraft materials and standards, internal combustion engine principles; and fundamentals of aircraft electrical and ignition systems. Six lecture and laboratory periods.

102. *Elementary Engines.* (3) Chemistry of combustion. Two and four stroke cycle engine design. Basic engine parts including their mechanical functions and requirements. Carburetion and fuel induction system design, magneto and ignition system design and operation; and engine firing orders and ignition timing. Heat transfer, cooling and lubrication. Six lecture and laboratory periods.

103. *Elementary Aircraft.* (3) Aircraft structural designs and requirements. Welded steel tube, aluminum alloy and wood fuselage and wing structures; dope and fabric covering. Aircraft system design and requirements. Fuel, oil, and hydraulic system control mechanism design. Fabrication procedures for metal and composite structures. Six lecture and laboratory periods.

201. *Advanced Engines.* (3) Disassembling, cleaning and visual inspection procedure. Maintenance and inspection requirements of ignition and fuel induction systems. Maintenance technique for valve and actuating mechanism. Inspection, installation and tracking of fixed pitch wood propellers. Power calculations. Engine run-up operation and preflight checks. Prerequisites: 101-2. Six lecture and laboratory periods.

202. *Advanced Aircraft.* (3) Classification of repairs and alterations. Practical application of aircraft welding. Repair methods for tubular steel, fabricated sheet metal and wood structures. Requirements of aircraft dopes, protective coatings and refinishing materials. Spral painting. Fabrication of transparent plastic materials. Prerequisites: 101 and 103. Six lecture and laboratory periods.

203. *Engine Overhaul.* (3) Engine removal and handling safety precautions. Dimensional inspection of engine parts, magnetic particle inspection of steel parts, fluorescent penetrant and x-ray inspection of non-ferrous metal parts. Cylinder and crankcase assembly overhaul; accessory section overhaul. Sub-assembly, final assembly and final inspection. Installation of engine in aircraft, starting procedures; run-up and preflight check. Prerequisite: 201. Six lecture and laboratory periods.

301. *Airframe overhaul.* (3) Aircraft disassembly, repairs, alternations, recovering and refinishing. Aircraft system inspection, repair, and modification. Civil Air Regulations concerning aircraft repair, alteration and modification. Compliance of airworthiness directives. Making and reading drawings of repairs, alterations and modifications. Finding center of gravity location by weighing aircraft and by comparation methods. Inspection and overhaul of aircraft electrical systems, control surfaces, and control mechanisms, methods of splicing control cables, wood spars, and cap strips. Airplane assembly and final inspection for flight test. Prerequisite: 202. Six lecture and laboratory periods.

302. *Aircraft Engine Accessory Overhaul.* (3) Inspection and overhaul of float type carburetors, magnetos, battery ignition distributors. Starting motors, generators, voltage-current regulators, vacuum pumps and fuel, oil, and hydraulic pumps. Service adjustment requirements of pressure injection type carburetors. Servicing lead acid type aircraft batteries and auxiliary power units. Operation of machine tools and test equipment required in the overhauling of aircraft engine accessories. Installation and final inspection of accessories. Civil Air Regulations concerning accessory airworthiness. Prerequisite: 101. Six lecture and laboratory periods.

303. *Propeller Fundamentals and Thrust Conversion.* (3) Inspection servicing and making minor repairs of fixed pitch metal propellers, two position propellers, McCauley controllable and constant speed propellers, Hartzelle and Beech controllable pitch propellers, Aero products Aeromatic propellers, Hamilton standard hydromatic propellers and Curtis electric propellers. Civil Air Regulations concerning repairs and overhaul of aircraft propellers. Overhaul and maintenance of propellers governors and control devices. Principles of Jet Propulsion and Gas Turbine Engines. Prerequisite 101-2. Six lecture and laboratory periods.

401. *Airframe Maintenance.* (3) Repair and maintenance of fabric covered composite, tubular steel and sheet metal structures. Servicing and replacement of tires, wheels and brakes. Repairs and adjustments of aircraft electrical system and control units. Maintenance of landing gear mechanism, hydraulic system and essential units. Trouble shooting on live aircraft malfunction conditions. Repair and maintenance of control columns and control mechanism. Conducting 100-hour inspections and complying airworthiness directives. Civil Air Regulations concerning airframe repairs. Prerequisite: 301. Six lecture and laboratory periods.

402. *Power Plant Maintenance.* (3) General engine maintenance, malfunction problems on live engines. Repair and maintenance of carburetors, ignition systems, spark plugs, magnetos and battery ignition distributors, valve and valve operating mechanisms, cylinder assemblies, baffles; cowling and cooling systems. Engine mount structure and dynamic suspension maintenance and repairs. Adjusting fuel, oil and vacuum pressure regulators. Oil pump and lubrication system repairs. Field servicing aircraft propellers. Prerequisite: 203. Six lecture and laboratory periods.

403. *Airport Operations.* (3) Airplane servicing and handling, fuel and lubricant requirements, routine maintenance airframe, routine maintenance power plants, pre-flight inspections and line checks, emergency repairs, C.A.R. pertaining to emergency maintenance, propeller installation and inspection. Safety devices and safety requirements, assembly and riggin, Placcard and marking requirements. Angular measurements, weighing aircraft and center of gravity computation. Six lecture and laboratory periods. Prerequisite: Aero Mechanics 101-102-103.

COURSES IN ELECTRICITY

301. *Elements of Electricity.* (3) The elementary principles of direct and alternating current generation, distribution and utilization in light, power and communication. Practice in house wiring, calculating and determining the size of service and circuits; wiring symbols, installation of electrical equipment and devices.

