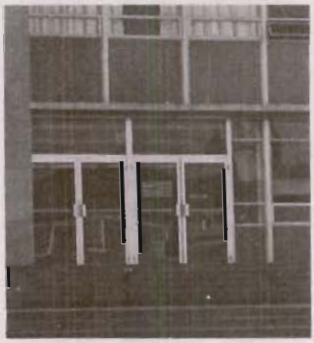
bulletin

TENNESSEE STATE UNIVERSITY

announcements for 1970-1971

march, 1970

nashville, tennessee



ANNOUNCEMENTS

1970-1971

bulletin

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1970-1971 University Calendar

Fall Quarter 1970

September 1, Tuesday.....Last Date to receive applications and transcripts for Fall Quarter
September 16, Wednesday.....Residence halls opened for Freshmen only—8:00 a.m.
September 17, Thursday.....Convocation for Freshmen and New Students—10:00 a.m.
September 18-21, Friday-Monday.....Registration for Freshmen and New Students
September 21, Monday.....Residence halls opened for Upperclassmen and Graduate Students
September 22-23, Tuesday-Wednesday.....Registration for Upperclassmen and Graduate Students
September 24, Thursday.....Classes begin at 8:00 a.m.
November 2-3, Monday-Tuesday.....Mid-Term Examinations
November 26-27, Thursday-Friday.....Thanksgiving Holidays
December 11-16, Friday-Wednesday.....Final Examinations, Fall Quarter
December 16, Wednesday.....Christmas Recess begins after last scheduled examination

Winter Quarter 1971

December 7, Monday.....Last Date to receive applications and transcripts for Winter Quarter
January 4-5, Monday-Tuesday.....Registration for Winter Quarter
January 6 Wednesday.....Classes begin at 8:00 a.m.
February 4-5, Thursday-Friday.....Mid-Term Examinations
March 10-13, Wednesday-Saturday.....Final Examinations, Winter Quarter
March 15-20, Monday-Saturday.....Spring Recess

Spring Quarter 1971

March 8, Monday.....Last Date to receive applications and transcripts for Spring Quarter
March 22-23, Monday-Tuesday.....Registration for Spring Quarter
March 24, Wednesday.....Classes begin at 8:00 a.m.
April 19-20, Monday-Tuesday.....Mid-Term Examinations
June 2-5, Wednesday-Saturday.....Final Examinations, Spring Quarter
June 6, Sunday.....Commencement Exercises

Summer Quarter 1971

First Term

June 1, Tuesday.....Last Date to receive applications and transcripts for Summer I Session
June 14, Monday.....Registration, Summer I Session
June 15, Tuesday.....Classes begin at 8:00 a.m.
July 5, Monday.....Fourth of July Holiday
July 16-17, Friday-Saturday.....Examinations, Summer I Session

Second Term

July 1, Thursday.....Last Date to receive applications and transcripts for Summer II Session
July 19, Monday.....Registration, Summer II Session
July 20, Tuesday.....Classes begin at 8:00 a.m.
August 20-21, Friday-Saturday.....Examinations, Summer II Session
August 22, Sunday.....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, Physical Education and Recreation
- Department of Home Economics Education
- Department of Modern Foreign Languages
- Department 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
- Department of Nursing Education

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
- The Honors Program

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, Physical Education and Recreation
- Department of Psychology

SCHOOL OF ENGINEERING
- Department of Architectural Engineering
- Department of Civil Engineering
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- Department of Industrial Education
- Department of Mechanical Engineering

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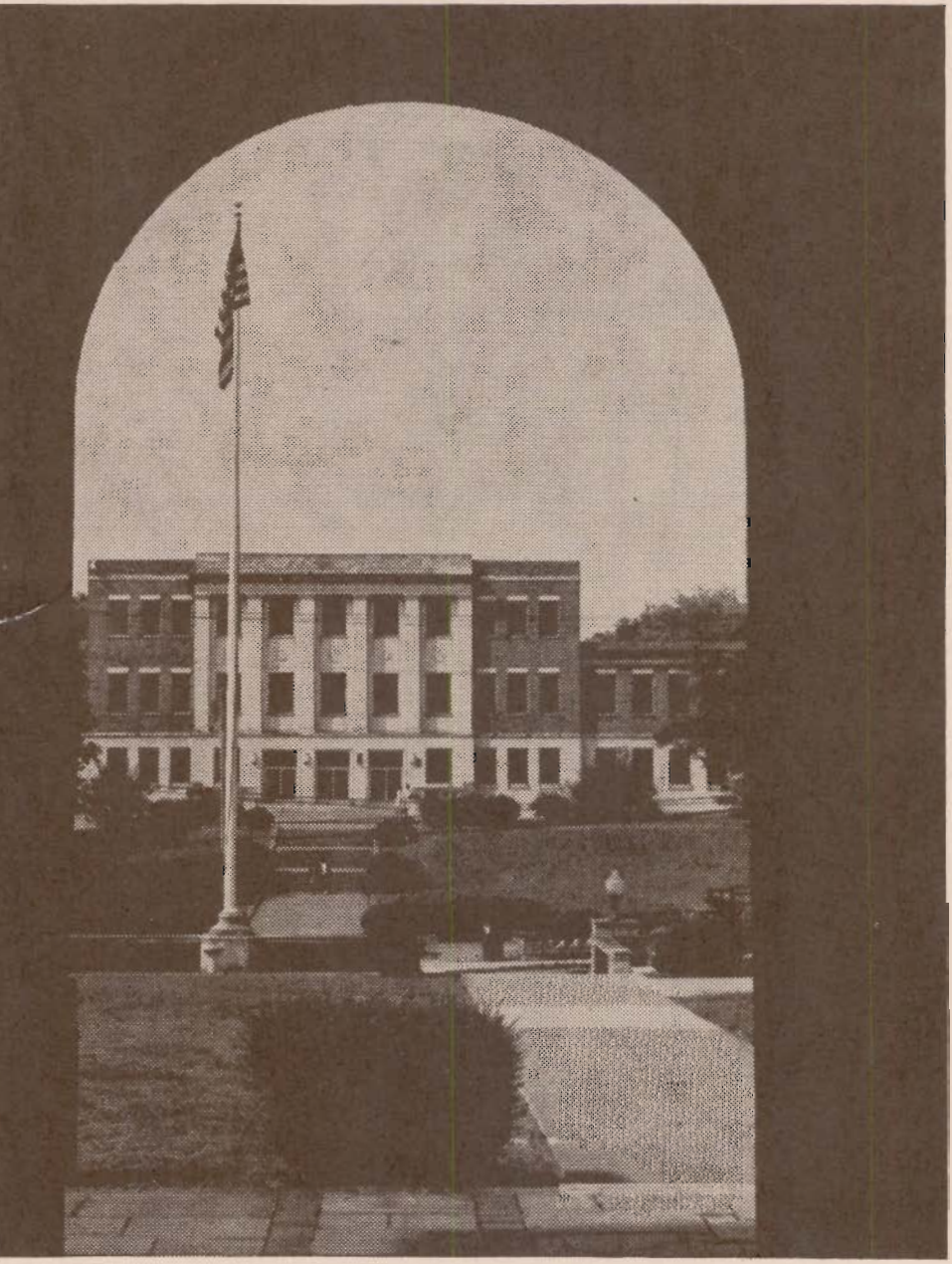

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° On leave.
°° Deceased.

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Bessie Fogle Kean, A.B., Kentucky State College; M.A., in Library Science, University of Michigan. *Professor of Library Service.*

Henry A. Kean, Jr., B.S., M.S., Tennessee A. and I. State University. *Instructor in Biology.*

Raymond H. Kemp, B.A., M.S., Duquesne University. *Professor of Sociology.*

Vivienne Killingsworth, B.A., University of Wales (Residence requirements completed for Ph.D.). *Instructor in History.*

Luther Kindall, B.S., M.S., Tennessee A. and I. State University. *Instructor in Psychology.*

Calvin E. King, A.B., Morehouse College; M.A., Atlanta University; Ph.D., Ohio State University. *Professor of Mathematics.*

Peter C. Lai, B.S., Chung Cheng University; M.S., Ph.D., Vanderbilt University. *Associate Professor of Mathematics.*

Eva Bluford Landers, B.S., North Carolina A. & T. College; M.S., Temple University. *Instructor in Biology.*

Lauree Griffin Lane, B.A., Fisk University; M.S., Indiana University. *Assistant Professor of Science Education.*

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Mabel W. Leathers, A.B., M.A., University of Colorado. *Associate Professor of Sociology.*

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Edward C. Lewis, B.Mus., West Virginia State College; Diploma, The Army Music School; M.S., University of Illinois; Ph.D., University of Wisconsin. *Professor and Head of the Department of Art and Music Education.*

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Crawford B. Lindsay, A.B., Talladega College; M.A., University of Michigan; Ph.D., Cornell University. *Professor and Head of the Department of English.*

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Hortense D. Lloyd, A.B., Prairie View College; A.M., Columbia University. *Assistant Professor of English.*

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Edna W. Lockert, A.B., Spelman College; M.S., University of Wisconsin. (Residence requirements completed for Ph.D.). *Associate Professor of Psychology.*

Mary A. Love, B.S., M.S., Tenn. A. and I. State University. *Assistant Professor of Mathematics.*

Russell J. Love, B.S., M.A., Ph.D., Northwestern University. *Part-Time Professor of Speech Correction.*

Lloyd L. Lusk, A.B., Jarvis Christian College; M.S., Indiana University. *Associate Professor of Music.*

Neal McAlpin, B.S., Tenn. A and I. State College; M.S., University of Wisconsin; Ph.D., Rutgers, The State University (N.J.). *Associate Professor of Plant Science.*

Lois C. McDougald, A.B., Livingston College; M.A., Indiana University. *Associate Professor of History.*

Ruth A McDowell, B.S., Princess Ann College; M.Ed., Pennsylvania State College. *Associate Professor of Child Development and Director of the Nursery School.*

Thomas A. McDowell, A.B., M.A., Tennessee A. and I. State University. *Part-time Instructor in Political Science.*

Cathryn M. McKinney, B.S., M.S., Tenn. A. and I. State University. *Assistant Professor of Clothing and Textiles.*

Frederick J. D. McKinney, B.A., M.A., Ball State Teachers College; Ed.D., Indiana University. *Professor of Education.*

Mohan J. Malkani, B.S., M.S., University of Baroda, (India); M.S., Mississippi State University. *Professor and Head of the Department of Electrical Engineering.*

John M. Mallette, B.S., Xavier University; M.S., Texas Southern University; Ph.D., Pennsylvania State University. *Professor of Biological Sciences and Chairman of the Graduate Curriculum in the Biological Sciences.*

Charity M. Mance, B.A., Howard University; M.A., University of Michigan; Ph.D., New York University. *Professor of Education and Head of the Department of Administration, Curriculum and Instruction.*

Rama I. Mani, B.Sc., M.Sc., Ph.D., University of Bombay. *Associate Professor of Chemistry,* Postdoctoral Study: Stanford University, Vanderbilt University, University of Southern California.

Annie B. Martin, A.B., Kentucky State College; M.S., in Social Work University of Tennessee. *Assistant Professor of Social Administration and Coordinator of the Curriculum in Social Administration.*

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Ruby W. Martin, B.A., Bennett College; M.S., South Carolina State College; Ed.D., Syracuse University. *Professor of Reading.*

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Jitsuichi Masuoka, A.B., College of Emporia; M.A., University of Hawaii; Ph.D., University of Iowa. *Part-Time Professor of Sociology.*

Robert W. Meadows, B.A., George Peabody College; M.S., University of Tennessee. *Instructor in Social Welfare.*

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Merle Miles, B.A., Houston-Tillotson College; M.A., Fisk University. *Instructor in Sociology.*

Katie Miller, A.B., Tougaloo College; M.S., Tenn. A. and I. State University. *Assistant Professor of English.*

Richard Allen Miller, B.S., North Carolina College; M.S., Tenn. A. and I. State University. *Basketball Coach, Grade III, and Assistant Professor of Health, Physical Education and Recreation.*

Tyree Jones Miller, B.S., Howard University; M.S., Kansas City University. *Assistant Professor of English.*

Andrew Minor, B.S., Tennessee State University; M.A., Western Kentucky State College. *Assistant Professor of Cooperative Education.*

*Louis Mishu, B.S.C.E., University of Baghdad; M.S.C.E., Ph.D., Purdue University. *Associate Professor of Civil Engineering.*

E. Preston Mitchell, B.S., North Carolina College; M.A., Ph.D., State University of Iowa. *Proofessor and Head of Department of Health, Physical Education and Recreation.*

Lula Margaret Moore, B.S., Meharry Medical College School of Nursing, M.S., Boston University. *Instructor in Nursing Education.*

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Virginia S. Nyabongo, B.A., Bennett College; M.A., Ph.D., University of Wisconsin; Certficat d'Etudes Francaises Diplome d'Etudes Superieures de Phonetique, University of Grenoble, France. *Professor of French.*

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* On leave.

Daniel E. Owens, B.M., West Virginia State College; M.F.A., Carnegie Institute of Technology. *Assistant Professor of Music.*

Jyotsna Paruchuri, B.A., Queen Mary's College; M.A., University of Madras. *Instructor in History and Political Science.*

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Gretchen B. Payne, A.B., University of Denver; M.A., University of Colorado; Ed.S., George Peabody College. *Assistant Professor of Education.*

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Tee B. Peacock, B.S., M.S., Tenn. A. and I. State University. *Instructor in Elementary Education.*

Ronnie C. Peoples, B.S., Tennessee State University. Captain, USAF, *Assistant Professor of Aerospace Studies.*

Harold L. Phelps, B.S., M.S., Tenn. A. and I. State University. *Associate Professor of Psychology.*

Gilbert K. Pleasant, B.S., West Virginia State College; M.Ed., University of Cincinnati. *Associate Professor of Industrial Education and Director of the Printing Plant.*

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Thomas E. Poag, A.B., Morgan State College; M.A., Ohio State University; Ph.D., Cornell University. *Professor and Head of the Department of Speech and Drama and Dean of the School of Arts and Sciences.*

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Marcus M. Rowland, A.B., Clark College; M.Mus., University of Michigan. *Assistant Professor of Music.*

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Cecil M. Ryan, B.S., Langston University; C.F.I. United States Department of Commerce; M.S., Tenn. A. and I. State College. *Assistant Professor of Aeronautics.*

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Annie G. H. Sasser, B.S., Shaw University; M.S., Prarie View College. *Associate Professor of Mathematics and Director of Career Planning Placement Services.*

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Donald D. Savoy, B.S., M.S., Ohio State University. *Professor of Physics.*

Mingo Scott, B.S., M.S., Tenn. A. and I. State College. *Assistant Professor in History.*

Gilbert W. Senter, B.S., M.S., Tenn. A. and I. State College. *Associate Professor of Chemistry.*

Samuel H. Shannon, B.A., Vanderbilt University; M.A., George Peabody College. *Assistant Professor of History.*

Solomon N. Shannon. A.B., Mississippi Industrial College; M.A., Fisk University; M.A., Columbia University; Ph.D., North Carolina College at Durham. *Associate Professor of Secondary Education.*

John H. Sharpe, M.Mus., Howard University; M.Mus., Union Theological Seminary. *Professor of Music and University Organist.*

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William J. Simmons, A.B., Lincoln University (Pa.); B.D., Union Theological Seminary; M.A., Columbia University; D.D., Monrovia College, Liberia, West Africa. *Professor of Philosophy.*

Lula C. Simpson, B.S., Alabama State College; M.A. Teachers College of Columbia University. *Instructor in Music.*

Ralph R. Simpson, B.S., Alabama State College; M.A., Columbia University; Ph.D., Michigan State University. *Professor of Music.*

Alice Smith, A.B., Tougaloo College; M.S., Tennessee A. and I. State University *Instructor in Science Education.*

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Frederick D. Smith, B.S., Prairie View State College; M.S., D.V.M., Michigan State University. *Professor of Biology.*

°Marjorie F. Smith, A.B., Vassar College; M.A., Johns Hopkins University. *Instructor in History.*

William O. Smith, B.S., M.A., New York University; Ph.D., State University of Iowa. *Professor of Music.*

Asalean Springfield, A.B., Eastern Michigan University; M.A., Tennessee A. and I. State University. *Instructor in English.*

Alonzo T. Stephens, A.B., Florida A. and M. University; M.Litt., Ph.D., University of Pittsburgh. *Professor of History and Head of Department of History and Political Science.*

° On leave.

Dorothy A. Stephens, A.B., B.S.L.S., North Carolina College; M.A., New York University. *Assistant Professor of Social Sciences.*

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Helen N. Teague, B.S., Kentucky State College; M.S., Ph.D., Indiana University. *Associate Professor of Secondary Education.*

Gul M. Telwar, B.S., University of Kabul; B.S., M.S., University of Wyoming; Ed.D., Oklahoma State University. *Associate Professor and Head of the Department of Agricultural Education.*

Edward S. Temple, B.S., M.S., Tenn. A. and I. State University. *Head Track Coach (Women's), Grade I, and Associate Professor of Sociology.*

Chris L. Terrill, B.S., Case Institute of Technology; Ph.D., Case Western Reserve University. *Associate Professor of Science Education.*

Early J. Thornton, B.S., Tuskegee Institute; M.S., Massachusetts State College. *Professor of Poultry Husbandry.*

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Miriam G. Towns, B.S., Framingham State Teachers College; M.S., Cornell University. *Associate Professor of Foods and Nutrition.*

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

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Kou-Ling Wang, B.S., Taiwan, Taiwan, China. Studying in Doctoral Program, Vanderbilt University. *Instructor in Physics.*

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* On leave.

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

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 and Director of the Honors Program.*

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

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

Harrison B. Wilson, B.S., Kentucky State College; M.S., H.S.D., Indiana University. *Professor and Chairman of Lower Division of Department of Health, Physical Education and Recreation.*

Lucy R. Wilson, B.S., South Carolina State College; M.S., Ed.D., Indiana University. *Professor of Psychology and Director of Testing and Counseling.*

Raleigh A. Wilson, B.A., M.A., Ph.D., University of Iowa. *Professor of History.*

*Everette L. Witherspoon, B.S., M.S., North Carolina A. & T. College. *Assistant Professor of Industrial Education.*

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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.*

Theodore R. Wood, B.S., Tennessee A. and I. State College; M.S., Michigan State University. *Associate Professor of Animal Husbandry.*

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

Samuel L. Word, B.S., M.Ed., Tennessee A. and I. State University. *Assistant Professor of Industrial Education.*

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EXTENSION

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

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

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

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

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

TEACHING ASSISTANTS

Estella B. Aughtry, B.A., Fisk University; M.S., University of Buffalo. *Teaching Assistant in Biological Sciences.*

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* On leave.