302. *Residential Wiring.* (3) Practice in house wiring; calculating and determining the size of service and circuits; wiring symbols; methods and procedures of wiring; installation of electrical equipment and devices. Prerequisite: 101. Six lecture and laboratory periods.

303. *Residential Wiring.* (3) This course is a continuation of 302. Six lecture and laboratory periods.

401. *Generator and Motor Rewinding and Repairing.* (3) Practice in trouble-shooting, repairing and rewinding and alternating current machinery. Prerequisites: 101. Six lectures and laboratory periods.

402. *Industrial Wiring.* (3) Designing and installing wiring systems for small industrial and commercial buildings.

403. *Lighting, Estimating, National Electrical Code.* (6) Elementary lighting theory, fixture selection and maintenance, theory and operation of fluorescent lights. Estimating materials. Rules and regulations as prescribed by the current National Electric Code. Prerequisite: 102. Twelve lecture and laboratory periods.

INDUSTRIAL EDUCATION CURRICULUM IN PRINTING

Freshman Year *Name of Course*	*Quarter Hours Credit* *I*	*II*	*III*
English 101-102-103 ..	3	3	3
Math. 111-112-113 ...	3	3	3
Health 151	3		
Industrial Arts Drawing 101, 102, 103	3	3	3
Printing 101, 102, 103	3	3	3
Physical Ed. 11, 12, 12	1	1	1
Air Science 151, 152, 153	1	1	1
Art 133			3
Industrial Ed. 122 ...		2	
	17	16	17

Sophomore Year *Name of Course*	*Quarter Hours Credit* *I*	*II*	*III*
Natural Sci. 121, 122, 123	4	4	4
English 211, 212, 213	3	3	3
Printing 201, 202, 203	3	3	3
Social Studies 111, 112, 113	3	3	3
Air Science 251, 252, 253	1	1	1
Phy. Ed. 20's, 50's	1	1	1
Economics 301, 302, 303	3	3	3
	18	18	18

Junior Year *Name of Course*	*Quarter Hours Credit* *I*	*II*	*III*
Education 201	3		
Psychology 242, 243 ..	3	3	
Printing 301, 302, 303	3	3	3
Electricity 301, 302, 303	3	3	3
Shop. Org. & Manage. 331			3
Job Analysis 412		3	
Foremanship Training 411			3
English 301, 302, 303	3	3	3
	15	15	15

Senior Year *Name of Course*	*Quarter Hours Credit* *I*	*II*	*III*
Elem. Acct. 211, 212, 213	3	3	3
Business Law 323, 324, 325	3	3	3
Prob. of Trade & Ind. Teachers 435, 436, 437	3	3	3
Curr. Bldg. in Trade Ind. Subjects 431, 432		3	3
Senior Project 450	3		
Printing 401, 402, 403	6	6	6
	18	18	18

TEACHER EDUCATION CURRICULUM IN PRINTING

Freshman Year *Name of Course*	*Quarter Hours Credit* *I*	*II*	*III*
English 101, 102, 103 .	3	3	3
Ind. Art Drawing 111, 112, 113	3	3	3
Math. 111, 112, 113 ..	3	3	3
Health 151 S.S. 111 ..	3		3
Ind. Art in Modern Ed. 121	2		
Hist. of Ind. Ed. 122		2	
Air Science 151-152-153	1	1	1
Philosophy of Ind. Arts 123			2
Phy. Ed. 11, 12, 13 ...	1	1	1
Art 133		3	
General Printing 101, 102, 103	3	3	3
	19	19	19

Sophomore Year *Name of Course*	*Quarter Hours Credit* *I*	*II*	*III*
General Shop 101, 102, 103	3	3	3
Printing 201, 202, 203	3	3	3
Natural Sci. 121, 122, 123	4	4	4
Phy. Ed. 20's, 50's ..	1	1	1
General Metals 101, 102, 103	3	3	3
Air Science 251, 252, 253	1	1	1
Psychology 242, 243 ..		3	3
Education 201	3		
	18	18	18

Junior Year *Name of Course*	*Quarter Hours Credit* *I*	*II*	*III*
Education 301, Ind. Ed. 371		3	3
Psychology 312	3		
Social Studies 112, 113, 114	3	3	3
English 211, 212, 213 .	3	3	3
Ind. Ed. 331, 332	3	3	3
Printing 301, 302, 303 .	3	3	3
Phil. 323			3
Foreign Language 100 level	3	3	3
	18	15	18

Senior Year *Name of Course*	*Quarter Hours Credit* *I*	*II*	*III*
Education 387, 462 ...	3		3
Psychology 463	3		
General Electricity 301, 302, 303	3	3	3
Printing 401, 402, 403.	6		3
Industrial Ed. 472, 473		12	3
Ind. Ed. 460 Educ. 471	3	3	
Ind. Arts Design 401 ..			3
General Electricity 401			3
	18	18	18

Total hours 216—Total hours in Printing 36—Total clock hours 864.

COURSES IN MACHINE SHOP

101. *Fundamentals of Machine Shop.* (3) Fundamentals of shop mathematics, tool identification, proper methods and uses, tool classification, rules and scales. Six lecture and laboratory periods.

102. *Lathe Turning.* (3) Tree lathe nomenclature, chucking micrometer reading, simple turning, roughing, polishing. Lathe set up gigs and fixtures. Six lecture and laboratory periods.

103. *Lathe Gearing.* (3) Lathe maintenance, collets, turning between centers, shoulder turning, taper turning, threading, kirling and lathe drilling. Six lecture and laboratory periods.

COURSES IN PRINTING

101. *Introductory Printing.* (3) Designed to acquaint the beginning student with the history of printing, type classification, hand composition, proofing and proof-reading, make-up, imposition and lock-up of simple job forms. Six lecture and laboratory periods.

102. *Platen Presswork.* (3) Skills are developed in the care and maintenance, register, make-ready and feeding of the platen presses. Prerequisite: 101. Six lecture and laboratory periods.

103. *Make-up and Imposition.* (3) Emphasis on the development of skills in the make-up, and imposition of book forms, newspapers, pamphlets, brochures and broadsides. Six lecture and laboratory periods. Prerequisite: 101.

201. *Linotype Keyboard Operation.* (3) Emphasis on correct keyboard fingering and everyday maintenance of the machine. Prerequisite: 101. Six lecture and laboratory periods.

202. *Cylinder Presswork.* (3) Care, maintenance, make-ready, and operational skills developed. Prerequisite: 101. Six lecture and laboratory periods.

203. *Bindery Operation.* (3) Standard sizes, weights and proper uses of cover, card, book and bond papers are studied: the development of skills in the operation of the power paper cutter, folding machines, stitcher and perforator.

300. *Summer Internship.* To be taken during the first or second summer term after completion of the student's junior year. It is taken in industrial plants as a cooperative venture between the printing plants. It is required of all majors in the vocational printing curriculum (without teacher certification). Efforts will be made to arrange with contracting agencies who cooperate in the industrial internship program to assist in financing subsistence needs of students. However a student enrolled in the vocational-industrial printing curriculum must bear his own financial responsibility.

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* The production courses Printing 401, 402, 403 are offered as purely laboratory courses and are designed to round out the pupil's training in printing and to give him actual industrial experience.

A major will complete a minimum of 209 credit hours for the Bachelor of Science degree.

301. *Advanced Linotype Keyboard Operation.* (3) Further development of manipulative skills on the linotype keyboard and performance of second echelon maintenance, Prerequisite: 101, 201. Six lecture and laboratory periods.

302. *Advanced Cylinder Presswork.* (3) Further development of technical knowhow in cylinder presswork. Prerequisite: 101, 202. Six lecture and laboratory periods.

303. *Cost Finding and Estimating.* (3) Copy fitting and estimating of the cost of production of all types of printed matter are studied. Prerequisite: 101. Six lecture and laboratory periods.

401-402-403. *Production.* (18) These courses are designed to round out the students' training by concentrated application of principles and techniques gained in previous courses in the areas of hand composition, make-up and imposition (401): Linotype Keyboard Operation and machine principles (402); and platen and cylinder presswork (403). In these courses the student will be given every opportunity to develop skills in actual shop foremanship, management and supervision. Prerequisite: all preceding courses. A minimum of 12 hours per week in supervised laboratory experiences is required.

450. *Senior Project.* Each senior is required to select and execute a project under the supervision of his major advisor. It may include the development of a course outline, execution of a complete printed piece, or research in the field of interest.

COURSES IN ELECTRONICS

101. *Electricity.* (3) Exploratory course intended to familiarize the student with basic principles of electricity and their practical applications. To develop skills in using tools in simple electrical construction.

102. *Electronics.* (3) This course emphasizes the part electricity and electronics play in our everyday lives. It encourages students to acquire safe work habits and develop skills in using tools and instruments while constructing projects which demonstrate basic electronic laws and principles.

103. *Radio Fundamentals.* (3) Radio and electronics fundamentals. Foundation in radio theory and practice. Six lecture and laboratory periods.

401. *Television Theory and Practice.* (6) Design and operation of T. V. receivers. Prerequisite: 101. Twelve lecture and laboratory periods.

402. *Television Servicing.* (6) Repair, testing and alignment of T. V. receivers. Prerequisite: 401. Twelve lecture and laboratory periods.

403. *Radio Transmitters and Communications Procedure.* (6) Transmitter design and operation; F.C.C. laws and procedures. Prerequisite: 401. Twelve lecture and laboratory periods.

GENERAL METALS

101. *Metal Working—Hand Operations.* (3) Instructional Units that lay a foundation for advanced metal working. Safety in Shop, hand tools, bench work operations; drilling, cutting, bending, forming, forging, heat treatment and precision measuring instruments; making and reading working drawings. Planning, designing and making projects and subject matter as taught on the Junior and Senior High levels.

102. *Sheetmetal Working.* (3) Introduction to Sheet Metal working. Developing patterns, laying-out, cutting, bending, forming, making seams, wiring edges, turning a burr, crimping, riveting, spot welding and soldering sheet metal. Planning and making projects, and developing subject matter as taught on the Junior and Senior High levels.

103. *Art Metal.* (3) Introduction to Art and Jewelry working. Tapping, chasing, and designing, shaping metal foil; sinking and beating down a tray, raising a bowl, decorating the surface or edge, etching design, doing wire work, hand soldering a joint, polishing, coloring, and preserving, metal spinning. Planning, designing and making projects, and developing subject matter as taught on the junior and senior high levels.

COURSES IN WOODWORKING

101. *Fundamentals of Carpentry.* (3) Modern tools and portable machinery materials and their uses. Carpentry specifications, modern house construction. Six lecture and laboratory periods.

102. *Foundation Construction.* (3) Beginning construction work. Staking and laying out foundation walls. Forms for footings. Forms for foundation walls, methods used in building forms. Prerequisite: 101. Six lecture and laboratory periods.

103. *Walls and Floor Framing.* (3) Types of wall framing, sill construction, girders and beams, joints, budging subflooring, outside walls, partition wall, framing, rough openings, second floor joists, and wall sheathing. Prerequisite: 101. Six lecture and laboratory periods.

111. *Hand Woodworking.* (3) A study of the proper use and care of common hand woodworking tools by the construction of simple projects that involve their uses. Six lecture and laboratory periods.