Robert Braden, B.S., Tennessee A. and I. State University. *Part-time, Science Education.*

Herman Devereaux Brady, B.S., M.S., Tennessee A. and I. State University. *Speech and Drama.*

William H. Butler, B.A., Fisk University. *Biological Sciences.*

John Henry Frazier, B.S., University of Tennessee. *Part-time Technican in Business Administration.*

Emma Gunn, B.S., M.S., Tennessee A. and I. State University. *English.*

Vernice L. Jobe, B.A., Tennessee State University. *Teaching Assistant in Reading.*

Carolyn O. Johnson, B.S., Winston-Salem State College. *Teaching Assistant in Nursing Education.*

Vera L. Merritt, B.S., Tennessee A. and I. State University. *English.*

Charles Edward Miller, B.S., Tennessee A. and I. State University. *Poultry Husbandry.*

Edna F. Overall, B.S., Tennessee A. and I. State University. *Health, Physical Education and Recreation.*

Wallace R. Perkins, B.S., Hampton Institute. *Electrical Engineering.*

Ella Mae Phillips, B.S.N., Meharry School of Nursing; B.A., Fisk University. *Teaching Assistant in Nursing Education.*

Melanie K. Pope, B.A., University of Florida. *Teaching Assistant in Home Economics.*

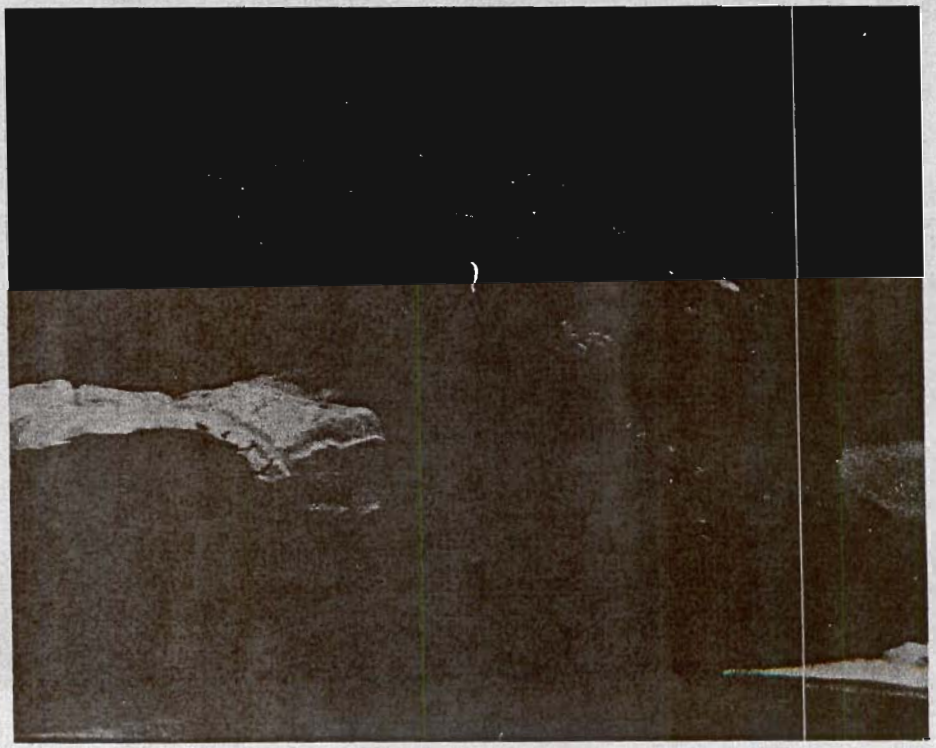
Monetha Roberts Reaves, B.A., LeMoyne College. *English.*

Johnnie Maurice Rutland, B.A., Fisk University. *Biology.*

Sister Mary Joselinda, B.S., St. Mary College; R.N. Certificate, State of Illinois, *Nursing Education.*

Mary E. Stedd Stewart, B.S., Kentucky State College; M.A., Fisk University. *English.*

Handy Williamson, B.S., Alcorn A. & M. College. *Agriculture.*



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 Extension and Continuing Education, and Department of Aerospace Studies.

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 purpose of Tennessee State University is to stimulate the student to reach his full potential through a respect for inquiry and an understanding of the cultural tradition of which he is a part; to go forth to imbue others with a desire to develop basic knowledge and skills that will allow them to make their way in a practical world; and finally, to enlarge the major bodies of knowledge and to apply them to the improvement of working and living conditions of the citizens of the State and nation.

The University is a land-grant institution and, hence, considers instruction, research, and service to be its mandates as indicated in the Morrill Acts of 1862, 1887, and 1890. Toward that end, the University, has these specific objectives:

1. To maintain high standards of instruction at both the undergraduate and graduate levels in the curricula and fields of specialization through which degree programs are offered.
2. To encourage faculty and students to engage in research and to advance knowledge in the subject matter areas with which the various departments and divisions are concerned.
3. To assume its role as a servant and leader of the citizens of the State in disseminating knowledge and providing services through Agricultural and Home Economics Extension and Field Services, instruction for the adult population in credit and non-credit courses, and institutes.

The University recognizes a student's level of accomplishment in the programs of its schools and divisions, awarding where appropriate the associate, baccalaureate, and master's degrees.

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, the computer center, the general auditorium, which accommodates approximately one thousand persons, the Little Theatre for student productions in drama, and a swimming pool. In 1967 the building was renovated and enlarged. It is completely air conditioned.

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 the biological sciences.

The Jim Nance McCord Building, erected in 1950, is located on 35th Avenue, North, near Centennial Boulevard. 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 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 Jane E. Elliott Building is located west of the University library on the north campus. The building contains laboratories, lecture rooms and work rooms for home economics and a nursery school.

The W. W. Lawson Agricultural Building, erected in 1956, is located 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 "Fay" 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, physical education, and recreation 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 16,000. The turf provides for athletic events of football, 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 accommodation 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.

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.

Good Will Manor is a modern colonial type residence located north of Harned Hall. It houses the Office of Development.

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 35th Avenue, North, near Centennial Boulevard. It is a modern three-story air conditioned building equipped with classroom and special laboratories for Teacher Education, Psychology, Counseling Center, and English.

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 otther 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.

An addition to the Union was completed in August 1968. This addition is a modern fire-proof, air-conditioned structure and includes a cafeteria-ballroom with a seating capacity of 1000, a coffee shop, a billiards room, a multi-purpose room, a game room and a faculty dining room.

The Music Hall, established in 1960, is located on the north campus. This building houses facilities for Art.

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, I, erected in 1964, is located on the southeastern part of the campus. It is a modern six-story building, air-conditioned and fireproof. The building houses freshmen.

The New Women's Residence Center, 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.

The Physics and Mathematics Building, completed in the Fall of 1965, is a modern, three story, air conditioned building. The building contains undergraduate and research laboratories, classrooms, a lecture hall, and offices.

The Lena B. Watson Residence Center for Men, II, erected in 1966, is located on the southeastern part of the campus. It is a modern seven-story building, air-conditioned and fire-proof. The building houses upperclassmen.

The Graduate Residence Center for Women, erected in 1967, is located on the southwest part of the campus. It is a modern six-story building, air-conditioned and fire-proof. The building houses upperclassmen.

The Graduate School Building, erected in 1967, is a modern four-story, air-conditioned building. It is located directly west of the Administration Building. The building contains classrooms, laboratories and offices for: The Graduate School and the following Departments of the School of Arts and Sciences; English, Modern Foreign Languages, History and Political Science, Sociology, and Speech and Drama.

The Operations Building, erected in 1967, is located on the north campus. This building replaces the old warehouse, and houses the Maintenance Department. The Department of Printing is also located in the Operations Building.

The New Music Building (un-named at present) erected in 1968, is a modern, sound-treated air-conditioned brick and glass structure designed to house the Department of Music with a modest amount of space allocated to the area of

Art. The building contains administrative areas, a modern music appreciation center, spacious band room with adjoining areas for instrumental instruction, repair, and storage, practice rooms (31), choir room, and recital hall seating 226, several large classrooms, and closed circuit television facilities.

The New Men's Residence Hall, erected in 1968, is located on the southeastern part of the campus. It is a modern seven-story building, air-conditioned and fire-proof. This building is part of the Men's Residence Center Complex.

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 an interest inventory. The tests are scored and processed in the University Testing Bureau, and the results for each student are reported on an individual profile chart showing the student's percentile rank on each test. The student's adviser uses the profile chart as a basis for educational guidance.

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 exceptional abilities. The purposes of the program are:

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

Freshmen scoring well in English on the American College Test (ACT) are invited to participate in the Honors Program. Honors courses for freshmen are: Art, Biology, English, History, Music, Social Studies, and Colloquium.

Sophomore-level honors courses are: Foundations of Education, History, Human Development, Psychology of Learning, Social Studies, World Literature, and Colloquium.

Junior-level honors courses are Curriculum Development and Colloquium.

Senior-level courses are Colloquium and Senior Thesis.

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

CONDUCT

IT is expected that students live up to the highest ideals of womanhood and manhood. It is also expected that every student will be diligent in study, prompt and regular in meeting class assignments and all other responsibilities with the University.

A detailed statement of University regulations concerning conduct and procedures for handling student violations are contained in the *Student Handbook*.

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, The Graduate Residence Center, and Edna R. Hankal Hall; and for men in the new Lena B. Watson Men's Residence Center (two buildings), the New Men's Residence Hall, and Clement 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 are 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 "meal tickets" 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.

THE COUNSELING CENTER

THE University has established a Counseling Center as another service for students. The Center is designed to help each student obtain the maximum benefit from his educational experiences.

The staff of the Counseling Center is prepared to help students in solving problems of educational, vocational, and personal planning and adjustment. All counseling interviews are *confidential.*

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. Cutural, social and recreational activities are sponsored, particularly by the Lyceum, Social and Athletic Committees, the Student Council, 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 semi-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 oustanding 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.

Hepermots. For Health, Physical Education and Recreation majors.

Tennessee State University Chapter of the American Home Economics Association. For Home Economics majors.

Industrial Arts Club. For Industrial Education majors.

Institute of Electrical and Electronics 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.

Phi Beta Lambda Fraternity. For Business Administration 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 National Education Association. For Education 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.

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 and under Associate Women Students (AWS). 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.

Laboratory Players. Open to all students, under direction of Speech and Drama majors.

Tennessee State Debate Society. Open to all students.

TSU Players' Guild. Open to all students.

Musical Organizations

Musical organizations at the University include:

Concert Singers. For Music majors.

University Choir. Open to all students.

String Ensemble. Open to all students and faculty members.

University Marching and Concert Bands. Open to students of Music.

Chapel Choir. Open to all 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 Financial 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.

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

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

Sigmi 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

AN increasing number of scholarships are granted each year to students at Tennessee State University. The scholarships differ greatly in their specifications — some stress high academic achievement, while others place emphasis on such matters as financial need, potential in a certain field, urban or rural residence, etc. The scholarship program is administered through the SCHOLARSHIP COMMITTEE. A Student desiring additional information about scholarships should address his inquiries to THE DEAN OF STUDENT AFFAIRS, giving his scholastic average, his field of study interest, and an estimate of his financial needs.

In the immediate past years the following kinds of scholarships have been awarded:

School of Engineering in amounts from $250 to $1000 based on scholarship and financial need—Western Electric; Standard Oil (Calif.); Humble Oil; Bethlehem Steel; Gulf Oil; American Society for Engineering Education; Union Carbide; General Electric; Bendix Corporation; Dupont; Celanese Corporation.

University wide: in amounts from $250 to $2000 based on scholarship and financial need—General Motors; Alcoa; Greyhound Lines; Kroger; Allied Chemical.

School of Agriculture and Home Economics; based on residence, scholarship and financial need — Sears Roebuck ($600); Rehabilitation Corp. ($900).

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 3.00 (B) or above in all subjects and who pursue a minimum of 12 quarter credit hours in the regular curriculum shall be placed on the University Honor Roll for that quarter.

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.

University Work Scholarships are awarded: (1) annually to graduates of Tennessee high schools having a scholastic rank in the upper ten percent of their class, (2) to students in residence for three or more quarters with a minimum cumulative average of 3.5 or with a quarter average of 4.00. These scholarships are awarded only during the regular academic year.

FINANCIAL AID

TENNESSEE State University participates in the College Scholarship Service (CSS) of the College Entrance Examination Board. Participants in CSS subscribe to the principle that the amount of financial aid granted a student should be based upon financial need. The CSS assists colleges and universities and other agencies in determining the Student's need for financial assistance. Entering students seeking financial assistance are required to submit a copy of the Parents' Confidential Statement (PSC) form to the College Scholarship Service designating Tennessee State University, as one of the recipients. This form should be received by the University by July 15. The PCS form may be obtained from a secondary school, in The Dean of Students' Office of the University, or the College Scholarship Service, P. O. Box 176, Princeton, New Jersey 08540 or P. O. Box 1025, Berkeley, California 94704.

NATIONAL DEFENSE STUDENT LOAN

TENNESSEE 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.

CAREER PLANNING AND PLACEMENT SERVICE

THE Career Planning and Placement Service 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 Service 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 Service which is located in Room 220, Student Union. The services of the Placement Service are free to employers, students, and alumni of the University.

OFFICE FOR DEVELOPMENT AND PLANNING

The development program consists of (1) alumni affairs, (2) public relations, (3) fund raising, (4) long-range planning, and (5) special projects. The purpose of the office is to assist the administration in interpreting the role and mission of the institution to the public, and to assist the faculty in securing funds needed for special programs.

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 and the Bureau of Public Relations. 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.

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

Application Fee

AN application fee of $5.00 is charged for processing all applications for admission and readmission to the University. A money order or certified check for $5.00 (payable to Tennessee State University) must accompany the application.

Quarterly Fees

Tuition:

Residents of Tennessee	$00.00
Non-residents of Tennessee	$160.00

Composite Fee

Undergraduate students	75.00
Graduate students	85.00
Student Services Fee	9.75
Board (in cafeteria)	133.50

Monthly and Quarterly Fees

Building	*Quarter Rates Per Student*
New Men's Residences and Women's Residence Center	$ 96.00
Graduate Residence Center (women)	105.00
Hale, Clement, and Hankal Halls	86.00

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

Fees For Part-Time Students

Undergraduate (Less than 12 hours)

Residents of Tennessee (per credit hour)	$ 7.00
Non-residents of Tennessee (per credit hour)	$21.00
Student Service Fee (per quarter)	$ 1.00

Graduate (Less than 9 hours)

Residents of Tennessee (per credit hour)	$ 9.00
Non-residents of Tennessee (per credit hour)	$27.00
Student Service Fee (per quarter)	$ 1.00

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 $160.00 per quarter.

Composite Fees: All undergraduate students are required to pay $75.00 per quarter for composite fees. Graduate students pay $85.00 per quarter for this fee.

Student Services Fee: All students are required to pay $9.75 per quarter for student services.

Fees are subject to change without notice.

Payment of Fees

All fees listed in the schedule are quoted on a quarterly (12 weeks) basis. The quarterly fees are due and payable in full upon registration. A student is not duly registered until he has met the financial requirements of the Business Office. A student who is found to be not duly registered may complete registration only if the last day for payment of fees has not expired.

In addition to the quarterly fees, approximately $50 per quarter should be allowed for books and supplies. Books and supplies can be purchased at the University Bookstore located in the Student Union.

CAMPUS UNDERGRADUATE STUDENTS PER QUARTER

	TENNESSEE STUDENTS			OUT-OF-STATE STUDENTS		
	Watson I Watson II Watson III WRC	*GRC*	*Clement Hale Hankal*	*Watson I Watson II Watson III WRC*	*GRC*	*Clement Hale Hankal*
Tuition	$ None	$ None	$ None	$160.00	$160.00	$160.00
Composite Fee	75.00	75.00	75.00	75.00	75.00	75.00
Student Services Fee	9.75	9.75	9.75	9.75	9.75	9.75
Board	133.50	133.50	133.50	133.50	133.50	133.50
Room Rent	96.00	105.00	86.00	96.00	105.00	86.00
	$314.25	$323.25	$304.25	$474.25	$483.25	$464.25

CAMPUS UNDERGRADUATE STUDENTS MAKING MINIMUM PAYMENTS*

	Watson I Watson II Watson III WRC	*GRC*	*Clement Hale Hankal*	*Watson I Watson II Watson III WRC*	*GRC*	*Clement Hale Hankal*
Tuition	$ None	$ None	$ None	$160.00	$160.00	$160.00
Composite	75.00	75.00	75.00	75.00	75.00	75.00
Student Services Fee	9.75	9.75	9.75	9.75	9.75	9.75
Board	44.50	44.50	44.50	44.50	44.50	44.50
Room Rent	96.00	105.00	86.00	96.00	105.00	86.00
	$225.25	$234.25	$215.25	$385.25	$394.25	$375.25

OFF-CAMPUS STUDENTS

	TENNESSEE STUDENTS		OUT-OF-STATE STUDENTS	
	Undergraduate	*Graduate*	*Undergraduate*	*Graduate*
Tuition	$ None	$ None	$160.00	$160.00
Composite Fee	75.00	85.00	75.00	85.00
Student Services Fee	9.75	9.75	9.75	9.75
	$84.75	$94.75	$244.75	$254.75

Off campus students may purchase meal tickets at the Dining Hall for $44.50 per month.

Fees are subject to change without notice.

* $44.50 due before meal card issuing dates for October and November for first quarter; $44.50 due before meal card issuing dates for January and February for second quarter and $44.50 due before meal card issuing dates for April and May for third quarter.

ROOM AND BOARD

DORMITORIES will open for occupancy the day before registration. All students assigned rooms in the University dormitories will be required to pay the quarterly room rent and take meals in the cafeteria. Charges for room and board are made by the quarter and are payable at the beginning of the quarter. A student may pay board charges in three installments of $44.50 each, the first day of official registration and the first day of the second and third months of the quarter.

While the University will cooperate fully with a student who is without possession of his meal card, it cannot assume responsibility for a misplaced, lost or stolen meal card. A charge will be made for replacement of such card on a pro-rata cost basis for the month.

Board charges become official only when a student has completed financial registration. A student must pay cash for meals prior to official registration. Boarding students who come earlier or remain later than the boarding period are expected to use meal service on a cash-per-meal basis, since the rate for board does not include meals at such times.

Dormitories and the cafeteria will not be open during the Christmas recess. When the University is not in session, special permission of University authorities is required for dormitory occupancy. THE LAST MEAL BEFORE CHRISTMAS HOLIDAYS AND VACATION PERIODS WILL BE SERVED IN THE CAFETERIA AT NOON ON THE LAST DAY OF CLASSES. The University reserves the right to close the dormitories and cafeteria during all holidays and vacations or between quarters.

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 State University.

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 of ($5.00) will be assessed beginning the first day after the close of regular registration and will increase $5.00 per day thereafter through the last day for late registration.

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 $18.50 is charged for binding masters theses.