112. *Machine Woodworking.* (3) Emphasis is placed upon the proper maintenance and operation of such power woodworking machines as circular saws, shapers, morticers, band-saws, surfacers and jointers. Simple projects are constructed that involve the uses of these machines. Six lecture and laboratory periods.

113. *Machine Woodworking.* (3) Continuation of 112. Emphasis on jigs and maintenance of machines.

401. *Roof Framing.* (6) Styles of roof, gable roof, hip roof, gambrel roof. Principles of roof framing. The ridge common rafter. Hip rafter, layout of overhang and tail cut, valley rafter, jack rafter, dormer roof. Prerequisite: 101. Six lecture and laboratory periods.

402. *Exterior Finish.* (3) Covering for roof and wall, simple open and box cornice, gable trim, placing door and window frames, water table, corner boards. Porch cornice, bay window trim and exterior wall covering. Prerequisite: 401. Six lecture and laboratory periods.

403. *Interior Finish and Millwork.* (3) Interior wall covering, interior trim, types of casings and base laying, finished floor fitting and hanging doors. Mortise locks, stair construction, installing cabinets, built-in kitchen units and interior molding. Prerequisite: 402. Six lecture and laboratory periods.

NOTES

DEPARTMENT OF AEROSPACE STUDIES

HOWARD L. BAUGH
Lieutenant Colonel, U. S. Air Force
Professor of Aerospace Studies

Faculty:

Officers:

Captain Robert T. Dickerson, Captain James O. Hill, Major Thomas H. Hodges, Captain Charles C. Rachel, and Captain Marvin V. Ussery, Jr.

Non-Commissioned Officers:

Technical Sergeant Alonzo L. Bohannon, Technical Sergeant John P. McCorvey, Staff Sergeant Sol C. Lowman, Staff Sergeant Willie Nettles, and Staff Sergeant James E. Thornton.

AIR FORCE RESERVE OFFICERS' TRAINING CORPS

Mission

The mission of the Air Force ROTC is:

To develop in selected college students, through a permanent program of instruction at designated civilian educational institutions, those qualities of leadership and other attributes essential to their progressive advancement to positions of increasing responsibility as commissioned officers in the United States Air Force.

To plan, direct, supervise, and provide for the instructional and administrative needs of the Air Force Reserve Officers' Training Corps in accordance with policies approved by Headquarters Air University and Headquarters United States Air Force.

Purpose and Objectives

The purpose and objectives of the Air Force ROTC program are:

To select and motivate cadets to serve as career Air Force officers in fields specifically required by the United States Air Force.

To develop in cadets by precept, example and participation, the attributes of character, personality and attitudes essential for leadership.

To develop in cadets an interest in, and understanding of, the Air Force mission, organization, operations, problems, and techniques.

To provide that military education and training which will give cadets a general background and sound foundation on which to build an officer career.

Statutory Requirements

In order to meet the legal requirements for enrollment in Air Force ROTC, a student must be a citizen of the United States, not less than 14 years of age, and physically qualified for military service (or will be so on arrival at military age).

Character Requirements

A good moral character is a prerequisite for enrollment and continuance in the AFROTC. A student who has been convicted by a court-martial or by a civil court for any offense other than a minor traffic violation will not be enrolled initially or continued in the Advanced Course unless such offense is waived by competent authority.

Persons eliminated from a service academy or from any officer training program of the Army, Navy, or Air Force for military inaptitude, indifference, or undesirable traits of character will not be formally enrolled or permitted to wear the AFROTC uniform.

Persons eliminated for disciplinary reasons from a service academy or from one of the officer training programs of the Army, Navy, or Air Force will neither be certified for Selective Service deferment as basic students nor formally enrolled in the Advanced Course, unless a waiver is granted by competent authority.

Loyalty Requirements

Each student will be required to execute the following certificate:

> "I do solemnly swear (or affirm) that I will support and defend the Constitution of the United States against all enemies, foreign or domestic; that I will bear true faith and allegiance to the same; and that I take this obligation freely, without any mental reservation or purpose of evasion; so help me God."

This certificate will be placed in each student's record file after execution. A student who does not execute this certificate will not be enrolled in the basic course.

Age Requirements

A student will not be enrolled initially or be allowed to re-enroll in the advanced course after a period of non-participation in the Air Force ROTC training, if his age is such that he will be unable to complete all requirements

for appointment as a Reserve Officer of the Air Force prior to reaching age 26 years, 6 months, if programmed for flying training, or age 28 years, if programmed for other than flying training.

Institutional Requirement (Enrollment in the Basic Course)

In keeping with the provisions of the Morrill (Land Grant) Act, Tennessee A&I State University requires as a prerequisite for graduation that all physically qualified male students enroll in the Air Force ROTC until they complete the two-year basic course, provided they meet all other requirements as outlined above. The determination of who may be excused from the institutional military training requirement on the basis of previous military training or service, or for other reasons, is the prerogative of the institutional authorities.

ENROLLMENT IN THE ADVANCED COURSE

There are four categories of advanced course students. A student enrolled in Category I, II, or III and commissioned for it upon graduation from the Air Force ROTC program will be required to serve an initial active duty period according to the terms of his category agreement. The requirements for each category are listed below:

I. Category I—Cadets who qualify for flying training: For reporting purposes, there are two subcategories, Category 1-P for pilot candidates, and Category 1-N for navigator candidates.
   A. *Category I-P.* A cadet is basically qualified for enrollment in the Advanced Course in Category I-P who:
      1. Has achieved a Pilot Aptitude percentile of 25 or higher an Officer Quality percentile of 10 or higher on the Air Force Qualification Test (AFOQT).
      2. Is medically qualified Class I in accordance with current Air Force Directives.
      3. Agrees to, and signifies by signature, all items outlined in AF Form 1056, Category I Agreement, which specifies the extended active duty commitment applicable at the time of enrollment.
      4. Will not exceed 26½ years of age at the time of appointment (must enter flight training before reaching 27th birthday).
      5. In the opinion of the PAS, is acceptable on the basis of his standing at the institution and in the Air Force ROTC.
   B. *Category I-N.* A cadet is basically qualified for enrollment in the Advanced Course in Category I-N who:
      1. Has achieved a Navigator-Technical percentile of 25 or higher and an Officer Quality percentile of 10 or higher on the Air Force Officers Qualification Test (AFOQT).
      2. Is medically qualified Class I or IA in accordance with current Air Force Directives.
      3. Agrees to, and signifies by signature, all items, outlined in AF Form 1056, Category I Agreement, which specifies the extended active duty commitment applicable at the time of enrollment.
      4. Will not exceed 26½ years of age at the time of appointment (must enter flight training before reaching 27th birthday.)
      5. In the opinion of the PAS, is acceptable on the basis of his standing in the institution and in Air Force ROTC.

II. Category II—Cadets enrolled in college programs leading to a baccalaureate degree, with majors in prescribed engineering and scientific fields of study, or who may qualify for basic meteorology training. A cadet may be considered basically qualified for Advanced Course enrollment who:
   A. Has achieved an Officer Quality percentile of 10 or higher on the Air Force Officers Qualification Test (AFOQT).
   B. Is medically qualified for commissioning in accordance with current Air Force Directives.
   C. Agrees to serve on active duty for a minimum of four years, unless sooner relieved by proper authority.

   D. Will not exceed 28 years of age at the time of appointment.
   E. In the opinion of the PAS, is acceptable on the basis of his standing in the institution and in Air Force ROTC.
   F. Is pursuing a major field of study in the academic fields of Engineering, Biological Sciences, Physical Sciences, Earth Sciences, Mathematics, or has applied for Basic Meteorology Training, or meets the requirements for Weather Officer.

III. Category III—Cadets enrolled in college programs leading to a baccalaureate degree, with majors in other than engineering and scientific fields of study. A cadet may be considered basically qualified for Advanced Course enrollment who:
   A. Has achieved an Officer Quality percentile of 10 or higher on the Air Force Officer Qualification Test (AFOQT).
   B. Is mediaclly qualified for commissioning in accordance with current Air Force Directives.
   C. Agrees to serve on active duty for a minimum of four years, unless sooner relieved by proper authority.
   D. Will not exceed 28 years of age at the time of appointment.
   E. Is pursuing a major field of study in any academic field not listed in paragraph II F above.
   F. In the opinion of the PAS, is acceptable on the basis of his standing in the institution and in Air Force ROTC.

IV. Category IV—Cadets who have fulfilled their active military service requirement for selective service purposes. A cadet may be considered basically qualified for Advanced Course enrollment who:
   A. Has fulfilled active military service requirements for selective service purposes through service.
   B. Has achieved an Officer Quality percentile of 10 or higher on the Air Force Officer Qualification Test (AFOQT).
   C. Is medically qualified for commissioning in accordance with current Air Force Directives.
   D. Will not exceed 28 years of age at the time of appointment.
   E. In the opinion of the PAS, is acceptable on the basis of his standing in the institution and in Air Force ROTC.

CREDIT FOR PREVIOUS MILITARY TRAINING

An AFROTC cadet who transfers from another institution at which an AFROTC unit is also maintained will be given credit for that part of the AFROTC course which he successfully completed at the losing institution, as evidenced by the AFROTC official record.

On the basis of previous honorable active service, in the Air Force, Army, Navy, Marine Corps, or Coast Guard, a cadet may request a waiver of the basic course or any portion thereof, required for entrance into the Advanced Course. The Professor of Air Science may then waive so much of the Basic Course as he considers equivalent to the active service training. Each veteran entering this institution at the freshman or sophomore level who desires a commission through Air Force ROTC is encouraged to take in phase with non-veteran contemporaries the remaining portion of the basic program.

The Professor of Aerospace Studies may waive on a year-for-year basis so much of the Air Force ROTC program as he considers equivalent to the previous training at the United States Air Force Academy, United States Military Academy, United States Naval Academy, United States Coast Guard Academy, or in the Senior Division of the Army ROTC or Naval ROTC, for students eligible and accepted for enrollment. However, under no circumstances will the requirements for successful completion of the summer training phase of the Air Force ROTC programs be waived.

DEFERMENT POLICY AND OBLIGATION OF DEFERRED CADETS

The Air Force ROTC deferment procedure is designed solely to enable selected cadtets of the Air Force ROTC to qualify for appointment as commissioned officers of a component of the Air Force through uninterrupted

completion of academic and military courses. The Air Force will not select for deferment a cadet who cannot ultimately qualify for a commission through enrollment and training afforded by the Air Force ROTC or who evidences lack of desire to become an officer of the Air Force.

a. To qualify for continued deferment, cadets must satisfy all Air Force ROTC requirements, including the following:

(1) They must remain in good standing in military courses (a minimum of 2.00 average).
(2) They must remain in good standing in academic courses (a minimum of 2.00 average).
(3) Their attendance must be continuous, except for the following periods of authorized absence:
  (a) Regularly scheduled vacation periods.
  (b) Periods of sick leave approved by the Professor of Air Science.
  (c) Periods of leave from the military course of instruction that are authorized by the Commandant, Air Force ROTC.
  (d) Periods of regularly scheduled on-the-job training under a co-operative plan.
  (e) Periods after completion of the Air Force ROTC program and before completing the academic course, when authorized by the Commandant, Air Force ROTC.
(4) They must graduate within 12 months after completing Air Science IV (including AFROTC summer training).
(5) To be deferred from Selective Service induction, cadets selected for AFROTC program must sign a deferment agreement.
(6) The deferment of an individual will be cancelled if he ceases to be a formally enrolled AFROTC cadet, or if he fails to remain in good standing in both academic and military courses (a minimum of 2.00 average).