Other Special Fees

ACT Test	$6.00
Graduate Record	10.00
Duplicate I.D. Card	2.00
Transcript	1.00
Late Examination or Removal of Incomplete	2.00
Automobile Registration (per quarter)	1.50
(per year)	5.00
GED Test	5.00
Graduate Oral (not enrolled)	15.00
Lost Registration Material	5.00
Bad Check	2.00
Application (including readmission)	5.00
Diploma	15.00

FINANCIAL REGULATIONS

A student will not be permitted to register for the new quarter or remain in dormitory residence in any quarter if his financial obligations are not satisfactorily met.

No student will be given a diploma until all financial obligations are paid in full.

Transcripts are sent out only after all financial obligations to the University have been satisfied.

REFUND OF FEES

If a student withdraws within two weeks after the beginning of classes for the quarter, a refund will be made of 80% of the fees. Each week thereafter, the amount will be reduced 20%. For refund purposes the date of withdrawal shall be the date of the filing of a request for withdrawal with the Registrar. The diploma fee is not refunded. No refund of rent, tuition or fees will be granted to students who are dismissed or suspended.

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.

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 an application is processed. 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, test scores, transcripts and medical certificate forms for admission to the University are as follows:

Fall Quarter.....September 1, 1970
Winter Quarter.....December 7, 1970
Spring Quarter.....March 8, 1971

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. All required data must be filed in the Office of Admissions and Records for consideration for admission.
6. 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: American College Testing Program, Iowa City, Iowa, or to the Director of Testing at the University.

   For regular admission, residents of Tennessee must attain a minimum composite score of 12 on the American College Tests or have a minimum grade point average of 2.25 on the high school record (4.00 scale). Residents who score below 12 will be accepted conditionally, and will be limited to a maximum of 12 credit hours per quarter for the first three quarters.

   Non-residents of Tennessee must attain a minimum composite score of 16 on the American College Test or have a minimum grade point average of 2.50 on the high school record, based upon a 4.00 scale.
7. 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.
8. 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.

9. 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.

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. (Sixteen (16) units from a 4 yr. high school and twelve (12) units from a 3 yr. 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.

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. An average score of 45, with no score on a single test less than 35 is required.

This regulation does not apply to applicants from foreign countries.

SCHOOL OF ENGINEERING

Admission Criteria—

IN order to place sufficient emphasis on English, mathematics, physics and chemistry for normal progress in engineering, high school preparation should include: English, 4 units; Algebra, 2 units; Plane and Solid Geometry, 1½ units; Trigonometry ½ unit; Physics, 1 unit; Chemistry, 1 unit; Social Sciences, 2 units; and Electives, 4 units.

High School students who are deficient in one or more of the preparatory engineering subjects may be admitted conditionally, but their competency must be established by their scores on the American College Tests and the successful completion of the deficient courses by the time they have earned 50 quarter hours.

The minimum acceptable ACT score for entering engineering students is determined from a formula that, based on the high school average, predicts success in engineering. Based on this prediction formula a table has been prepared showing the range within which acceptable ACT score and high school average might fall:

Minimum Cumulative ACT Score of 17 and High School Average of 3.17

Minimum High School Average of 1.92 (out of 4) and ACT Score of 27

ADMISSION WITH ADVANCED STANDING FROM ACCREDITED INSTITUTIONS

Students who have attended other accredited colleges or universities may apply for admission to Tennessee 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 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 State University provided that:
   (1) Non-residents of Tennessee have a minimum cumulative average of "C" or 2.00 and are in good standing with the institution from which they transfer.
   (2) Residents of Tennessee have a minimum cumulative average of "C" or 2.00 and are in good standing with the institution from which they transfer.

   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 State Community Colleges

Credit earned by students attending community colleges of Tennessee will be accepted toward degree programs on the same basis as work taken on the campus of Tennessee State University.

Students who have obtained an associate degree in a pre-baccalaureate program at a community college of Tennessee, can transfer to the same type program at Tennessee State University with credit for having met the lower division requirements for that degree.

Admission with Advanced Standing from Non-Accredited Colleges

Students who desire to enter Tennessee 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 State University will be granted as:
   1. Full credit if work at Tennessee State University is 3.00 or above.
   2. Three-fourths credit if work at Tennessee State University is below 3.00 but not less than 2.50.
   3. Half credit if work at Tennessee State University is below 2.50 but not less than 2.00.
   4. No credit if work at Tennessee 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 studentts 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. Reentrance 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 41) 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 in the Graduate School Section of this catalogue.

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 first day after the close of regular registration and will increase $5.00 per day thereafter through the last day for late 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.

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 Student Health Service. 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 three 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.

Freshman Assembly

The Freshman Assembly is designed to provide entering freshmen at Tennessee State University with a series of group experiences that will assist them in identifying with higher education and subscribing to its requirements at the University. More, specifically, the Freshman Assembly will provide insight into the nature of higher education and how to develop the desirable habits, knowledges, skills, appreciations and other characteristics of an educated person. Each freshman must attend the Assembly once each week during his first year at the University.

Lectures, panel discussions, forums, films, field trips and resource persons will be employed to diversify the program. The Assembly will be centered around such topics as: Students Values, Student Responsibility, the Educated Man, Developing Appreciations and Developing a Philosophy for Living.

CLASS LOADS

Normal and Minimum Class Loads: The normal class load for a full time undergraduate student is 18 credit hours per quarter, 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 and the Major Advisor. 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.

Probationary Student Class Loads: A student who incurs scholarship probation in any quarter (see scholarship standards, page 45) will be allowed to carry a maximum of 15 or a minimum of 12 quarter hours.

Adding Courses: A student may add courses within one week 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: After First Three Weeks. If a course is dropped after the first three weeks of the quarter (first week, if a double or triple course), the grade of F shall automatically be assigned, except upon written certification by the adviser that further attendance in the class would be detrimental to the student's health or has been made impossible by circumstances beyond the student's control. In the event of such certification the student shall receive the grade of WP (signifying passing at the time of withdrawal) or the grade of F (signifying failure) as indicated by the instructor. If the adviser desires confirmation of the illness of the student, this confirmation may be obtained through the Office of the Dean of Student Affairs.

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 discontinued, and the Dean of Admissions. The student is then referred to his new major advisor through the Counseling Center. 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 by the Business Manager. This must be done by the *second* 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."

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

Regular and punctual attendance of all courses taken for credit is expected of each student. Course requirements, including tests and examinations, must be completed in order to secure maximum ratings consonant with student performance. Any concessions, such as permission to take make-up examinations, will be affected by irregular attendance.

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.

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.

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
"WP" (Withdrew Passing) ..... 0 quality points per quarter hour
"WF" (Withdrew Failing) ..... 0 quality points per quarter hour
"S" (Satisfactory in non-cedit courses) ..... 0 quality point per quarter hour
"U" (Unsatisfactory in non-credit courses or non-attendance in credit courses) .....0 quality point per credit 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: (1) gives unsatisfactory performance in a non-credit course or (2) never attends a credit course for which he registered.

"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 Admissions and Records.

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 Business Manager'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.

Grades of "F" received in a course after the second repeat of the course will be used in computing the average of a student who must repeat a course more than twice.

Repeating University Tests: Students who fail to make a satisfactory score on required tests, such as the *Sophomore Examination, The Essential High School Content Battery, The Metropolitan Achievement Tests,* and *The Teacher Education Examination,* may not repeat a test more than two times to secure a satisfactory score. Any score earned after taking a test beyond the third time will be invalid.

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 is on probation cannot carry more than 15.0 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. Suspensions are enforced once per year, at the end of the Spring Quarter.

The student who has *not* previously been suspended for low scholarship will be placed on probation for the next quarter in residence when his cumulative average is below the minimum for his classification. (Probation I) For the second successive quarter in which a student's cumulative average is below the minimum, the student's probation continues for another quarter. (Probation II) For the third successive quarter in which a student's cumulative average is below the minimum, the student will be suspended for one quarter. (Probation III) Suspensions are enforced once per year, at the end of the Spring Quarter.

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. Upon return to the university when suspended for low scholarship, the student must maintain a minimum quarterly average of 2.00 until he is removed from probation. 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 Spring Quarter

when he fails to do either of the above.

The Summer Session will not be counted as a period of academic suspension. A student who is suspended for low scholarship at the end of the Spring Quarter will not be permitted to re-enter the University until the Winter Quarter.

It is the student's responsibility to ascertain his academic status each quarter.

Required Minimum Cumulative Grade Point Average

At the end of the first, second, or third quarters, a student whose average is less than 1.60 will be placed on probation.

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

At the end of the seventh quarter and succeeding quarters, a student whose average is less than 2.00 will be placed on probation.

NORMAL PROGRESS

A full time student who is not making normal progress toward completing degree requirements may be dismissed at the end of any quarter. Normal progress is defined as follows: A minimum of 12 earned hours per quarter or 36 earned hours per academic year with matriculation in courses by sequence and/or year as prescribed in the students' curriculum. Retention standards as outlined in the section on "Scholastic Standards and Probation" also apply.

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.

Issuance of Transcripts

At the beginning of the junior year a 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.

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 Schoool.

Definition of a Quarter Hour

A quarter hour: One hour of recitation once a week for ten to 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).

Students withdrawing from the University on their own application will be awarded a grade of "WP" or "WF" by the instructors of the courses for which they are enrolled, (WP signifying passing at the time of withdrawal and WF signifying failure at the time of withdrawal), based on actual attendance and classroom performance up to the time of withdrawal.

Students withdrawing from the University are responsible for presenting withdrawal forms to their instructors, advisers, etc., as indicated on the forms, and for filing the completed forms in the office of Admissions and Records. A student who fails to file his withdrawal form with the Dean of Admissions and Records will be awarded a grade of F.

The University, acting through the Dean of Admissions, reserves the right to review withdrawal applications and deny readmission to students whose academic records fail to meet scholarship standards or whose records to not show satisfactory academic progress toward a degree.

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.) Male students may take Aerospace Studies courses (100-200 level) in lieu of required physical education activity courses effective with the beginning of the 1968-1969 academic year.
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. A Sophomore Cultural Examination.
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 year or its equivalent (the last forty-eight quarter hours offered for the degree and the last nine months), in residence at the 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 Tests

All students must take the Sophomore tests — Culture and English — the last quarter of their sophomore year. Students will not be permitted to take upper division courses (300-400 level courses) until their records show they have taken the Sophomore tests.

Those students who do not demonstrate satisfactory performance on either of the Sophomore tests will be required to take seminars in the areas of their deficiencies before again being permitted to take the tests. The seminar experience must be continued until satisfactory performance is demonstrated on the tests.

These policies apply both to transfer and re-admitted students. (See other test policies pertaining to students in Teacher Education on page 173)

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 project must be written in the form of a junior thesis of not less than one thousand, nor more than three thousand words. It must be typewritten and organized according to the approved style used by the University.

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.

Students who have participated in the Honors Program will, upon achieving an average of at least 3.25 and meeting other requirements of the Program, be graduated with UNIVERSITY HONORS.

Application for Bachelor's Degree and Senior Status Forms

1. A candidate for a degree must file with the Office of Admissions and Records "Senior Standing Forms" after the completion of 144 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" six 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 hours required by the University and departmental requirements.

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
Elective 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 (3-9 quarters ..... 6 qr. hrs.

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

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, or Applied Music.

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 nine (9) quarters 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 six (6) quarters 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 three (3) qurters in that language, beginning with the junior course.

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 State University. Therefore, persons who are interested in taking courses in Veterinary Medicine should write to President A. P. Torrence, Tennessee State University.

Medical and Dental Training

Under authority of Chapter 82, Public Acts of 1949, the State of Tennessee has entered into an agreement with Meharry Medical College, through the Board of Control for the Southern Regional Council on Education, whereby Meharry Medical College agrees to provide a quota of twelve places in the School of Medicine at the Meharry Medical College and five places in the School of Dentistry at the Meharry Medical College for students from the State of Tennessee to be selected from applicants certified by the Commissioner of Education. Persons who are citizens of the State of 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, IN-SERVICE PERSONNEL, DEPENDENT CHILDREN AND WAR ORPHANS

ON March 3, 1966, the President approved a law passed by Congress to provide educational assistance for veterans who served on active duty with the Armed Forces after January 31, 1955. This law, the Veterans' Readjustment Benefits Act of 1966, is to assist veterans in obtaining education or training for a maximum of 36 months.

Eligibility For Training

A veteran who has served continuously on active duty for a period of at least 181 days; any part of which was after January 31, 1955 and who was discharged or released under conditions other than dishonorable.

Training is available to In-Service Personnel providing a person has served on active duty for at least two years. Sons and daughters of deceased or disabled veterans are also eligible.

The War Orphans Educational Assistance Act was amended on July 4, 1964 so as to provide benefits for sons and daughters of deceased veterans and also to sons and daughters of living veterans who have disabilities which are considered to be total and permanent in nature.

How to Receive Assistance

First write or visit the V. A. Office nearest your place of residence for an application form. It is up to the veteran, dependent child or War Orphan to take this first step. For those who are on active duty in the service and want training, see the base education office.

If the V. A. approves the application, the trainee (veterans and War Orphans) will receive in duplicate a Certificate of Eligibility. Both copies must be presented to the office of Admissions and Records at the time of registration. Delay in submitting these credentials will cause a delay in receiving subsistence checks.

Admission

Final decisions on admission are made by the Dean of Admissions of the University. Veterans must follow the same procedure for admission as all other students (see Method of Admission—Undergraduate). Approved applicants will be notified prior to date of registration.

Payment of Bills and Fees

Regular fees, including tuition, board and room, composite and Student Service, and supplies are paid by veterans on the same basis as other students. Bills must be paid at time of registration.

Veterans and War Orphans are cautioned to have sufficient funds to pay all expenses for registration and enough money to pay expenses for at least two months. Checks are not issued in advance, but at the end of a full month's period.

Class Load

All students who expect to receive educational allowance checks must observe the following class load schedule on the undergraduate level:

Full time for 14 hours or more
¾ time for 10-13 hours
½ time for 7-9 hours
None for less than ½ time (War Orphans only)

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. For further information write to:

Dean of Admissions & Records
Tennessee State University
Nashville, Tennessee 37203

GRADUATE SCHOOL

HUBERT B. CROUCH, Ph.D., Dean

HAZO W. CARTER, Ph.D.,
Assistant to the Dean

Faculty:

Administration, Curriculum and Instruction
- Charity M. Nance, Ph.D., Professor and Head
- Jerry D. Crosby, Ed.D., Professor
- Charles B. Fancher, Ph.D., Professor
- Dorothy W. Draper, Ed.D., Professor
- Joseph A. Payne, Ed.D., Professor
- Malcolm D. Williams, Ed.D., Professor
- Pearl K. Gunter, Ed.D., Professor
- Mildred S. Hurley, Ed.D., Assoc. Prof.
- Darlene L. Hutson, Ed.D., Assoc. Prof.
- Solomon N. Shannon, Ph.D., Assoc. Prof.
- Helen N. Teague, Ed.D., Assoc. Prof.

Agricultural Education
- Gul M. Telwar, Ed.D., Associate Professor and Head
- David A. Hamilton, Ed.D., Professor
- Andrew P. Torrence, Ph.D., Professor

Animal Science
- Roland Norman, Ph.D., Professor and Head
- Ozie L. Adams, Ph.D., Professor
- Andrew B. Bond, Ph.D., Assoc. Prof.
- Early J. Thornton, M.S., Professor
- Theodore Wood, M.S., Assoc. Prof.

Art and Music
- Edward C. Lewis, Ph.D., Professor and Head
- Eddie T. Goins, Ph.D., Professor
- Frank T. Greer, M.S., Professor
- John H. Sharpe, M.S.M., Professor
- Ralph R. Simpson, Ph.D., Professor
- William O. Smith, Ph.D., Professor

Biological Sciences
- Henderson K. Wood, Ph.D., Professor and Head
- James A. Campbell, Ed.D., Assoc. Prof.
- Hubert B. Crouch, Ph.D., Professor
- Rother R. Johnson, Ph.D., Professor
- John M. Mallette, Ph.D., Professor
- Richard A. Hogg, Ph.D., Assoc. Prof.
- Prem S. Kahlon, Ph.D., Assoc. Prof.

Business Administration
- R. Grann Lloyd, Ph.D., Professor and Head
- Lewis R. Holland, M.S., Professor

Business Education
- Cecille E. Crump, Ed.D., Professor and Head
- Augustus Bankhead, M.S., Assoc. Prof.

Chemistry
- Lonnie Haynes, Ph.D., Associate Professor and Head
- David C. Gandy, M.S., Assoc. Prof.
- Rama I. Mani, Ph.D., Assoc. Prof.
- Gilbert Senter, M.S., Assoc. Prof.
- Ruby P. Torrey, Ph.D., Assoc. Prof.

English
- Crawford B. Lindsay, Ph.D., Professor and Head
- Leonard C. Archer, Ph.D., Professor
- Alberta G. Barrett, Ph.D., Professor
- Robert J. Hudson, Ph.D., Professor
- Alma Dunn Jones, M.A., Professor
- Earl L. Sasser, Ph.D., Professor
- McDonald Williams, Ph.D., Professor.

History and Political Science
- Alonzo T. Stephens, Ph.D., Professor and Head
- George L. Davis, Ph.D., Professor
- H. Leon Prather, Ph.D., Professor
- Raleigh A. Wilson, Ph.D., Professor
- Edward N. Cullum, Ed.D., Assoc. Prof.
- Lois C. McDougald, M.A., Assoc. Prof.
- Jerome W. Jones, Ph.D., Assoc Prof.

Health, Physical Education and Recreation
- Edward P. Mitchell, Ph.D., Professor and Head
- Harrison B. Wilson, HS.D., Professor
- Howard W. Green, M.Ed., Assoc. Prof.
- Audrey E. Lewis, Ed.D., Assoc. Prof.
- Frank D. Purnell, Ed.D., Assoc. Prof.

Home Economics
- Mattye C. Flowers, M.S., Professor and Head
- Geraldine B. Fort, M.A., Assoc. Prof.
- Mary H. Greer, M.S., Assist. Prof.

Industrial Education
William V. Harper, Ed.S., Professor and Head

Mathematics and Physics
Sadie C. Gasaway, Ph.D., Professor and Head
Alger V. Boswell, M.A., Professor
Calvin E. King, Ph.D., Professor
Peter C. Lai, Ph.D., Assoc. Prof.

Modern Foreign Languages
Wendolyn Y. Bell, Ph.D., Professor and Head
Virginia S. Nyabongo, Ph.D., Professor
James E. Williams, Ph.D., Assoc. Prof.

Plant Science
Frederick E. Westbrook, Ph.D., Professor and Head
Hazo W. Carter, Ph.D., Professor
Neal McAlphin, Ph.D., Assoc. Prof.