DISCHARGE FROM BASIC COURSE

With the concurrence of the university authorities, the Professor of Aerospace Studies may discharge a basic cadet from the AFROTC. Such discharge relieves the university of its obligation to require the cadet concerned to complete the basic course as a prerequisite for graduation.

DISCHARGE FROM ADVANCED COURSE

The Professor of Aerospace Studies may discharge a cadet from the Advanced Course. Each such discharge must receive the concurrence of the President of the University or his designated representative. A cadet will normally be discharged from the advanced course "without prejudice for the convenience of the Government." A cadet may be discharged for any of the following reasons:

A. A cadet who, for any reason, is unable to continue regular enrollment in the institution, will be discharged from the advanced course.
B. A cadet who becomes medically disqualified for continuance will be discharged from the advanced course.
C. A cadet who falls below acceptable retention standards will be discharged from the advanced course.
D. A cadet who requests release from his advanced course agreement for reasons considered justifiable may be discharged from the advanced course.
E. A cadet may be discharged because of inaptitude, indifference to training, incompatibility, evading the terms of his advanced course agreement, for disciplinary reasons, or for reasons involving undesirable traits of character.
F. A cadet eliminated from the Air Force ROTC Flight Instruction Program may be discharged from the advanced course.

DISCHARGED WITH PREJUDICE

A cadet whose conduct is or has been such as to bring dishonor on the Corps and upon himself may be discharged "with prejudice" subject to approval of the head of the university and the Commandant, AFROTC. A cadet

discharged "with prejudice" is not eligible for enrollment in an Air Force Officer Procurement Program or for appointment in any component of the Air Force.

THE AIR FORCE ROTC CURRICULUM

The AFROTC course of study is divided into the basic course covering the first two years, the advanced course covering the Junior and Senior years, and Summer Training.

The Basic Course—Foundations of Aerospace Power—is an introduction to the nature of aviation and its influence on modern man, and is designed, in part, to interest the cadet in continuing in AFROTC and, ultimately, in making the Air Force his career.

The Advanced Course builds on this background and provides instruction designed to further develop the cadet's officer potential. This is accomplished through attention to his personal skills (e.g. his ability to communicate, to think clearly, and to deal with people), and through expansion of his knowledge and understanding of global concepts and Air Force Operational principles.

Throughout the AFROTC course of study, the cadet is provided with a general education complementary to the academic program of the university. While this is specifically intended to serve the student as an Air Force officer, much of it will be useful to him in civilian occupations.

In addition to the formal course of study, the curriculum includes: experiences designed to stimulate and develop a growing interest in the Air Force flight training program, e.g. orientation flights and visits to Air Force bases; opportunities for the cadet to apply principles of leadership, management, and staff work in actual working situations; and other experiences (social activities, intramural competition, interdetachment competition, and guidance sessions) designed to assist in the development of officer qualities.

DETAILED COURSE OUTLINE

AEROSPACE STUDIES 100 (AS 100)

World Military Systems

The AS 100 (AS 151, AS 152 and AS 153) courses are offered in the Fall, Winter and Spring Quarters for Freshmen.

AS 151: WORLD MILITARY SYSTEMS
- A. Accept a two or three quarter hour college course which contributes to the professional education of an Air Force Officer.
- B. Aerospace Power Orientation and Leadership Laboratory: 1 hour per week.....10 hours

AS 152: WORLD MILITARY SYSTEMS
- A. Introductory Phase, World Military Systems.....10 hours
- B. Organization for National Security.....10 hours To Include the U. S. Air Force
- C. Leadership Laboratory: 1 hour per week.....10 hours

AS 153: WORLD MILITARY SYSTEMS
- A. Accept a two or three quarter hour college course which contributes to the professional education of an Air Force officer.
- B. Aerospace Power Orientation and Leadership Laboratory: 1 hour per week.....10 hours

AEROSPACE STUDIES 200 (AS 200)

World Military Systems

AS 251: WORLD MILITARY SYSTEMS
- A. The U. S. Army ..... 8 hours
- B. The U. S. Navy..... 6 hours
- C. Western Alliances ..... 6 hours
- D. Leadership Laboratory: 1 hour per week.....10 hours

AS 252: WORLD MILITARY SYSTEMS
A. Accept a two or three quarter hour course which contributes to the professional education of an Air Force Officer.
B. Leadership Laboratory: 1 hour per week.....10 hours
AS 253: WORLD MILITARY SYSTEMS
A. Communist Military Systems.....10 hours
B. Trends and Implications of World Military Power..10 hours
c. Leadership Laboratory: 1 hour per week.....10 hours

AEROSPACE STUDIES 300 (AS 300)

Growth and Development of Aerospace Power

The AS 300 Course (AS 351, AS 352 and AS 353) is spread over a three-quarter period during the student's Junior year. Classes meet four times per week, and one hour per week is devoted to Leadership Laboratory. PREREQUISITE: Successful completion of the two-year basic course—AS 100 and AS 200—or completion of the six-weeks Field Training Course, AS 275 for transfer students. (This course will be offered in lieu of the two-year basic course at a designated Air Force Base for a period of six weeks prior to entering the AS 300 level courses.)

AS 300

Growth and Development of Aerospace Power

COURSE OUTLINE:
1. The Nature of War
2. History of Airpower
   a. The Beginnings
   b. The Formative Years
   c. Problems of Peace Between Wars
   d. Airpower During and After WW II
3. The United States Air Force
   a. Mission and Organization of the Defense Department
   b. Air Force Concepts, Doctrine, and Employment
4. Astronautics and Space Operations
   a. The Importance of a National Space Effort
   b. Development of the Space Program
   c. The Spatial Environment
   d. Orbits and Trajectories
   e. Space Vehicle Systems
   f. Propulsion, Propellants, and Power Sources
   g. Instrumentation, Communications, Guidance, and Control
   h. Ground Support Systems
   i. Manned Space Flight
   j. Operations in Space
5. The Future Development of Aerospace Power

AEROSPACE STUDIES 400 (AS 400)

The Professional Officer

The AS 400 Course (AS 451, AS 452 and AS 453) is spread over a three-quarter period and is designed for the student's Senior year. Classes meet four hours per week, with one hour devoted to leadership Seminar. Cadets enrolled in this course also attend one hour of Leadership Laboratory per week.

AS 400

The Professional Officer

COURSE OUTLINE:
1. Military Professionalism
2. Responsibilities of the Professional Man
3. Foundations of the Military Profession
4. The Military Justice System
5. Leadership and Management

6. Data Processing
7. Air Force Controls
8. Briefing for Commissioned Service

COURSES TO BE SUBSTITUTED FOR BASIC AEROSPACE STUDIES

CHEMISTRY:
- Bio-Chemistry
- General Chemistry
- Organic Chemistry
- Analytical Chemistry
- Physical Chemistry

HUMANITIES:
- World Literature

BIOLOGY
- Botany
- Bacteriology
- Physiology
- Intro to Biology
- Genetics
- Anatomy
- Zoology
- Embryology
- Entomology

LANGUAGES: (Foreign)
- German
- French
- Spanish

PHYSICS:
- General Physics
- College Physics

SCIENCE
- Natural Science
- Geography
- Weather
- Geology

MATHEMATICS:
- Algebra
- Trigonometry
- Arithmetic
- Mathematics (General Course)
- Geometry
- Calculus
- Theory of Equations
- Differential Equations

SOCIAL SCIENCES:
- Economics
- History
- Psychology
- Sociology
- Social Studies
- Political Science
- Social Administration

ENGINEERING:
- Architectural Engineering
- Civil Engineering
- Mechanical Engineering
- Electrical Engineering
- Industrial Engineering
- Aviation Education

UNIVERSITY CREDIT

Tennessee A&I State University grants the following credit for Aerospace Studies courses:

Air Science 1 (A. S. 151, 152, 153) ..... 3 quarter hours per year
Air Science 2 (A. S. 251, 252, 253) ..... 3 quarter hours per year
Air Science 3 (O. E. 300) ..... 9 quarter hours per year
Air Science 4 (A. S. 451, 452, 453) ..... 9 quarter hours per year

NOTE: No credit is granted by the University for attending Summer Training or Flight Instruction.

One quarter hour is granted for Leadership Laboratory for A. S. 151, A. S. 152, and A. S. 253. AFROTC cedit is granted for A. S. 4 substitute courses (3 hours per subject.).

CURRICULUM DESCRIPTIONS FOR EACH AEROSPACE STUDIES YEAR

AEROSPACE STUDIES 100 (AS 151, 152, 153): WORLD MILITARY SYSTEMS (Freshman Year) An introductory course exploring the causes of the present world conflict, the role and relationship of military power to that conflict, and the responsibility of an Air Force Officer. The course begins with a discussion of the factors from which differing political philosophies have evolved. It continues with a tri-dimensional analysis of the three prime political philosophies which have guided segments of society in the twentieth century. This is followed by a discussion of the means that nations develop to pursue their objectives and how they confront each other in the use of these means. The course then treats individual military systems with emphasis upon the U. S. Department of Defense and the UU. S. Air Force.

AEROSPACE STUDIES 200 (AS 251, 252, 253): WORLD MILITARY SYSTEMS (Sophomore Year) AS 200 continues the study of world military forces and the political-military issues surrounding the existence of these forces.

This includes a study of the United States Army, and the United States Navy, their doctrines, missions and employment concepts; a study of the military forces of NATO, CENTO, SEATO, and their role in free world security; and an investigation of the military forces of the USSR, the Soviet Satellite Armies, and the Chinese Communist Army. The AS 200 phase concludes with an analysis of the trends and implications of world military power.

AEROSPACE STUDIES 275: SIX-WEEKS FIELD TRAINING COURSE. This course is designed to prepare the student for enrollment into the advanced program courses (AS 300 and AS 400). It enables transfer students and others who are unable to take the two-year basic course an opportunity to pursue the Advanced Program and thereby receive a commission in two years of study leading to the Baccalaureate degree at the University. The training is provided at a designated Air Force base.

AEROSPACE STUDIES 300 (AS 351, 352, 353): GROWTH AND DEVELOPMENT OF AEROSPACE POWER (Junior Year) A survey course about the nature of war; development of airpower in the UnUited States; mission and organization of the Defense Department; Air Force concepts, doctrine, and employment; astronautics and space operations; and the future development of aerospace power. Includes the United States space programs, vehicles, systems, and problems in space exploration; The Nature of War; History of Airpower; The United States Air Force; Astronautics and Space Operations; and the Future Development of Aerospace Power.

AEROSPACE STUDIES 400 (AS 451, 452, 453): THE PROFESSIONAL OFFICER (Senior Year) A study of professionalism, leadership and management. Includes the meaning of professionalism, professional responsibilities, the military justice system, leadership theory, functions, and practices, management principles and functions, problem solving, and management tools, practices and controls.