Psychology
Montraville I. Claiborne, Ph.D., Professor and Head
Calvin O. Atchison, Ed.D., Professor
Emma W. Bragg, Ph.D., Professor
Pearl G. Dansby, Ph.D., Professor
Ruby W. Martin, Ed.D., Professor
Frederick J. D. McKinney, Ed.D., Professor
Tommie M. Samkange, Ph.D., Professor
Lucy R. Wilson, Ed.D., Professor
Edna W. Lockert, M.S., Assoc. Prof.
Harold L. Phelps, M.S., Assoc. Prof.

Science Education and Geography
Henry H. Hymes, M.A., Assoc. Professor and Head
Alfred C. Tyler, M.A., Assoc. Prof.
Chris L. Terrill, Ph.D., Assoc. Prof.

Sociology
Sherman N. Webster, Ed.D., Professor and Head
Edna C. Masuoka, Ph.D., Assoc. Prof.

Speech and Drama
Thomas E. Poag, Ph.D., Professor and Head
Jamye C. Williams, Ph.D., Professor
William Cox, M.A., Assoc. Prof.
Robert H. Countess, Ph.D., Assist. Prof.

THE GRADUATE SCHOOL

HISTORY AND PURPOSE

The General Assembly of Tennessee authorized the establishment of graduate study at the Institution in 1941. The first programs were initiated in 1942 under the immediate supervision of the Dean of the College and the Graduate Council. During reorganization in 1951, the Graduate School was established when the Institution was raised to University Status by action of the State Board of Education.

In 1958, the Graduate School was further developed which included new degree requirements and procedures. Between 1942 and 1968, degree programs have increased from two to twenty-four.

The purpose of graduate study at the University is to inspire independent thinking and originality in the search for knowledge and truth. Advanced study is also designed to improve skills in selected professions and for other occupations.

To fulfill these purposes, the University makes available its resources to meet the educational needs of qualified persons who may wish to engage in studies for the master's degree, or for other purposes.

GENERAL REQUIREMENTS FOR ADMISSION

1. The bachelor's degree from an accredited college or university which offers undergraduate programs which are prerequisites for the master's degree programs available at Tennessee A. and I. State University.
2. Official records from all colleges or universities previously attended, indicating the year or years in which the bachelor's or other degrees were awarded.
3. An acceptable score on the Graduate Record Examination as specified by Tennessee A. and I. State University before admission or during the first quarter of graduate study. The latter applies to any student who enrolls in courses which are limited exclusively to graduate students.
4. A formal application for admission to the Graduate School and other documentations as required. Applications for admission to the Graduate School may be obtained from the Dean of the Graduate School at the University.
5. Applicatioon fee of $5.00 upon filing application as indicated for general admission to the University.
6. Receipt of letter from Dean of the Graduate School that the applicant has been admitted for the quarter indicated on the application.
7. Extension request for admission is permitted one quarter beyond the date approved for original admission. Otherwise, the applicant may be required to file a second application.

NOTIFICATION OF ACCEPTANCE OR DENIAL OF ADMISSION

Official admission to the Graduate School requires a written notice from the Graduate Dean.

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.

Unconditional Admission

Unconditional admission to the Graduate School requires:

1. The bachelor's degree from a fully accredited four-year college.
2. At least a 2.00 quality point average (four-point system of grading).*
3. Acceptable scores on the Aptitude and Advanced Test of the Graduate Record Examination.
4. Completion of all undergraduate prerequisites for the selected graduate major and minor concentrations.
5. Good standing in the last institution attended.
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 50 undergraduate credit hours in education.

Conditional Admission

The following three categories of applicants may be considered for admission to the Graduate School:

1. Those who may have a limited number of deficiencies in undergraduate course prerequisites. These deficiencies must be removed before enrollment in graduate courses of the same series.
2. Graduates of full accredited colleges who have not taken the Graduate Record Examination before admission. Applicants for admission to degree programs must take the GRE during the first quarter of enrollment in courses for graduate credit. Others may be allowed up to nine graduate credit hours before taking the GRE.
3. Graduates of recognized four-year colleges not fully accredited when the bachelor's degree was awarded. However, such applicants must (1) present a record of superior scholarship on the undergraduate level, (2) present unqualified recommendations from their undergraduate advisers, and (3) submit an official report from the Educational Testing Service indicating the scores made on the Aptitude and Advanced Tests of the Graduate Record Examination. This University does not administer the Graduate Record Examination to applicants.

Special Admission

Special Non-degree Admission to the Graduate School is granted successful applicants who wish to be enrolled in courses without qualifying for the Master's degree. Such applicants must have met all prerequisites for the courses in which they seek enrollment. These credits may not be counted at any time toward fulfilling requirements for the Master's degree at this University.

Admission to Institutes and Other Special Programs

Applicants for admission to institutes and other special programs which offer graduate credit must follow the regular procedures for admission to the Graduate School in addition to filing applications for acceptance in the special program. Successful applicants must receive the written approval of both the Director of the special program and the Dean of the Graduate School. Applications for admission to the Graduate School should be sent directly to the Dean of the Graduate School on the regular forms provided for that purpose. Students enrolled full-time in special programs may not also be enrolled in regular courses at the same time.

Admission to Teacher Education Programs

Special requirements for admission to teacher education programs include:

1. A standard teaching certificate or qualifications for same.
2. At least 30 undergraduate hours in education with a minimum grade of "B."
3. Recommendation of the major adviser.
4. Approval of the Graduate Teacher Education Committee.

These requirements must be met during the first quarter of graduate enrollment.

Admission to Programs for Principals and Supervisors

In addition to other requirements for admission to teacher education fields, programs for principals and supervisors require:

1. At least one year of successful teaching experience.
2. Undergraduate prerequisites for six to nine hours of graduate credits in the sociological area.
3. Practicum observation in in-service administration.
4. A recommendation from a state or local educational official indicating the applicant's demonstrated qualifications and/or potentials for leadership in school administration.

READMISSION REQUIREMENTS

Graduate students not enrolled in consecutive quarters are required to file application for readmission indicating studies completed during the intervening period and other related information as indicated on the application for readmission. Such students will also be required to pay a fee of $5.00 for processing the readmission applications.

Dormitory Residence

A graduate student who desires to reside in a dormitory at the University should send a $10.00 deposit fee to the Director of Housing at the University, after receiving notification of admission.

Graduate Record Examination

All applicants must achieve a satisfactory score on the Graduate Record Examination which is designed for Graduate School Selection. Temporary admission may be granted a new enrollee to permit him to take the Examination in residence at the University during his first quarter of enrollment.

SELECTION OF OBJECTIVES

The selection of the graduate field of concentration is based upon undergraduate prerequisites. A student may not select a graduate major outside the general field of his undergraduate major, except that he qualifies for the graduate major the same as the department requires for its own undergraduate majors. The graduate major and minor concentrations should be declared at the time of application for admission to the Graduate School.

A student who has completed up to thirty credits in one field may not change his objective, except by special approval of the curricula chairmen involved and the Graduate Dean.

PROGRAM OF STUDY

In conference with his adviser, each student is required to outline his "Program of Study" for the Master's degree on the appropriate form provided by the department. One copy of this outline, signed by the student and his adviser must be filed with the Graduate Dean during the first quarter of enrollment in the Graduate School.

CHANGES IN PROGRAM OF STUDY

Any changes whatever in the approved "Program of Study" require the written approval of the adviser and the Graduate Dean prior to making any changes. Form G-15 supplied by the Graduate Dean's Office is used for this purpose.

MASTER OF ARTS

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.

Foreign Language Reading Examinations for M.A. Candidates

The examination (in French, German or Spanish) consists of two parts, each to be completed in one hour. The first, of medium difficulty, is to be translated with no aids. For the second translation, of more sophisticated language, a dictionary may be used. Summer I and II.

The examinations are administered during the third week of each quarter, including Summer I and II.

A student should present himself for examination as early as possible during his study for the degree. At the appropriate time he should declare his intent to be examined to the Head of the Department of Modern Foreign Languages, and present to the latter the official forms for the grade report which can be secured from the Office of the Dean of the Graduate School.

MASTER OF ARTS IN 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 pecentile score 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 terminad 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.

MASTER OF SCIENCE

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, except in certain substantiated cases of extreme hardship.

EXTENSION OF CREDITS BEYOND SIX YEARS

Extensions of time for completing course requirements may be allowed because of interruptions in graduate studies due to maternity leave, illness or military service. In case of interruption by illness, the student is required to present to the Graduate Dean a notarized certificate from a fully qualified attending physician indicating (a) the general nature of the illness; (b) duration of the illness: (c) extent of disability, and (d) if employed during illness, limitations on activities required by attending physician. The University reserves the right to consult with the University medical staff for making final decisions on such certificates. In case of interruption because of military service, the student must present evidence that he was either drafted or called back into service while enrolled in the Graduate School, or while in between his regular intervals of enrollment.

In order to receive extension of credits beyond the six year limit, the student must (a) audit all courses for which time extensions are requested; (b) pass a comprehensive examination in each such course; and (c) complete all requirements for the master's degree within five consecutive quarters, including summer terms. If the student fails to achieve satisfactory scores on the courses audited, such credits will not be allowed toward the master's degree. Only those courses successfully audited by Class attendance and examination will be entered on the permanent record as extended credits.

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 fall 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 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.

A student who has once been enrolled as a graduate student at the University, and who wishes to obtain credits elsewhere to fulfill his degree requirements, must obtain written approval of his adviser and the Graduate Dean before taking such courses.

UPPER DIVISION 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.

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 a terminal project. Those who elect the thesis shall enroll in Thesis Writing 512 after admission to candidacy for the degree. Those who elect to write a terminal project shall enroll in Project Writing 602 at least one quarter before graduation. The terminal project shall be written on a subject 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.

PREREQUISITES

The minimum prerequisites for a graduate major are an undergraduate minor or its equivalent, and the recommendation of the curriculum chairman. The undergraduate prerequisites for graduates of other institutions are generally expected to be equivalent in content as work offered at this University on the undergraduate level.

If a student's undergraduate work is deficient as preparation for his major field, he may be permitted to enter the Graduate School and make up his deficiencies concurrently with his graduate work. The student will not receive graduate credit for work completed to eliminate deficiencies.

MAJOR-MINOR PROGRAMS

Most master's degree curricula at the University require a minimum of thirty (30) hours in the major concentration and fifteen (15) quarter hours in a minor. Certain fields in general areas, however, may allow different concentration credits. Majors in all fields of teacher education are required to complete at least 15 quarter credit in some subject matter area outside of teacher education.

ADVISEMENT AND SUPERVISION

The Chairman of each Graduate Curriculum assigns a member of the Graduate Staff of the Department to serve as the Major Adviser of each graduate student in the curricu-

lum. While the Major Adviser gives general supervision to the student's program, it is the primary responsibility of the student to know the rules, standards and requirements as stated in the current University Bulletin, and to observe all regulations and to meet all requirements.

GUIDANCE COMMITTEE

Candidates for the Master of Arts and Master of Science Degrees and the candidates for the Master of Arts in Education who write theses shall have a Guidance Committee of three faculty members, at least two of whom shall be members of the graduate staff of the department. A third member may be a staff member from a closely related department or a specialist in the field of the minor concentration. The Guidance Committee shall give general supervision to the candidate's research and thesis writing. The candidate is expected to confer regularly with all members of his Guidance Committee on the progress of his research and thesis writing.

APPLICATION FOR THE DEGREE

The candidate is required to file application for the degree with the Graduate Dean and pay all fees to the University Finance Office, at least by the beginning of the last quarter of study.

FINAL ORAL EXAMINATION

Near the end of the final quarter of study, each candidate for the Master's degree shall be examined for two hours by a Final Oral Examining Committee. The Committee shall be composed of the Guidance Committee for candidates who have written theses and a guest examiner appointed by the Graduate Dean. The Chairman of the Guidance Committee shall chair the examination, or he may invite the guest examiner to perform that duty.

Candidates who write terminal projects shall be examined by the Major Adviser, who shall serve as Chairman, and two other members of the Graduate Staff of the Department or a closely related department and a guest examiner. The latter three examiners shall be appointed by the Graduate Dean.

The emphasis of the examination shall be on the terminal documents and general information in the candidates' field of concentration.

All final oral examinations shall be held in the Conference Rooms of the Graduate School or arranged elsewhere by the Graduate Dean. Applications for final oral examinations must be filed in the Office of the Graduate Dean at least five days in advance. At least one finished copy of the final document must be filed with the Graduate Dean at least three days in advance.

MASTER'S DEGREE PROGRAMS

At present the University grants three advanced degrees: The Master of Arts (M.A.), the Master of Arts in Education (M.A.Ed.), and the Master of Science (M.S.) as indicated below.

Administration and Supervision	—M.A.Ed.
Agricultural Education	—M.A.Ed.
Animal Science	—M.S.
Biology	—M.A. M.S.
Business Education	—M.A.Ed.
Chemistry	—M.S.
Elementary Education	—M.A.Ed.
English	—M.A.
French	—M.A.
Health and Physical Education	—M.A.Ed.
History	—M.A. M.S.
Home Economics Education	—M.A.Ed.
Guidance and Counseling	M.S.
Music Education	—M.A.Ed. —M.A.
Plant Science	—M.S.
Psychology (Educational)	—M.A.Ed.
Psychology (General)	—M.S.
Sch. Psych. Services	—M.S.
Science Education	—M.A.Ed.
Spanish	—M.A.
Speech and Drama	—M.A. M.S.
Zoology	—M.A. M.S.

Minor (non-degree) programs are also available in the following areas:

Agricultural Economics	Mathematics
Biochemistry	Sociology
Foods and Nutrition	Industrial Education

The requirements for the several masters degree programs are established by the Graduate Council with the concurrence of other involved administrative agencies at the

University. Certain requirements are common to all master degree programs. The common requirements are listed here.

GENERAL REQUIREMENTS FOR THE MASTER'S DEGREE

1. Completion of all prerequisite undergraduate requirements for specific graduate courses before enrollment in the latter courses.
2. Enrollment in a minimum of 45 quarter credit hours which offer graduate credit as indicated in the Graduate Section of the University Bulletin and approved by the Dean of the Graduate School. Certain special programs may require additional credits.
3. An acceptable score on the Graduate Record Examination, at least during the first quarter of graduate enrollment.
4. Admission to Candidacy for the master's degree upon the completion of 15 graduate credit hours in residence at the University with a minimum average of "B" (3.00) with the recommendation of the major adviser, and the approval of the Dean of the Graduate School.
5. Submission of a thesis or project outline with the approval of the candidate's Guidance Committee.
6. File concurrently with the major adviser and Dean of the Graduate School, the quarter of planned graduation including the degree, major, and name as it should appear on the diploma, not later than registration of the last quarter of enrollment.
7. Successfully pass all specific degree and departmental examinations prior to making application for the master's degree.
8. Application for the Master's degree including clearance with the major adviser, the Dean of the Graduate School, the Director of Finance, the Dean of Admissions and the Director of the University Library. This is required at least one month prior to commencement.
9. Recommendation of date for the final oral examination with approvals of the members of the candidate's Guidance Committee and the Dean of the Graduate School.
10. Submit to the Dean of the Graduate School four (4) copies of the thesis or terminal project five days prior to the approved date for the final oral examination.
11. Earn a grade of "B" on the final oral examination and all other recommended decisions in the final document at least (15) days prior to graduation.
12. Participate in Commencement proceedings unless specifically granted approval for absentia award of the degree by the Dean of the Graduate School.

DEGREE REQUIREMENTS IN SPECIFIC MAJOR FIELDS

The Master of Arts Degree

This degree is offered in Biology, English, French, History, Spanish, Speech and Drama, and Zoology. The common prerequisites in these areas include at least thirty (30) undergraduate credits in the field of graduate major, and a minimum of eighteen (18) undergraduate credits in the field of the graduate minor, if minor is elected.

All candidates for this degree are also required to demonstrate a reading knowledge of a foreign language prescribed by the Major Adviser, based upon the nature of the candidate's research.

The Master of Arts in Education Degree

This degree is offered in Administration and Supervision, Agricultural Education, Business Education, Elementary Education, Health and Physical Education, Home Economics Education, Educational Psychology and Science Education.

The special requirements of the Master of Arts in Education degree include: qualifications for an elementary or secondary school teaching certificate; at least 30 undergraduate quarter credit hours with "B" grades are better and a graduate subject matter area outside the field of Education of at least 15 credit hours within the 45 hour requirement.

The Master of Science Degree

This degree is offered in Animal Science, Biology, Chemistry, History, Guidance and Counseling (non-certification), Guidance and Counseling (Elementary Education), Guidance and Counseling (Secondary Education), Plant Science, Psychology (General), School Psychological Services, Speech and Drama, and Zoology.

The requirements for each of these degrees are indicated under description of each program.

COURSES OF STUDY

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

JERRY D. CROSBY, Ed.D., *Graduate Curriculum Chairman*

Required and Elective Courses

Required:	
Education 526	3
Education 502	3
Education 503	3
Education 511	3
Education 512 or 602	3
Education 534	3
Education 564	3
Education 587	3
Psychology 501 or 502	3
Psychology 543	3
Total hours required	30

Electives:
(Select 15 quarter hours)
Education 505
Education 524
Education 546
Education 551
Education 572
Education 573
Education 595
Education 603
Psychology 531
Psychology 532
Psychology 551
Spec. Educ. 467G
Spec. Educ. 471G

CURRICULUM IN ELEMENTARY EDUCATION

DOROTHY DRAPER, Ed D., *Graduate Curriculum Chairman*

Required and Elective Courses

Required:	
Education 511	3
Education 512 or 602	3
Education 526	3
Psychology 501 or 502	3
Psychology 543	3
Sci. Educ. 505	3
Math. 523	3
Total hours required	21

Electives:
(Select 15 quarter hours)
Education 473G
Education 502
Education 514
Education 524
Education 527
Education 529
Education 534
Education 538
Education 546
Education 547
Education 548
Education 562
Education 564
Education 573
Education 587
Psychology 551
Spec. Educ. 467G
Spec. Educ. 471G

Subject Matter Areas for Majors in Graduate Elementary Education

Fifteen hours in a content area are required as a minor for majors in Elementary Education. Education courses may not be included in the content area.

CURRICULUM IN SECONDARY EDUCATION

SOLOMON N. SHANNON, Ph.D., *Graduate Curriculum Chairman*

Required and Elective Courses

Required:		*Electives:*
Education 511	3	(Select 9 quarter hours)
Education 512 or 602	3	Education 473G
Education 525	3	Education 502
Education 526	3	Education 528
Psychology 501 or 502	3	Education 534
Psychology 543	3	Education 573
		Education 587
Total hours required	18	Psychology 532

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

Undergraduate Courses Approved for Graduate Credit

467G—Characteristics and Needs of the Mentally Retarded. (3)
471G—Methods and Materials for Teaching the Mentally Retarded Child. (3)
473G—Audiovisual Aids in Education. (3)
490G—Education of the Disadvantaged. (3)

Graduate Courses

500. *Foundations of Education.* (3) A critical analysis is made of the sociological, psychological, philosophical, and ethical foundations of education.