SUMMER TRAINING UNIT: THE AIR FORCE IN OPERATION (Four weeks between the Junior and Senior years for cadets completing four years of Air Force ROTC only. For the two-year program cadets, this training is to be completed following the Senior year and is required in addition to the Aerospace Studies 275.) Junior Officer training with emphasis on military discipline, aircrew and aircraft indoctrination, a career in the USAF, organization and functions of an Air Force base, physical training and weapons familiarization."

Cadet Outcomes: When the cadet has completed AFROTC summer training, he should:

1. Have acquired those leadership qualities and the *esprit de corps* which derive from working with others under conditions of military life.
2. Have an increased interest in flying training and be able to practice routine procedures associated with non-aircrew training.
3. Understand the moral responsibility and obligations of an Air Force officer.
4. Be acquainted with the functions performed by the various organizations and key officers of the Air Force base.
5. Have acquired increased proficiency in leading and participating in military drills, parades and ceremonies.
6. Be able to participate in a well-rounded athletic program.
7. Be able to care for and use his personal weapons properly.
8. Be better qualified as a potential junior officer in the Air Force.

FLIGHT INSTRUCTION PROGRAM

The objectives of the Flight Instruction Program are: to motivate qualified Air Force ROTC cadets toward a career in the Air Force; to encourage qualified basic Air Force ROTC cadets to enroll in Category I of the Advanced Course as pilot training applicants; and to provide a screening device that will identify those pilot training applicants who lack the basic aptitudes for Air Force pilot training.

General Descriptions: The FIP provides 36½ hours flying time—35 hours (15 hours solo and 20 hours dual) of flight instruction plus 1½ hours final progress check. The FIP also provides 15 hours of ground school. Each

graduate of the FIP who successfully completes 35 hours of flight and ground instruction is eligible to apply for an FAA Private Pilot's Certificate, but the acquisition of a certificate is not a requirement for successful completion of the FIP. The Flight Curriculum, as agreed upon by the Air Force and the FAA, is based upon Civil Aeronautics Manual 50 (Primary Flying School Curriculum) and the standards described therein are official for the FIP.

AIR FORCE ROTC EMOLUMENTS

All students in the AFROTC are furnished texts and uniforms by Tennessee A&I State University. These students are required to deposit Ten ($10.00) Dollars with the Bursar of the University as surety against loss or damage of textbooks, uniforms or equipment.

At the end of the Spring Quarter, or at such time as the student officially withdraws from the University, the ten dollar deposit is returned to the student provided he turns in all textual materials, uniforms and equipment in a serviceable condition, except for "fair wear and tear."

In addition to being furnished texts, uniforms and other equipment students enrolled in Advanced AFROTC are paid retainer fee at a monthly rate prescribed for each fiscal year by the Secretary of the Air Force.

The retainer pay period extends continuously from the first day of the first full quarter of official enrollment in the Advanced Program to graduation, minus the Summer Training Period. A cadet is expected to complete the advanced program in approximately 21 months.

SPONSORED ACTIVITIES

The Department of Air Science sponsors the following activities:

1. *The AFROTC Drill Team.* The "Tiger Jets" is the official name of the AFROTC Drill Team. This team is composed of approximately thirty-five outstanding cadets who possess desirable leadership potential. This team performs at athletic events, both home and away, at parades or ceremonies, and serves as honor guard or ushers for activities sponsored by the University.
2. *The Arnold Air Society.* This is a national AFROTC Society for outstanding cadets enrolled in AFROTC.
3. *The AFROTC Society.* This Society is a social organization open to all enrolled cadets, organized to promote the general welfare of the cadet and to provide social functions and activities peculiar to the cadet corps. It publishes "THE ROCKET" a cadet newspaper. Dues are One ($1.00) Dollar per cadet, per quarter.
4. *The Air Police.* Selected Basic Cadets who perform security duties.
5. *NCO Academy.* An organization of selected Basic Cadets whose aims is to develop leadership potential through proficiency in drill and ceremonies.

NOTES

AGRICULTURAL AND HOME ECONOMICS EXTENSION

HOMER R. WHEATON, Acting Director

Extension Faculty:

Christine Alexander, Arthur B. Davis, Mary Greer, Henry C. Hardy, Neal McAlpin, Willie E. Officer, Marylouise E. Ritter, Homer R. Wheaton, and Eddie Williams.

DIVISION OF AGRICULTURAL AND HOME ECONOMICS EXTENSION SERVICES

Purpose

The Division of Agricultural and Home Economics Extension Services is an administrative unit of Tennessee Agricultural and Industrial State University organized for the purpose of providing useful services to those citizens of the State who find it impossible to avail themselves of the services offered on the University campus, or find it more expedient to work with specific groups on special farm and home problems on local, community, or State levels.

Scope of Operation

Provisions are made to meet the specific needs of special interests groups in agricultural and home economics farm and home workshops, conferences lecture demonstrations, and institutes. Arrangements may be made for these services through the Director of Agricultural and Home Economics Extension Services. The Division will work with agencies in several rural communities over the State in planning programs for general improvement in five major areas which include: (1) Agriculture, (2) Home Economics, (3) General Education, (4) Organization, and (5) Civic enterprises.

The Division offers services of its resource consultants who are specialists in Agricultural Education, Poultry Husbandry, Swine Husbandry, Beef Cattle, Farm Mechanics, Ornamental Horticulture, Agricultural Economics, Dairy Husbandry, Plant Science Home Furnishings, Foods and Nutrition, and Veterinary Medicine.

The method employed in using consultant services is determined by the needs of the local community. These services are offered on individual, group, organizational, and community basis.

The Division sponsors a Farm and Home Institute in August of each year, for the purpose of disseminating information to farmers and farm wives from local communities of Tennessee.

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