502. *School Administration.* (3) A general course designed to develop insight into the nautre, scope and development of educational administration in America.

503. *School Supervision.* (3) Designed to develop understandings of basic theories of supervision and supervisory procedures for improving instructional services.

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.

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) A study of fundamental principles of teaching as guides to action.

523. *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 Social Studies.* (3) Designed for students who desire to explore newer practices and materials for the social studies program in elementary schools.

528. *The Junior High School.* (3) Designed for students who are looking forward to securing teaching positions in the junior high school and for inservice 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 Language Arts.* (3) A study of current trends and practices in teaching the language arts.

Ed. 534. *Evaluation of Public School Programs.* (3) Consideration will be given to the use and interpretation of standardized and teacher-made tests and other procedures for appraising individual and group progress. Attention will also be given to the application of criteria in evaluating the total school program.

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.

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.

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.

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.

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. Prerequisite Educ. 502.

562. *Advanced Course in Reading.* (3) A consideration of modern trends in teaching reading.

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.* (3) A review of recent literature and research related to problems of a selected area—administration and supervision, elementary, or secondary.

587. *Curriculum Construction and Practices in Public Schools.* (3) Considers procedures for improving curriculum programs in individual schools.

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.

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.

603. *Team Teaching in the Upper Elementary and Junior High Grades.* (3) Designed for administrators and teachers who desire to explore the methods, procedures, purposes and values of team teaching in the upper elementary and junior high school grades. Special considerations include: organizational patterns, utilization of individual staff members' talents and strengths, cooperative planning, effective use of physical facilities, effective use of community resources and effective use of mass communication media.

Department of Agricultural Education

CURRICULUM IN AGRICULTURAL EDUCATION

GUL. M. TELWAR, Ed.D., *Head, and Graduate Curriculum Chairman.*

The Department offers program of study leading to the degree of Master of Science. Courses offered by the Department are designed to develop further, technical and scientific agriculture combined with education.

The major for the Master's degree shall include a minimum of 15 quarter hours in Agricultural Education, and 15 quarter hours in Agricultural Economics. Additional supporting course work shall be in Economics, Education, Psychology, or other approved subjects appropriate to teaching, extension, and similar educational work.

Research may be conducted in any phase of education related to the broad field of Agriculture.

AGRICULTURAL EDUCATION

AED 501. *Federal Relations to Vocational Education* (3)
AEC. 502. *Education Problems in Programs of Teachers of Vocational Agriculture* (3)
AED 504. *Demonstration Techniques* (3)
AED 506. *Adult Education* (3)
AED 511. *Research Design in Agricultural Education* (3)
AED 512. *Thesis Writing* (3)
AED 521. *Organization and Administration of Vocational Education* (3)
AED 601. *Seminar* (3)

AGRICULTURAL ECONOMICS

AEC 501. *Statistics for Research Workers* (3)
AEC 502. *Policies and Programs in Agricultural Business* (3)
AEC 503. *Farm Planning and Management* (3)
AEC 504. *Economics of Conservation and Resource Development* (3)
AEC 505. *Production Economics* (3)
AEC 506 *Farm Appraisal* (3)

The education core consists of the following courses:

Education 502 (3) School Administration.
Education 511 (3) Methods of Research or Ed. 601. Education Seminar.
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.*

UPPER DIVISION COURSES:

Agricultural Economics 312G—Marketing Methods and Problems (3)
Agricultural Economics 322G—Farmers' Cooperative (3)
Agricultural Economics 401G—Tabular and Graphic Presentation of Data (3)
Agricultural Economics 403G—Agricultural Finance
Agricultural Economics 451-52G—(3-3) Special Problems in Agricultural Economics Research.
Agric. Educ. 401G—(3) *Educational Exhibits.*

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) Deals with federal programs available to assist rural citizens. Emphasis will be placed on the development of proposals for special governmental projects.

502. *Problems in Teaching Vocational Agriculture.* (3) A crititical 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.

503. *Supervised Occupational Experiences in Agriculture.* (3) This course is designed to deal specifically with techniques of supervising student work activities in relation to the in-school vocational agriculture program selected by the student.

504. *Demonstration Techniques.* (3) (Lecture-Demonstration) A comprehensive introduction to the study of techniques in demonstration through visible and audible presentation of material—an effective method of communicating knowledge in a direct and organized procedure.

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 are evaluated.

601. *Seminar.* (3) This course consists of a survey of the current literature and subject matter in the major field. Required for the Master of Arts in Education degree for majors in Agricultural Education.

602. *Project Writing.* (3) This terminal course consists of writing a project centered around some problem in the area of the candidate's major field of concentration.

Department of Animal Science

CURRICULUM IN 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.

Upper Division Courses

Animal Husbandry 401G—Market Milk. (3)
Animal Husbandry 403G—Dairy Farm Operations. (3)
Biochemistry 402-3G—General Biochemistry. (4-4)
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.* (3-3).

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.* (1-1-1) 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.* (3-3) 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)

Department of Music and Art

CURRICULUM IN MUSIC EDUCATION

EDWARD C. LEWIS, JR., *Ph.D.Head*

W. O. SMITH, Ph.D., *Graduate Curriculum Chairman*

Degrees offered:

The Master of Arts in Education and the Master of Science in Education are offered.

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. 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.

In addition to admission requirements set up by the University and/or the Graduate School, the Department requires 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 undergraduate deficiencies to be made up within several quarters of matriculation here.
2. Each student shall pass proficiency examinations in the following areas:
   a. Music Theory
   b. Music history and literature
   c. Conducting
   d. Major and minor performance areas

Degree Requirements

The core graduate requirements in the area of education are specified and listed earlier in the graduate bulletin. In addition to these five courses (15 hours) the Master of Science and Master of Arts programs require the following core in Music Education:

Undergraduate Courses

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

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

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
- Mus 524-Band Pageantry 3
- Mus 527-Supervision and Administration of School Music 3
- Mus 501 or 510-Vocal or Instrumental Methods and Materials 3

Group II-Music Theory Electives
- Mus 532-Advanced Theory 3
- Mus 534-Harmonic Counterpoint 3
- Mus 428G-Physics of Music 3
- Mus 420, 421G-Form and Analysis ..... 3 to 6
- Mus 430G-Orchestration 3
- Mus 433G-Composition 3

Group III-Musicology Electives
- Mus 507-The Symphony 3
- Mus 508-The Opera 3
- Mus 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

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.

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 Centrury 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.

525-526. *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.

Department of Biological Sciences

CURRICULUM IN BIOLOGY

H. K. WOOD, Ph.D., *Head*

JOHN MALLETTE, Ph.D., *Graduate Curriculum Chairman*

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, (2) has passed a preliminary departmental examination, and (3) 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.

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 code 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, Ecology, Genetics, Microbiology, Parasitology and Physiology. Because of 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.

Biology

501-2-3	Biology Seminar	1-1-1
510	Literature and Methods In Research	3
511	Research in Biology	3
512	Thesis Writing	3
521	General Experimental Physiology I	4

522 General Experimental Physiology II 4
534 General Cytology 4
561-2-3 Special Problems in Botany 3-3-3
571 Genetics of Microorganisms 4

Zoology
531 Experimental Embryology 4
542 Advanced Parasitology 4
543 Arthropods and Diseases 4

Upper Division Courses

Zoology
441G Introduction to Parasitology 4
461G Endocrinology 4

Biology
411G Advanced Genetics 4
441G Histology and Microtechnique 4

Botany
411G Introductory Plant Physiology 4
453G Field Botany 4

Microbiology
412G Pathogenic Microorganisms 4

Required Courses

1. Biology 501-2-3 ..... Biology Seminar
2. Biology 510 ..... Literature and Methods in Research
3. Biology 511 ..... Research in Biology
4. Biology 512 ..... Thesis Writing
5. Biology 534 ..... General Cytology
6. Biology 521 ..... General Experimental Physiology I
7. Biology 522 ..... General Experimental Physiology II
8. Zoology 531 ..... Experimental Embryology
9. Zoology 542 ..... Advanced Parasitology
10. Zoology 543 ..... Arthropods and Diseases
11. Zoology 461G ..... Endocrinology

Graduate Courses

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. Physiologic 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.

Department of Business Education

CURRICULUM IN BUSINESS EDUCATION

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

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

Degree Requirements

Required Courses

BED	501-502-503	Improvement of Instruction (3-3)
BED	521	Current Problems in Business Education (3)
BED	522-523	Tests and Measurements and Guidance in Business Education (3)
BED	524	The Administration and Supervision of Business Education (3)
BED	601	Business Education Seminar (3)
BED	602	Project Writing (3)
EDU	511	Methods of Research (3)
EDU	526	Philosophy of Education (3)
PSY	501	Educational Statistics (3)
PSY	543	Advanced Educational Psychology (3)

Elective Courses

Twelve hours in a related field; for example,
English
Social Studies
Library Science
Guidance

Graduate Courses

BE 501. *Improvement of Instruction in Shorthand and Typewriting.* (3) For experienced and prospective teachers of typewriting and shorthand; materials of instruction, methods of developing original materials, lectures, demonstrations, outside readings, and reports.

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, and evaluation.

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

BE 514. *Special Experimental Problems in Business Education.* (3) Designed for students who wish to do a special research problem of classroom nature in addition to the project.

BE 521. *Current Problems in Business Education.* (3) Significant problems as evidenced by the study and evaluation of current literature; understanding of the underlying factors of business education problems.

BE 522. *Tests and Measurements in Business Education.* (3) Study of tests in business 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) Administration and supervisory problems; departmental organization; records; services to administrative officers and to other school departments.

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.

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

Department of Chemistry

CURRICULUM IN CHEMISTRY

LONNIE HAYNES, Ph.D., *Head*

RUBYE P. TORREY, Ph.D., *Graduate Curriculum Chairman*

Departmental Graduate Program

Chemistry is offered as the primary area for the degree of Master of Science. It may also be chosen as a related area for various master's degrees in fields such as biology, biochemistry, and physics.

Fields of Study and Assistantships

Major areas of study are analytical, physical-analytical, and organic. Several teaching assistantships are available each year.

Pre-requisites

A minimum of 54 quarter hours of undergraduate credit in Chemistry is desirable as a basis for graduate work. The 54 hours must include the basic undergraduate courses in general chemistry, quantitative analysis, organic chemistry, and physical chemistry. In addition, the student should have credit in mathematics through integral calculus and one year of physics. Additional courses in physics and mathematics are desirable.

Degree Requirements

The degree of Master of Science in Chemistry represents 1-2 academic years of full-time study beyond an acceptable Bachelor's degree. This plan of study is selected by the student in collaboration with appropriate representative (s) from a department and the dean of the Graduate School.

The plan of study may include a thesis option (30 hours of approved courses plus a laboratory thesis), or a non-thesis option (30 hours of approved courses plus 15 hours of specially designed courses).

Students entering a graduate program in chemistry are required to take classification examinations. These examinations are given in analytical—inorganic—physical, and organic chemistry, and cover subject matter common to a good undergraduate curriculum in chemistry. Competence in a deficient area, as determined by these examinations, must be established by passing either an approved course or special examination in that area within the first two quarters of residence.

Qualifying examinations are given after the successful completion of 30 quarter hours, 18 of which must be approved graduate courses in chemistry.

Required Courses

CHM. 501-502 Advanced Inorganic Chemistry	(3-3)
CHM. 521-522 Advanced Organic Chemistry	(3-3)
CHM. 531-532 Advanced Physical Chemistry	(3-3)

CHM. 541-542	Advanced Analytical Chemistry	(3-3)
CHM. 600	Chemistry Seminar (May be repeated for credit up to 3 hrs.)	(1)
Elective (Chemistry, Mathematics or Physics)		(3)

Elective Courses

CHM. 523	Advanced Organic Chemistry	(3)
CHM. 533	Advanced Physical Chemistry	(3)
CHM. 543	Advanced Analytical Chemistry	(3)
CHM. 536	Chemical Kinetics	(3)
CHM. 525	Advanced Organic Laboratory	(3)
CHM. 620	Special Topics in Organic Chemistry	(3)
CHM. 640	Special Topics in Analytical-Inorganic-Physical Chemistry	(3)
CHM. 644	Chemical Instrumentation	(2-6)

Upper Division Courses

CHM. 421G-422G	Inorganic Chemistry	(3-3)
CHM. 431G-432G	Analytical Chemistry	(3-3)
CHM. 401G	Chemical Bibliography	(3-3)

Graduate Courses

501-502. *Advanced Inorganic Chemistry.* (3-3) Modern Theories of Inorganic Chemistry. Pre-requisite: Chemistry 421-422.

521-522-523. *Advanced Organic Chemistry.* (3-3-3) A critical study of the structural theory of organic Chemistry.

525. *Advanced Organic Laboratory.* (3) A study of molecular structure in organic chemistry through laboratory techniques. Pre-requisite: 462-463-521.

531-532-533. *Advanced Physical Chemistry.* (3-3-3) A broad discussion of the laws of thermodynamics, a systematic survey of classical transport processes, and an introduction to statistical mechanics. Pre-requisite: 481-482-483.

536. *Chemical Kinetics.* (3) Experimental and theoretical considerations of chemical reaction rates and mechanisms. Pre-requisites: 531-532.

512 (A-B-C). *Chemical Research and Thesis Writing.* (5-5-5)

541-542-543. *Advanced Analytical Chemistry.* (3-3-3) A critical study of recent developments of chemical and instrumental methods of analysis. Pre-requisites: Chemistry 431-432.

600. *Chemistry Seminar.* (1) Review and discussion of important current literature in the various areas of chemistry. Students attend the seminar in his major area. May be repeated for credit up to 3 hours.

620. *Special Topics in Organic Chemistry.* (3) Lectures on selected topics of current interest. May be repeated for credit.

640. *Special Topics in Analytical-Inorganic-Physical Chemistry.* (3) Lectures on selected topics of current interest. May be repeated for credit.

644. *Chemical Instrumentation.* (2-6) Principles and characteristics of electrical instruments used in chemical research. Must be preceded by Chemistry 431-432-541-542.

Department of English

CURRICULUM IN ENGLISH

CRAWFORD B. LINDSAY, Ph.D., *Head and Graduate Curriculum Chairman*

Graduate Program

Graduate work in English at Tennessee State University is designed to give the student a rich background in English and American literature, including literature by black authors, and in the nature and principles of growth of the English language, and, also, to provide thorough grounding in literary research. Every effort is made, in the scheduling of classes, to meet the needs of those students and prospective students who are teaching, or are engaged in other occupations, in the immediate area.

Degree Requirements

Graduate students in English may qualify for the degree of Master of Arts only. A Candidate for the Master of Arts degree with a major in English must pass a reading examination in a foreign language administered by the Department of Modern Foreign Languages.

Graduate students in English may do all of their work in English; or they may, if they wish, do a minor in education, in history, in speech and drama, in a foreign language or in some other area.

Graduate students in other departments may, likewise, do a minor in English. Persons doing a minor should confer with representatives of the disciplines concerned to be certain (a) that they are qualified to do graduate work in the areas and (b) that they are selecting those courses which meet the approval of the advisors in both their major and minor fields.

Upper Division Courses

401G	The Metaphysicals	3
411G	Shakespeare	3
412G	Shakespeare	3
421G	The English Novel	3
422G	The American Novel	3
423G	The Continental Novel	3
431G	Milton and Bunyan	
451G	History of the English Language	3
452G	Chaucer	3
454G	Modern English Grammar	3
473G	English Education	3

Graduate Courses

511-512	The English Seminar	3-3
521-522-523	Studies in Nineteenth Century English Literature	3-3-3
531-532-533	Studies in the Development of the Novel in the United States	3-3-3
541	Studies in English Drama	3
542	Studies in English Drama	3
543	Studies in English Drama	3
561-562-563	Studies in Restoration and Eighteenth Century Literature	3-3-3
572	Grammar and Language Institute	3
581-582-583	Studies in American Literature	3-3-3
591-592-593	Studies in Shakespeare	3-3-3
595	Linguistics and the English Language	3
596	Approaches to Literature	3
597	Composition	3

511-512. *The English Seminar.* (3-3) 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 Centrury English Literature.* (3-3-3) 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.* (3-3-3) 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.* (3-3-3) 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.* (3-3-3) Topics vary according to student interest.

591-592-593. *Studies in Shakespeare.* (3-3-3) Topics will vary according to student interest.

595. *Linguistics and the English Language.* (3) Aims to introduce the participant to the idea or concept of language as a field a study and to the assumptions and methods

of linguistics, to furnish the participant with some indispensable knowledge about the English language, to encourage the participant to undertake further study and to guide him in pursuing it. The work of the course is organized around the following major topics: Introduction to Language Study, Phonology, Grammar, Varieties of English Language and Usage, Historical Change in the English Language. Emphasis will be placed upon the nature of the three current grammars of English—traditional, structural, and generative, the last receiving chief emphasis.

596. *Approaches to Literature.* (3) Is designed to increase the ability of the individual teacher to deal with literary works himself and to teach them to students. Works studied will be drawn from the major genres: poetry, lyric and narrative; the short story; the novel; and the drama. The approach will be analytical, the particular details of which will depend upon the individual work and the genre represented. In dealing with lyric poetry, for example, the instructor will give attention to items such as form, rhythm, sound pattern, imagery, mode, idea. Written assignments will be required which will determine the student's ability to apply approaches discussed in class. It is expected that some of these assignments will be carried out through integration with the composition course.

597. *Composition.* (3) Aims in general to improve composition teaching in the secondary school. More specifically, the course is designed to give opportunity for experiences that will help the teachers to become better writers themselves and better critics of writing, both student and professional, mainly through analysis of and exercises in expository prose. Conduct of the course will focus primarily on the art of writing as a symbolic ordering of experience deliberately structured by the writer's need to establish an appropriate "voice." Along with readings in rhetorical theory and illustrations of this theory by close analysis of prose essays, primarily modern, at least one paper of 500 to 750 words will be assigned each week in addition to occasional exercises. Some of the writing will be done as part of the regular class period and some of the topics will be assigned in conjunction with the courses in language and in literature.

Department of Health, Physical Education and Recreation

CURRICULUM IN HEALTH AND PHYSICAL EDUCATION

E. PRESTON MITCHELL, III, Ph.D., *Head and Graduate Curriculum Chairman*

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

The Master of Arts in Education

Aside from a course program of 45 credit hours in the curriculum, competence in pure and applied research in health and physical education is regarded as one of the fundamental requirements for the attainment of this degree.

Requirements: Applicants for graduate majors in the curriculum must have completed a minimum of 30 undergraduate quarter credit hours in the combined field and 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):

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 Student 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. Rhythms
4. Aquatics
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—Educational 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 (24 quarter hour 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
Health and Physical Education 510—Research Seminar 3
Physical Education 511—Methods of Instruction and Supervision in Physical Education 3
Physical Education 512—Thesis Writing 3
Physical Education 513—Tests and Measurements in Physical Education.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 413G—Program Planning 3
Physical Education 481G—Organization and Administration of Intramural Activities 3
Psychology 551—Emotional, Social and Mental Growth of Children....3
Special Education 467G—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 thinking, 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.

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-four (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.

Graduate Courses Required for a 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)

Upper Division Courses

PE 334G Physiology of Exercise (3)
PE 412G Organization and Administration of Recreation (3)
PE 413G Program Planning (3)
PE 414G Organization and Administration of Camping (3)
PE 463G Dance Seminar (3)
PE 481G Organization and Administration of Intramurals (3)
PE 483G History of Physical Education (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 or its equivalent.)

Health and Physical Education 510. *Research Seminar.* (3) The current literature in health and physical education is reviewed in this course.

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 physical education. Credit is given upon completion of the research problem and the submitting of the thesis. (Required of all graduate majors desirous of doing research in health education or physical education—Prerequisites are Education 511—*Elements of Research* and Psychology 501, or 502—Statistics.)

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 and 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, gradation 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 recrea-

tional programs such as leadership, areas and facilities, program features and inclusiveness, recruiting of recreation workers and training programs for voluntary workers covered in the content of the course. Opportunities are afforded students to experience actual recreation work and responsibility, as well as opportunities to organize and lead recreational activities. (Required of all graduate majors in the Department.)

Department of History and Political Science

CURRICULUM IN HISTORY

ALONZO T. STEPHENS, Ph.D., *Department Head and Graduate Curriculum Chairman*

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 chosen 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.

Options:

Students may select 9 to 18 quarter hours of non-western history in minor programs—Far East, North Africa and Middle East, or Latin America; or 9 quarter hours of Russian history, American Diplomatic, Economic, or Constitutional history of Seminar in World Civilization.

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.

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

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.* (3-3-3) An intensive study of selected problems in the history of the United Sttaes 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.* (3-3-3) The study of problems of regions or sections in the United States with special emphasis on the South and West.

531-2. *Recent United States History.* (3-3) The study of contemporary problems 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.

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.* (3-3-3) 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.* (3-3-3) 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.* (3-3-3) 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.

Department of Home Economics

CURRICULUM IN HOME ECONOMICS EDUCATION

MATTYE C. FLOWERS, M.S., *Head*

MARY H. GREER, M.S., *Graduate Curriculum Acting Chairman*

The program is designed for teachers and prospective teachers of home economics who wish to increase their competence in teaching. Applicants for the degree of Master of Arts in Home Economics Education must have completed an approved undergraduate curriculum in home economics and meet the admission requirements of the graduate school.

A minimum of forty-five (45) quarter hours of work at the graduate level and a thesis are required. The program consists of thirty (30) hours in Education, including Home Economics Education and the Education Core, and fifteen (15) hours of subject matter courses selected from two or more areas of home economics.

Upper Division Courses

CDF	464G	Later Periods of Childhood	(3)
CDF	465G	Survey of Development Throughout Adulthood	(3)
C&T	413G	Dress Designing and Draping	(3)
FDS-NTR	433G	Child Nutrition	(3)

REQUIRED COURSES

PSY 501	Statistics	(3)
or		or
AEC 502	Advanced Statistics in Education and Psychology	(3)
ED 511	Research Methods	(3)
ED 526	Philosophy of Education	(3)
PSY 543	Advanced Educational Psychology	(3)
HED 502	Evaluation in Home Economics	(3)
HED 512	Thesis	(3)
HED 521	The Teaching of Home Economics	(3)
AED 521	Administration and Organization of Vocational Education	(3)

Electives

AED 501	Federal Relations to Vocational Education	(3)
HED 501	Current Trends in Home Economics	(3)
HED 505	Seminar in Home Economics	(3)

Subject Matter Courses

FDS-NTR 531	Community Nutrition	(3)
FDS-NTR 581	Problems in Foods and Nutrition	(3)
C&T 510	Special Problems in Clothing and Textiles	(3)
C&T 522	Demonstration Techniques in Clothing and Textiles	(3)
C&T 523	Newer Trends in Clothing and Textiles	(3)
HE 519	Economic Problems and Welfare of Families	(3)

Graduate Courses in Home Economics Education

501. *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.

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.

505. *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.

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.

512. *Thesis Writing.* (3) Credit for the approved Master's Thesis.

521. *The Teaching of Home Economics.* (3) A course designed for graduate students with teaching experience. Consideration will be given to the place of specific techniques and materials in the teaching of home economics at the secondary school and college levels. Opportunity is provided for experimentation with teaching materials.

Graduate Courses in Subject Matter Area

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

519. *Economic Problems and Welfare of Families.* (3) A study of some of the factors releted to the changes which have taken place in the economic welfare of families in this country. Emphasis will be placed on distribution, national income, prices and specialization as they affect the family income.

522. *Demonstration Techniques in Clothing and Textiles.* (3) Provides for the practice of planning and giving demonstrations. Display materials for exhibits, bulletin boards and publicity are planned and arranged. One lecture, two laboratory periods.

523. *Newer Trends in Clothing and Textiles.* (3) A study is made of current research reports in the field. Special emphasis is given to the lesser known facets of the field: socio-psychological, technological and anthropological aspects of clothing and textiles. Two lectures, one laboratory period.

Department of Industrial Education

CURRICULUM IN INDUSTRIAL EDUCATION (Non-degree)

WILLIAM V. HARPER, Ed.S., *Head and Graduate Curriculum Chairman*

Qualified graduate students may select a maximum of (9) graduate credit hours from the following courses:

IED 453G	Industrial Arts Design	(3)
IED 412G-413G	Job Analysis	(3-3)
IED 431G-432G	Curriculum Building in Trade and Industrial Subjects	(3-3)

Graduate Courses

IED 521-22-23	Special Problems in Industrial Ed.	(3-3-3)
IED 531	History and Vocational Industrial Education	(3)
IED 532	Industry-Education Relations	(3)
IED 533	General Shop	(3)

IED 541	Improving Teachers In-Service	(3)
IED 542	Advisory Committees and Apprentice Training	(3)
IED 543	Vocational School Administration and Management	(3)

Graduate Courses

521-22-23. *Special Problems in Industrial Education.* (9) Study of approved problems on an individual research basis under the direction of major professor. Typical problems —development of detailed instructional material, community surveys, apprentice training manuals, etc.

531. *History of Vocational Industrial Education.* (3) Study of the chronological development of vocational education in the United States. Studies will be made of the personalities, points of view, and contributions of outstanding Industrial Education leaders.

532. *Industry—Education Relations.* (3) This course deals with the relationship between the educational programs of industry and industrial education program of schools. A study is made of the development of modern industry and labor unions and their influence upon industrial school programs.

533. *General Shop.* (3) Objectives, organization and administration of general shop programs.

541. *Improving Teachers In-Service.* (3) A study on seminar basis of problems of improving teachers in-service; problems of co-ordination of part-time and apprentice training program.

542. *Advisory Committees and Apprentice Training.* (3) The organization functions of advisory committees and the organization of course outlines for apprentices and students in diversified occupations programs.

543. *Vocational School Administration and Management.* (3) The preparation and use of records, reports and rating sheets. Planning shop layouts for providing equipment and maintenance for vocational classes.

Department of Physics and Mathematics (Non-degree)

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

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

MATHEMATICS

471G. Computer Assisted Instruction for Mathematics Teachers. (3)

472G. Numerical Analysis. (3)

511-512. *Modern College Geometry.* (3-3) 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)

513. *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; Differentition and Integration. Prerequisite: Mathematics 511-512.

514-5-6. *Modern Algebra.* (3-3-3) 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)

534-535. *Analytic Geometry and Calculus for Teachers.* (3-3) 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.)

536. *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. *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.

605. *Modern Mathematical Concepts for Teachers I.* (3) This course is designed for in-service teachers. It will consist of selected topics from set theory, deductive logic, numeration, induction, and the fundamental operations and algorithms of arithmetic.

Prerequisite: consent of the instructor.

606. *Modern Mathematical Concepts for Teachers II.* (3) A continuation of Mathematics 605. The topics include intuitive geometry, fractions, mathematical models and problem solving, the real number system, and coordinate geometry.

Prerequisite: consent of the instructor.

Department of Modern Foreign Languages

CURRICULA IN FRENCH AND SPANISH

WENDOLYN Y. BELL, Ph.D., *Professor, Head, and Graduate Curriculum Chairman*

The departmental graduate studies seek to meet the needs of those who desire to become better trained teachers, to prepare for advanced degrees, or to satisfy graduate degree requirements for other departments of the University.

The department offers a Master of Arts degree in French or Spanish.

In addition to general requirements for admission to graduate study, students desiring to pursue the master's degree should have completed an undergraduate major or its equivalent in the area of concentration. Otherwise, additional undergraduate work may be required to enable the student to overcome deficiencies.

Majors may elect a minimum of 30 hours in French or Spanish. Although it is desirable for a French major to minor in Spanish and a Spanish major to minor in French, enrollees may choose to minor in English, History, or some other content area.

For a minor in French or Spanish, a minimum of 15 hours must be completed in the target language. Students in Secondary Education are required to complete 18 hours in French or Spanish.

Upper Division

French or Spanish 451-2-3G	(3-3-3)	Modern Literature
French or Spanish 461-2-3G	(3-3-3)	Contemporary Literature
French or Spanish 480G	(3)	Senior Seminar

GRADUATE COURSES IN FRENCH

500. *Reading French.* (0) An intensive course for graduate students who must pass a foreign language reading examination.

501-2. *Old French.* (3-3) Analysis of the phonology, morphology, and syntax of the Old French language based on literary masterpieces. The origins and development of the *chansons de geste* and of the Arthurian Legend.

511-12. *Methods and Materials of Research, Thesis Writing.* (3-3) Required of all candidates for the Master's degree in French.

MFL 513. *The Teaching of Foreign Languages.* Current issues, trends, theories and practices in foreign language teaching.

514. *French Folklore.* (3) The life and spirit of France as revealed in legends, songs, proverbs, festivals, etc.

521. *French Poetry to 1800.* (3) Poetical theory before 1800 and intensive study of selected poems of representative authors.

522. *Pre-classical French Theater.* (3) The development of French drama from its known origins to the advent of Corneille.

525. *French Phonetics and Diction.* (3) The theory of French sounds and their phonetic transciption. Practice in spoken French; rhythm, articulation, intonation and voice in prose and verse.

526-27. *Advanced Composition and Conversation.* (3-3) Intensive drill in French conversation on contemporary topics accompanied by discussions and exercises on syntax and composition.

528. *Stylistics and Explication de Textes.* (3) An in depth analysis of literary passages; syntax, sentence structure and style; application to the French method of approaching a literary text.

531. *French Moralists.* (3) Readings from the great French writers on the morals of man, on the human condition, and on nature.

532. *Renaissance Prose: Rabelais and Montaigne.* (3) A comparison of the language, literary techniques, and ideas of the two most important prose writers of the sixteenth century.

541. *Classical French Tragedy.* (3) A seminar on Corneille and Racine. Classical French theory as reflected in their plays. The influence of the Jansenist trend on Racine's theatre.

542. *Seminar on Molière.* (3) A review of French comedy prior to Molière. Molière as a director and actor, comic playwright, and observer of his era.

551. *French Theatre from 1700 until Today.* A study of the masterpieces of modern French drama from Marivaux to Ionesco.

552. *Prose Fiction in the Eighteenth Century.* (3) The philosophical aesthetic trends of the period as seen in the tales and novels with emphasis on the origins and development of the *conte philosophique.*

553. *Seminar on Voltaire and Rousseau.* (3) Their pre-revolutionary significance and influence on modern civilization with attention to their mutual antipathy.

561. *Modern French Poetry.* (3) An introduction to the theory of 19th and 20th century poetry and analysis of masterpieces of the principal schools.

562. *The Novel in the 19th Century.* (3) Selected works from the romantic, realistic, and naturalistic novelists.

571. *Contemporary French Novel.* (3) An intensive study of the novel from Proust to present day.

572. *Black Authors of French Expression.* (3) A survey of French literary works by Black writers.

573. *French Existentialism.* (3) Existentialism in the works of Sartre, Simone de Beauvoir and Camus, in the *anti-roman* of Robbe-Grillet and Butor, and in the theatre of Ionesco, Beckett, and Genet.

GRADUATE COURSES IN SPANISH

500. *Reading Spanish.* (0) An intensive course for graduate students who must pass a foreign language reading examination.

501-2. *Old Spanish Language and Literature.* (3-3) A deductive study of Old Spanish syntax with attention to phonology and morphology based upon selected literary texts of the twelfth through fifteenth centuries.

511-12. *Methods and Materials of Research, Thesis Writing.* (3-3) Required of all candidates for the Master's degree in Spanish.

514. *Spanish Folklore.* The life and spirit of Spain as revealed in legends, songs, proverbs, festivals, etc.

521. *Early Spanish Drama.* (3) Development of the theatre up to Lope de Vega.

522. *Seminar on the Celestina.* (3) Intensive study of the work, its authorship, sources, and influences.

523. *Semniar on Cervantes.* (3) Primary emphasis on the *Quijote* with attention to the *novelas ejemplares.*

524. *Golden Age Drama.* (3) Detailed study of the nature, techniques, types, and major productions.

525. *Spanish Phonetics and Diction.* (3) Nuances in the Spanish sound system, phonetic transcriptions, and drill in prose and verse intonation.

526-27. *Advanced Composition and Conversation.* (3-3) Modern idiomatic usage through exercises in grammar, oral and written composition.

528. *Translation.* (3) Problems and techniques involved in Spanish to English and English to Spanish translation.

529. *Stylistics.* (3) An introduction to stylistic analysis of literary texts.

530. *The Picaresque Novel.* (3) An overview of the genre with an intensive study of *Lazarillo de Tormes, Guzmán de Alfarache* and *Vida del Buscón.*

531. *Survey of Spanish Poetry.* (3) Selected poems from the Middle Ages to Romanticism to acquaint the student with the complexities and development of Spanish poetry.

532-33. *Modern Spanish Novel.* (3-3) An intensive study of the novel from Fernán Caballero to present day.

541. *Modern Spanish Poetry.* (3) From Modernism to present day.

542-3. *Modern Spanish Theatre.* (3-3) Selected works from Romantic, realistic, and contemporary drama.

551-2-3. *Studies in Spanish-American Literature.* (3-3-3) Selected authors and works to familiarize the student with the development of the literature through the centuries.

Department of Plant Science

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

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 work in this and other departments.

REQUIRED COURSES

Plant Science

501. *Plant Breeding.* (3).
502. *Fiber, (Other than Cotton) Sugar, and Root Crops.* (3).
503. *Soil Classification.* (3).
511. *Methods of Research.* (3).
512. *Thesis.* (3).
513. *Advanced Plant Pathology.* (3).
521-22-23. *Seminar.* (1-1-1).
531-32-33. *Plant Science Literature.* (1-1-1).
541. *Advanced Methods in Soil Analysis.* (3).
542. *Special Problems in the Agronomic Sciences.* (3).
543. *Special Problems in the Horticultural Sciences.* (3).
551. *Advanced Pomology.* (3).
552. *Advanced Methods in Plant Analysis.* (3).
553. *Advanced Propagation of Horticultural Plants.* (3).

ELECTIVE COURSES

Agronomy

310G. *Sorghums and Small Grains.* (3).
303G. *Plant Physiology.* (3).
321G. *Farm Weeds and Their Control.* (3).

Horticulture

372G. *Landscape Plants and Designs.* (3).
453G. *Turf Management.* (3).

Upper Division Courses

Agronomy 301G. *Sorghums and Small Grains.* (3).
Agronomy 303G. *Plant Physiology.* (3).
Agronomy 321G. *Farm Weeds and Their Control.* (3).
Horticulture 372G. *Landscape Plants and Designs.* (3).
Horticulture 453G. *Turf Management.* (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. *Methods of Research.* (3).

512. *Thesis.* (3)

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.* (1-1-1) 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.* (1-1-1) 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

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

Department of Psychology

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

The graduate program in psychology offers six curricula leading to the Master of Science degree in General Psychology, School Psychological Services Work, Educational Psychology, Guidance and Counseling, Secondary School Guidance and Counseling, and Elementary School Guidance and Counseling. Each curriculum is designed to prepare the student for a specific area of professional work. The course offerings include a thirty credit hour core of basic psychology courses common to all curricula, and a pattern of courses for each curriculum designed to prepare the student for professional work and certification, if required in the student's area of specialization.

Upper Division courses (if approved as a part of the student's graduate program).

Psy. 351G—Developmental Psychology
Psy. 431G—Physiological Psychology
Psy. 461G—Differential Psychology
Psy. 462G—Introduction to Psychological Testing
Psy. 481G—History and Systems of Psychology.

General Psychology

Pearl Mayo Dansby, Ph.D., *Graduate Curriculum Chairman*

The General Psychology curriculum requires three quarters in residence and forty-five quarter hours. It is designed for students seeking preparation for a professional career in psychology, either for a future doctoral-level program of study, or for engaging in professional work which requires professional training on the master's degree level.

Admission Requirements:

Admission requires an undergraduate major in psychology, or its equivalent. Undergraduate study should include at least one course in statistics and testing; abnormal, physiological, social, developmental, differential, experimental, and history and systems, psychology.

A 2.5 average in at least thirty undergraduate psychology courses is also required.

Degree Requirements:

A minimum of three quarters in residence study and forty-five quarter hours of approved course work, including a thesis (3 hours credit) are required.

Course of Study:

Psy. 502 —Advanced Statistics for Research in Education and Psychology
Psy. 505 —Advanced General Psychology
Psy. 506 —Advanced Experimental Psychology
Psy. 511 —Methods of Research in Psychology
Psy. 512 —Educational Psychology Thesis Seminar
Psy. 525 —Theories and Measurements of Personality
Psy. 531 —Psychometrics
Psy. 541 —Advanced Social Psychology
Psy. 545 —Psychology of Learning
Psy. 571-72—Clinical Testing
Psy. 573-74—Clinical Psychology
Psy. 575 —Projective Techniques

Electives and modifications to satisfy student's need may be made with approval of Curriculum Chairman.

School Psychological Services Work

M. I. CLAIBORNE, Ph.D., *Curriculum Chairman*

The School Psychological Services Work curriculum requires four quarters in residence and fifty-four quarter hours. It is designed for preparing psychological services workers in elementary and secondary schools. Certification as a school psychological services worker requires an internship, which may be served during the first year of employment. The curriculum is oriented towards the application of psychological information and skills to working with children in a school setting. It differs from the general psychology curriculum in that it includes nine quarter hours of professional education.

Admission Requirements:

An undergraduate major in psychology, or its equivalent is required. A 2.5 average in at least thirty undergraduate psychology courses is also required.

Degree Requirements:

Four quarters of residence study and fifty-four credit hours of approved course work, including a thesis (3 hours credit) are required.

Aside from the grade point average, the candidate must demonstrate a potential for working with children.

Course of Study:

Psy. 502 —Advanced Statistics for Research in Education and Psychology
Psy. 503 —Introduction to School Psychological Services Work
Psy. 505 —Advanced General Psychology
Psy. 506 —Advanced Experimental Psychology
Psy. 511 —Methods of Research in Psychology
Psy. 512 —Educational Psychology Thesis Seminar
Psy. 525 —Theories and Measurements of Personality
Psy. 531 —Psychometrics
Psy. 541 —Advanced Social Psychology
Psy. 545 —Psychology of Learning
Psy. 571-72—Clinical Testing
Psy. 573-74—Clinical Psychology
Psy. 575 —Projective Techniques
Ed. 502 —School Administration

Ed. 526 —Philosophy of Education
Ed. 587 —Curriculum Construction and Practices in Public Schools

Electives:

Psy. 481G —History and Systems of Psychology
Psy. 551 —Human Growth and Development
Psy. 561 —Identification and Correction of Learning Disorders
Psy. 565 —Psychology of Exceptional Children
Psy. 591 —School Psychological Services Work Internship
Psy. 593 —School Psychological Services Work Seminar

Educational Psychology

M. I. CLAIBORNE, Ph.D., *Graduate Curriculum Chairman*

The curriculum in Educational Psychology requires three quarters in residence study and forty-five quarter credit hours. It is designed for classroom teachers and other school personnel who desire additional psychology information in support of their professional work.

Admission Requirements:

This curriculum requires an undergraduate major in general psychology or in education; which includes courses in general psychology, educational psychology, human development, statistics, testing, and adjustment.

A 2.5 undergraduate average in at least 30 credit hours of psychology and/or education courses is required.

Degree Requirements:

Three quarters residence study and forty-five quarter hours of approved course work, including a thesis (3 hours credit) are required.

Course of Study:

Psy. 502—Advanced Statistics for Research in Education and Psychology
Psy. 511—Methods of Research in Psychology
Psy. 512—Educational Psychology Thesis Seminar
Psy. 525—Theories and Measurements of Personality
Psy. 531—Psychometrics
Psy. 541—Advanced Social Psychology
Psy. 543—Advanced Educational Psychology
Psy. 545—Psychology of Learning
Psy. 551—Human Growth and Development

Ed. 502—School Administration
Ed. 526—Philosophy of Education
Ed. 587—Curriculum Construction and Practices in Public Schools

Electives: 9 hours of concentration in one area

Guidance Curricula

FREDERICK J. D. MCKINNEY, Ed.D., *Chairman of Graduate Curricula*

Guidance and Counseling

The Master of Science degree curriculum in Guidance and Counseling is a three quarter residence program. It requires forty-five credit hours designed for students preparing for a career in personnel work in colleges, social, and other agencies, and classroom teachings and for other school personnel who desire a knowledge of guidance as support for their professional work. (This is *not* a certification curriculum for school guidance counselors).

Admission Requirements:

This curriculum requires the bachelor degree (any major), including 18 quarter credit hours of professional education and psychology courses in general.

A 2.5 average in at least 30 quarter credit hours of undergraduate psychology or education is required.

Degree Requirements:

Three quarters of residence study and forty-five quarter hours of approved course work, including a thesis (3 hours credit) are required.

Course of Study:

Psy. 502—Advanced Statistics for Research in Education and Psychology
Psy. 511—Methods of Research in Psychology
Psy. 512—Educational Psychology Thesis Seminar
Psy. 525—Theories and Measurements of Personality
Psy. 531—Psychometrics
Psy. 532—Principles of Guidance
Psy. 533—Group Dynamics
Psy. 534—Student Personnel Services in Secondary Schools
Psy. 535—Interviewing and Counseling
Psy. 536—Individual Appraisal
Psy. 537—Counseling Theory and Behavior Dynamics
Psy. 538—Vocational Choice Theory
Electives: 9 hours in one area of concentration are required.

Secondary School Guidance and Counseling

The Master of Science degree curriculum in Secondary School Guidance and Counseling is a four quarter residence program. Fifty-seven quarter hours designed for the preparation of secondary school guidance counselors are required. The curriculum includes a practicum, and qualifies the student for certification as a secondary school guidance counselor.

Admission Requirements:

The bachelor's degree and secondary school teacher certification are required. Undergraduate study, regardless of major and certification area, must include at least one course in general psychology, human development, educational psychology, statistics, testing, and adjustment.

A 2.5 undergraduate average in at least thirty quarter credit hours in education and psychology courses are required.

Degree Requirements:

Four quarters residence study and fifty-seven quarter hours of approved course work, including the thesis (3 hours credit and practicum 6 hours credit) are required.

Course of Study:

Psy. 502 —Advanced Statistics for Research in Education and Psychology
Psy. 511 —Methods of Research in Psychology
Psy. 512 —Educational Psychology Thesis Seminar
Psy. 525 —Theories and Measurements of Personality
Psy. 531 —Psychometrics
Psy. 532 —Principles of Guidance
Psy. 533 —Group Dynamics
Psy. 534 —Student Personnel Services in Secondary Schools
Psy. 535 —Interviewing and Counseling
Psy. 536 —Individual Appraisal
Psy. 537 —Counseling Theory and Behavior Dynamics
Psy. 538 —Vocational Choice Theory
Psy. 539a—Practicum in Secondary School Guidance and Counseling
Psy. 539b—Practicum Seminar in Secondary School Guidance and Counseling
Psy. 545 —Psychology of Learning
Psy. 553 —Advanced Adolescent Psychology
Electives: Professional Education, 9 hours with approval of adviser

Elementary School Guidance and Counseling

The Master of Science degree curriculum in Elementary School Guidance and Counseling requires four quarters in residence and fifty-seven quarter credit hours. It is designed for the preparation of elementary school guidance counselors. Field experience in elementary school guidance is required. This curriculum prepares the student for certification as an elementary school guidance counselor.

(Note: The State of Tennessee has not adopted certification requirements for elementary school guidance counselors; however, the curriculum conforms to the areas of study proposed for certification.)

Admission Requirements:

Admission requires an undergraduate major in elementary education and an elementary school teacher certificate.

An undergraduate average of 2.5 in at least thirty quarter credit hours in elementary education is required.

Degree Requirements:

Four quarters of residence study and fifty-seven hours of approved courses including a thesis (3 hours credit) and the field experience (6 hours credit) are required.

The demonstration of potential for counseling elementary school children is required for retention in the program.

Course of Study:

Psy. 502 —Advanced Statistics for Research in Education and Psychology
Psy. 511 —Methods of Research in Psychology
Psy. 512 —Educational Psychology Thesis Seminar
Psy. 525 —Theories and Measurements of Personality
Psy. 531 —Psychometrics
Psy. 532 —Principles of Guidance
Psy. 533 —Group Dynamics
Psy. 535 —Interviewing and Counseling
Psy. 536 —Individual Appraisal
Psy. 538 —Vocational Choice Theory
Psy. 540a—Practicum in Elementary School Guidance and Counseling
Psy. 540b—Practicum Seminar in Elementary School Guidance and Counseling
Psy. 545 —Psychology of Learning
Psy. 551 —Human Growth and Development
Psy. 561 —Identification and Correction of Learning Disorders
Psy. 565 —Psychology of Exceptional Children
Professional Education, 9 hours, chosen with approval of adviser.

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.

503. *Introduction to School Psychological Services Work.* (3) An introductory course designed to survey the philosophy, duties and practices of school psychological services workers.

505. *Adanced 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 Appraisal.* (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. *Vocational Choice Theory.* (3) Theories of vocational choice shall be studies and research in the area reviewed to give the student an awareness of the bases of vocational choices.

539a. *Practicum in Secondary School Guidance and Counseling.* (3) Field experience and supervised guidance and counseling in a secondary school.

539b. *Practicum Seminar in Secondary School Guidance and Counseling.* (3) Seminar type class for consideration of problems encountered in practicum and for relating practices to theory. Course to be taken concurrently with practicum.

540a. *Practicum in Elementary School Guidance and Counseling.* (3) Field experience and supervised guidance and counseling in an elementary school.

540b. *Practicum Seminar in Elementary School Guidance and Counseling.* (3) Seminar type class for consideration of problems encountered in practicum and for relating practices to theory. Course to be taken concurrently with practicum.

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. *Human Growth and Development.* (3) A course designed to focus on the developing human organism with stress placed on the physical, intellectual, social and emotional processes, and the relation of maturation and growth to learning.

553. *Advanced Adolescent Psychology.* (3) A course designed to critically examine the research data and theories of adolescent growth and development as a means of providing a basis for understanding the behavior of adolescents.

561. *Identification and Correction of Learning Disorders.* (3) A course designed to offer training in identifying and correcting disorders which handicap learning.

565. *The Psychology of Exceptional Children.* (3) A course designed to survey the field of exceptional children, with emphasis on the needs and educational problems of such children, and a focus on the role of school in serving these children.

571-72. *Clinical Testing.* (3-3) 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* (3-3) 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.

575-76. *Projective Techniques.* (3-3) Designed to familiarize the student with the uses of projective techniques.

Psych. 591. *School Psychological Services Work Internship.* (6) Daily (Monday to Friday), eighteen weeks, supervised experiences and practice in psychological work in a public school system, under the direction of the school psychologist of the school system and the department school psychological services internship supervisor.

Psych. 593. *School Psychological Services Work Seminar.* (3) All students enrolled in the internship (Psy. 591) are required to attend a weekly, three hour seminar on problems in school psychological services work. The seminar will be conducted by the supervisor or interns.

Note: The internship and the seminar are designed as terminal courses in the school psychological services work curriculum. A student who has completed 45 hours of prescribed courses may be admitted by permission of the supervisor with recommendation of the staff.

Department of Science Education and Geography

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 or Master of Science 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 in teaching of science, a research project, or 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
Science 501	3
Science 502	3
Education 502	3
Education 511 or 601	3
Science 512 or 602	3
Education 526	3
Psychology 502	3
Psychology 543	3
Science Electives and Science Education Electives	21

Courses Required for a Minor in Science Education

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

Undergraduate Courses Approved for Graduate Credits

Biochemistry 402—3—General Biochemistry 8
Zoology 441—Introduction to Parasitology 4
Chemistry 440 Institute:—Fundamentals of Chemistry 4
Chemistry 441 Institute:—Elementary Analytical Chemistry 4
Chemistry 462-3—Organic Qualitative Analysis 6
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.

511. *Fundamentals of Research.* (3).

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

601. *Science Seminar.* (3) This course consists of a survey of the current literature and subject matter in the major field. Required for the Master of Arts in Education degree for majors in Science Education.

602. *Project Writing.* (3) This terminal course consists of writing a project centered around some problem in the area of the candidate's major field of concentration.

Department of Sociology

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

Upper Division Courses:

Soc. 421—*Population Problems*
Soc. 491—*History of Sociological Theory*

Graduate Courses:

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 impact of the culture and group life upon the personality is 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.

Department of Speech and Drama

CURRICULUM IN SPEECH AND DRAMA

THOMAS E. POAG, Ph.D., *Head and Graduate Curriculum Chairman*

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, 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.

Undergraduate Courses Approved for Graduate Credit

311-12-13G. Theatre History (3-3-3)
323G. Psychology of Speech (3)
421G. Stage Design (3)
422G. Stagecraft (3)
423G. Stage Lighting (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.

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

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.

516. *Introduction to Speech and Hearing Research.* (3) Introduction to the graduate discipline, and the technique and resources of graduate research in the speech sciences. Required of all candidates for advanced degree.

518. *Advanced Clinical Practicum and Diagnosis.* (1) Consent of the Instructor or advisor.

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.

565. *Seminar in Speech Pathology.* (2) Advanced consideration of special problems through group thinking and evaluation.

566. *Speech Pathology Practicum.* (1-3) Clinical practicum under supervision.

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 representative 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.

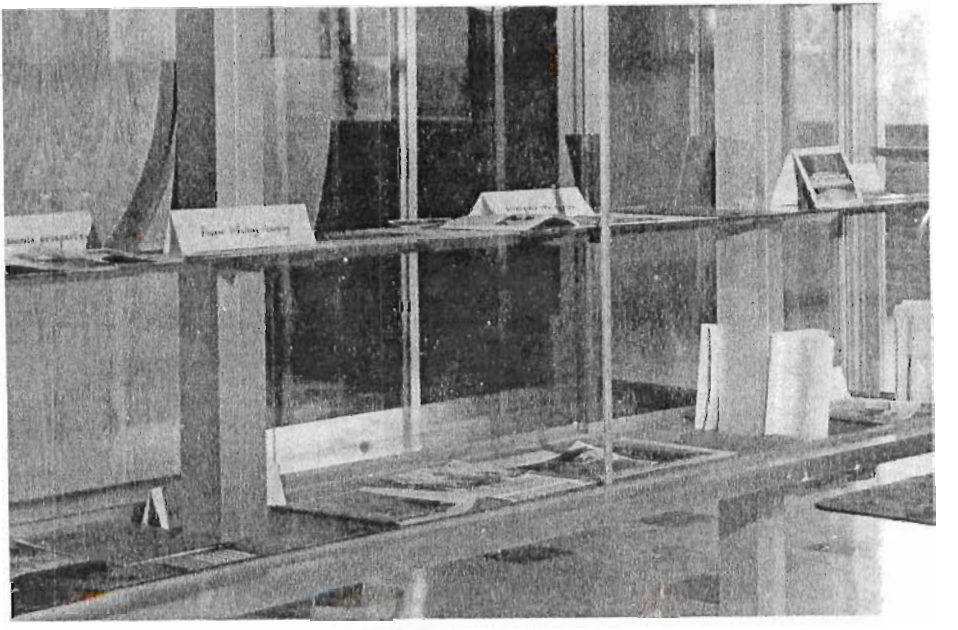
561. *Advanced Play Directing.* (3) Theory and practice in the training of actors and in directing, the making of a prompt book and designing of a full length play. Prerequisite: Speech 301 or 302.

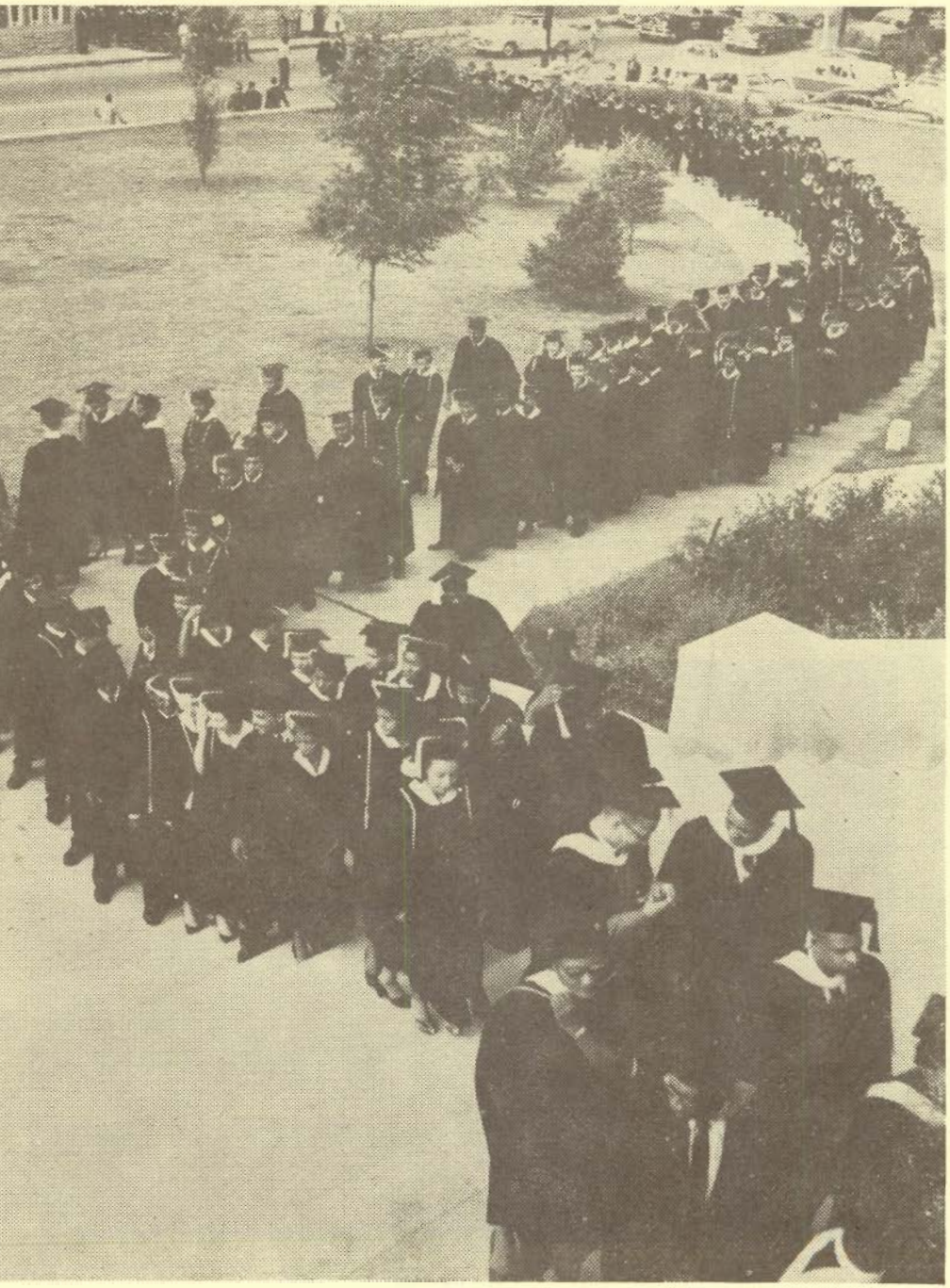
562. *Directing and producing the full length play for experimental and public production.* (3) Prerequisite: Speech 302 or 561.

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

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

The following courses are required for the graduate speech and drama major: Speech Courses: 501, 521, 591 or related courses; Drama and Theatre courses: 541, 542, 551, 561, 562 or related courses; Thesis: 511, 512; Dramatic Literature: 581.





SCHOOL OF AGRICULTURE AND HOME ECONOMICS

DAVID A. HAMILTON, Dean

FACULTY:

Department of Agricultural Education
David A. Hamilton, Gul M. Telwar, and Andrew P. Torrence.

Department of Animal Science
Andrew Bond, Roland Norman, Early J. Thornton, and Theodore Wood.

Department of Plant Science
Hazo W. Carter, Neal McAlpin, and Fred E. Westbrook.

Department of Home Economics
Augustine S. Dartis, Mattye C. Flowers, Geraldine B. Fort, Luther Franklin, Mary H. Greer, Dolores A. Harris, Erna B. Jones, Ruth McDowell, Cathryn B. McKinney, Lillie B. Redmond, and Miriam G. Towns.

Department of Nursing Education
Dorothy M. Coley, Carolyn O. Johnson, Lula M. Moore, Ella M. Phillips, and Sister Mary Joselinda.

THE SCHOOL OF AGRICULTURE AND HOME ECONOMICS

DAVID A. HAMILTON, Ed.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 benefited.

The School recognizes that the home and family life are fundamental and primary to the individual and to the survival of our economic structure. The School also recognizes the demand for nurses and attempts to help supply qualified registered nurses. Therefore, the School's philosophy is geared toward accepting the responsibility of preparing students for homemaking and the maintenance of better homes; for producing and processing more and better agricultural products; for satisfying careers in the field of nursing; for intelligent and respectful participation in the democratic way of life.

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

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

The Bachelor of Science degree is offered in Agricultural Education and Economics; Animal Science, Biochemistry, General Home Economics, Home Economics Education, Child Development and Family Relationships, Clothing and Textiles, Foods and Nutrition (also the A.B.); Agronomy and Horticulture. The Associate in Arts degree is offered in Nursing.

The Master of Science degree is offered in Agricultural Education, Animal Science, Plant Science, and Home Economics Education. The Master of Arts in Education degree is also offered in Agricultural Education.

NON-DEPARTMENTAL OFFERINGS

111. *Agriculture Orientation* (3). An orientation course required of all freshmen enrolled in agriculture. Method of study, advisement system, organization of curriculum, discussion of requirements, and career opportunities in various fields of agriculture are considered.

201. *Introduction to Social Sciences for Agriculture* (3). Social Sciences as they relate to agriculture in the economy; tools of social sicence analyzed as they apply to agricultural problems; agriculture—its development, relation to man, industry and government.

203. *Rural Sociology* (3). This course deals with the pattern and changes in living, the family, the church, the community, the school and socio-economic problems of rural people.

DEPARTMENT OF AGRICULTURAL EDUCATION AND AGRICULTURAL ECONOMICS

GUL M. TELWAR, Ed.D., *Head*

The curriculum in Agricultural Education is designed primarily to prepare students to teach vocational agriculture in secondary schools of Tennessee. Students may major in Agricultural Education without taking the prescribed courses for teacher education. These students must complete a minimum of 192 quarter hours of credit. Those students who plan to teach, must complete a minimum of 198 quarter hours of credit. The University requires six (6) quarter hours of Physical Education, (9) nine quarter hours of English, three (3) quarter hours of Mathematics, (9) nine quarter hours of Social Science and nine (9) quarter hours of American History (for all students who do not present a year of American History on their high school transcripts). In addition, the University requires a minimum of 66 quarter hours in 300 and 400 level courses.

To qualify for teaching vocational agriculture in Tennessee, a student must complete all required courses which include 24 quarter hours of Agricultural Education and 27 quarter hours of Education. The Department offers the degrees: Bachelor of Science, Master of Science in Agricultural Education and Master of Arts in Education.

In Agricultural Economics, instruction in technical and scientific agriculture is combined with education in the use of economic principles and tools which improve the

science and art of decision making. Agricultural Economics integrates principles, knowledge, and data which are useful in the solution of problems faced by agricultural firms and service agencies in the dynamic U. S. economy. Emphasis is placed on the management of agricultural production and marketing firms and on decision guides which lead to the greatest firm and social efficiency. Major areas of course work include: farm and business firm management, financial management, resource development, land use and valuation, agricultural marketing, policy and price analysis. The Bachelor of Science degree is offered in Agricultural Economics.

Majors in Agricultural Economics must complete a minimum of 192 quarter hours with a minimum average of "C" (2.00). The University requires six (6) quarter hours of physical education, nine (9) quarter hours of English, three (3) quarter hours of Mathematics, and nine (9) quarter hours of Social Studies.

CURRICULUM IN AGRICULTURAL EDUCATION

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Agriculture 111	3		
Health 151	3		
Art 133		3	
Music 131			3
Animal Science 101	3		
Plant Science 102		3	
Agricultural Engr. 103			3
English 101-02-03	3	3	3
Math 111-12-13	4	3	3
Physical Ed. 11, 12, 13	1	1	1
*Electives		3	3
	17	16	16

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Psych. 242-243	3	3	
Education 201	3		
Agronomy 201, 213	3		4
English 211-12-13	3	3	3
Horticulture 363			3
Chemistry 211-12	4	4	
Poultry Husb. 201-202	3	3	
Agricultural Eco. 201			3
*Electives		6	6
	19	19	19

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Agricultural Eco. 301-02-03	3	4	3
Agricultural Engr. 302		3	
Poultry Husb. 302		3	
Horticulture 201, 203	3		3
Education 301	3		
Psychology 312		3	
Animal Husb. 311			3
Education 387			3
Agricultural Educ. 371a 371b, 371c	3	3	3
Social Studies 111-12	3	3	
Agriculture 203			3
*Electives	3		
	18	19	18

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Agronomy 401	3		
Psychology 463	3		
Agricultural Eco. 401, 403	3		3
Agricultural Educ. 471-72		15	
Agricultural Engr. 403	3		
Animal Husb. 401, 403	3		3
Education 462	3		
Agricultural Educ. 450			3
*Electives			9
	18	15	18

* All electives will be taken with the approval of the major adviser and the remainder of the University required courses must be included.

COURSES IN AGRICULTURAL EDUCATION

371a. *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. *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 youths and adults.

371c. *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.

°401a. *Educational Exhibits.* (1) (Lettering and Layout Design and Color) An appreciation for color as related to use in displays.

°401b. *Educational Exhibits.* (1) (Graphic Presentations) Charts, graphs, maps, placards, panels, photographs and transparencies are the graphic presentations considered.

°401c. *Educational Exhibits.* (1) (Portable Exhibits) Selected problems in extension education, including window displays, one-day shows, bulletin board displays and paper sculpture.

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 is selected to offer the student some experience in research.

471. *General Methods and Class Management in Vocational Agriculture.* (3) This course offers the student partial experiences in preparing instructional units and classroom management material for vocational agriculture classes to be adapted to given communities.

472. *Student Teaching in Agricultural Education.* (12) A course designed to familiarize and give experience to prospective teachers of vocational agriculture in all phases of the program.

• Designed for Extension (on-campus).

CURRICULUM IN AGRICULTURAL ECONOMICS

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Agriculture 111	3		
Health 151	3		
Art 133		3	
Music 131			3
Animal Science 101	3		
Plant Science 102		3	
Agricultural Engr. 103			3
English 111-12-13	3	3	3
Math 111-12-13	4	3	3
Physical Ed. 11, 12, 13 or Air Sci. 151-52-53	1	1	1
°Electives		3	3
	17	16	16

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Economics 211-12-13	3	3	3
Agronomy 201	3		
English 211-12-13	3	3	3
Agricultural Eco. 201			3
Agronomy 213			3
Political Sci. 221-22	3	3	
Agriculture 203			3
Chemistry 111-112	4	4	
°Electives	3	6	3
	19	19	18

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Agricultural Eco. 301, 302, 303	3	4	3
Agricultural Eco. 311	3		
Agricultural Eco. 312		3	
Agricultural Eco. 323			3
Agricultural Engr. 301	3		
Accounting 211-12	3	3	
Math 161		3	
American History 201, 202, 203	3	3	3
English 323			3
Political Sci. 223			3
°Electives	3	3	3
	18	19	18

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Agricultural Eco. 401, 402, 403	4	3	3
Agricultural Eco. 411	3		
Agricultural Eco. 450		3	
Economics 302, 304		3	3
Economics 401	3		
Economics 404			3
Business Adm. 326	3		
Plant Science 401		3	
°Electives (300-400 level)	6	6	9
	19	18	18

• All electives will be taken with the approval of the major adviser and the remainder of the University requirements must be included.

COURSES IN AGRICULTURAL ECONOMICS

201. *Introduction to Agricultural Economics.* (3) Application of principles and methods of economics to farm organization, management, land tenure, marketing finance, and insurance; evaluation of policies, programs, and institutions concerned with agricuture.

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.

302. *Farm Management.* (4) 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; ways of getting started in farming.

303. *Elementary Agricultural Statistics.* (3) Introduction to statistical principals, probability, sampling, probability distribution, correlation, regression and analysis of variance.

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.

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. Prerequisite: Agricultural Economics 301.

322. *Farmer's Cooperative.* (3) A study of the history and present status of farmer's cooperatives, what they have done and tried to do for farmers; their problems, finance, and control.

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.

401. *Tabular and Graphic Presentation of Data.* (4) 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.

402. *Agricultural Prices.* (3) Concerned with the analysis of prices of farm products to other prices. Consideration is given to agricultural outlook, production cycles, and price forecasts.

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

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

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.

COURSES IN AGRICULTURAL ENGINEERING

103. *Agricultural Engineering.* (3) The fundamental principles of agricultural engineering dealing with skill, judgment and resourcefulness in the areas of farmshop work, farm power machinery, farm buildings, rural electrification, and soil and water management. One lecture and two laboratory periods.

301. *Farm Power and Machinery.* (3) 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.

302. *Maintenance and Adjustment of Farm Machinery.* (3) A course for those who expect to become farm managers, operators or vocational agriculture teachers. Adjustments and repairs of farm machinery. Theory and practice in electric arc and acetylene welding. One lecture—two laboratory periods.

303. *Planning Low Cost Housing.* (3) Determining the functional requirements of farm houses for given situations, size and arrangements of rooms, location and size of doors, windows, electrical outlets and water supply. Planning principles, materials and finishes. Emphasis on low cost housing as provided for in the Federal Housing Act,

especially for home economics, business administration and agriculture students who expect to teach or become affiliated with the Agriculture Extension Service or the Farmers Home Administration. One lecture—two laboratory periods.

400. *Special Problems.* (3) A student chooses a problem requiring laboratory or field work with special laboratory research. Offered during any quarter. Prerequisite: Approval of department heads. One lecture—two laboratory periods.

403. *Farm Buildings, Equipment and Conveniences.* (3) Elementary scale drawing and plan reading, farmstead layout, operation and maintenance of electric equipment; functional requirements of farm houses, shelters, and storages; water systems; septic tanks and sewage disposal; heating, cooling, etc. One lecture—two laboratory periods.

DEPARTMENT OF ANIMAL AND PRE-VETERINARY SCIENCE

ROLAND NORMAN, Ph.D., *Head*

The department of Animal Science consists of two (2) areas of instruction, namely, Animal 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 producres, extension livestock specialists, and for employment as agricultural biochemists, animal nutritionists, and other research workers.

CURRICULUM IN ANIMAL HUSBANDRY

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.

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Agriculture 111	3		
Health 151	3		
Art 133		3	
Music 131			3
Animal Science 101	3		
Plant Science 102		3	
Agricultural Engr. 103			3
English 101-02-03	3	3	3
Math 111-12-13	4	3	3
Physical Ed. 11, 12, 13	1	1	1
°Electives		3	3
	17	16	16

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Agronomy 201-02	3	4	
English 211-12-13	3	3	3
Chemistry 111-12	4	4	
Biochemistry 113			4
Poultry Husb. 201-02	3	3	
Agriculture 203			3
Agricultural Eco. 201	3		
Physical Ed. 20's-50's	1	1	1
°Electives	1	3	7
	18	18	18

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Biochemistry 301-02-03	4	4	4
Poultry Husb. 302		3	
Biology 241	4		
Animal Husb. 321	3		
Agricultural Eco. 302		4	
Animal Husb. 301-03	3		3
Animal Husb. 311-12-13	3	3	3
°Electives		3	6
	17	17	16

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 321-22	3	3	
Agronomy 401-03	3		3
Agricultural Engr. 403			3
Agricultural Eco. 312		3	
Animal Husbandry 322		3	
Animal Husb. 401-02-03	3	3	3
Animal Husb. 421-22-23	1	1	1
Animal Husb. 450	3		
°Electives	3	3	6
	16	16	16

° All electives will be taken with the approval of the major adviser and the remainder of the University required courses must be included.

OPTION I

Pre-Veterinary Medicine

Students interested in Veterinary Medicine should, in addition to the courses listed in Animal Husbandry curriculum, elect the following courses.

Physics	12 quarter hours
Zoology	12 quarter hours
Embryology	3 quarter hours
Social Studies	9 quarter hours

COURSES IN ANIMAL HUSBANDRY

211. *Riding Light Horses.* (3) Designed for men and women in 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. *Principles of 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.

302. *Livestock Management.* (3) Nutrient requirements for farm animals, livestock feeds, nutrient contents, and factors affecting value, management, marketing procedures and practices. 2 lectures and one laboratory.

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 and poultry with special emphasis 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 commerical 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, commerical and purebread breeding herds. Performance testing and S-10 Beef Cattle Programs. 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, prerequisities: A.H. 301 Two lectures and one laboratory period.

402. *Science of Meat.* (3) Composition, physical, chemical and nutritional properties of meat and meat products. Biochemical alterations of meat during aging, curing, processing and storage.

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 311. Two lectures and one laboratory period.

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.

451. *Physiology of Reproduction.* (3) Fundamental principles of the physiology of reproduction with primary emphasis on farm animals. Anatomy of the male and female reproductive track; hormones, estrus and estrus cycle; ovulation, gestation, parturition, lactation, fertility, sterility and artificial insemination.

OPTION II

Courses in Poultry Husbandry

Students interested in specializing in poultry husbandry should use the following as electives in the Animal Husbandry curriculum.

Junior Year	*Quarter Hours Credit*			*Senior Year*	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*	*Name of Course*	*I*	*II*	*III*
Poultry Husbandry 303			3	Poultry Husbandry 403			3
Poultry Husbandry 342		3		Poultry Husbandry 422		3	
		3	3			3	3

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.

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.

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.

BIOCHEMISTRY CURRICULUM

(Agricultural and Biological Chemistry)

ANDREW BOND, Ph.D., *Coordinator*

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, medicine, veterinary medicine, molecular biology, agricultural chemistry, 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 who pursue this curriculum must arrange with their major advisers 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	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Agriculture 111-2-3	1	1	1
Air Science 151-2-3	1	1	1
Chemistry 111-2-3	4	4	4
English 101-2-3	3	3	3
Mathematics 161-2-3 or Equivalent	5	5	5
Physical Education 11-2-3	1	1	1
Total—45	15	15	15

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Chemistry 211-2-3	4	4	4
Physics 221-2-3	4	4	4
Biology 311	4		
Biochemistry 302-3		5	5
Foreign Language	3	3	3
Meats 402	3		
Total—50	18	16	16

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Biology 241		4	
Chemistry 311-2-3	4	4	4
English 211-2-3	3	3	3
Physical Education 20's—50's	1	1	1
Air Science 251-2-3	1	1	1
Mathematics 261	5		
Electives**	3	3	7
Total—49	17	16	16

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Chemistry 481	4		
Biochemistry 402-3		3	3
Biochemistry 411	4		
Biochemistry 450			3
Biochemistry 423			1
Animal Nutrition 422		3	
Electives (twelve hours must be 300-400 level courses)	9	9	9
	17	15	16

** Note: Students anticipating medical school should take Biology 111, 112, and 113.

COURSES IN BIOCHEMISTRY

113. *Applied Chemistry.* (4) An introductory study of organic, inorganic, and biochemistry. Emphasis is placed on the chemical concepts and principles used in applied sciences. Open to students majoring in nutrition, medical technology, nursing education, health and physical education, etc. Three lectures and recitations, and two laboratory periods per week.

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.

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.

DEPARTMENT OF PLANT SCIENCE AND CONSERVATION

FRED E. WESTBROOK, Ph.D., *Head*

The Department of Plant Science and Conservation is designed primarily to acquaint students with the principles of Plant Science and the Conservation of the renewable natural resources. The Curriculums are designed to give students a broad knowledge of the principles of Agronomic and Horticultural Sciences and the conservation of the renewable natural resources.

Two undergraduate curriculums are offered with majors in Agronomy and Horticulture. A Student seeking a major in either of these disciplines will structure his program in accordance with that curriculum.

A major may be pursued in either area of concentration 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 quarter hours must be completed in the curriculum of the student's choice with a minimum of 15 quarter hours in 300 and 400 level courses.

Graduate students may pursue studies in Plant Science leading to the Master of Science degree in Plant Science. A description of these requirements is found under the Graduate School of this bulletin.

Freshmen and Sophomores majoring in Agronomy or Horticulture will take courses as listed in the Plant Science Curriculum.

CURRICULUM IN PLANT SCIENCE

Freshman Year				*Sophomore Year*			
Course & Number	*F*	*W*	*S*	*Course & Number*	*F*	*W*	*S*
Ag. Orientation	3			Agronomy 201-2-3	3	4	4
Health 151	3			Biology 101-2	4	4	
Art 133		3		Agronomy 213			4
Music 131			3	Chemistry 111-12-13	4	4	4
Animal Science 101	3			Ag. Econ. 201	3		
Plant Sci. 102		3		Poultry Hus. 201-2-3	3	3	3
Agric. Eng.			3	Physical Ed. 20's-50's	1	1	1
English 101-2-3	3	3	3	or			
Math. 111-12-13	4	3	3	Air Sci. 251-2-3	1	1	1
P. E. 11-12-13	1	1	1				
or							
A. S. 151-2-3	1	1	1				
*Electives		3	3				
	17	16	16		18	16	16

* Electives will be chosen with approval of the adviser. Majors interested in a career in soil science will elect physics 211-12-13.

CURRICULUM IN AGRONOMY

FRED E. WESTBROOK, Ph.D., *Coordinator*

The curriculum in Agronomy is designed to offer principles and experiences which will prepare students for successful competition in the agronomic sciences and the conservation of the renewable natural resources. The successful completion of this curriculum leads to the degree of bachelor of Science and provides opportunities for employment with the Federal Government, Soil Conservation Service, Farmers Home Administration, Agricultural Extension Service, Agricultural Research Service, private industry and other related fields.

Freshman and sophomore students take courses outlined in the plant science curriculum for freshmen and sophomores.

Junior Year			
Course & Number	*F*	*W*	*S*
Agronomy 301-2-3	3	3	3
Agronomy 311			4
Agric. Econ. 301-2.....	3	3	
Biochem. 301-2	3	3	
English 321-23	3		3
Horticulture 201-2-3	3	3	3
Horticulture 343-363 ...		3	3
Poultry Husb. 302.....		3	
Social Sci. 111	3		
Elective			3
	19	19	19

Senior Year			
Course & Number	*F*	*W*	*S*
Agronomy 401-2-3	4	4	3
Agronomy 411-12-13 ...	1	1	1
Ag. Eco. 401	3		
Animal Husb. 403-311 ..		3	3
Agronomy 450	3		
Agronomy 321-2-3	3	3	3
Sociology 211		3	
Geology 361			4
Social Sci. 203	3		
Electives		3	3
	17	17	17

COURSES IN AGRONOMY

Soil Science

202. *Soil Genesis and Morphology.* (4) A study of the origin, structure and general nature of soils and their relation to plants. Three lectures and one laboratory period.

203. *Soil Fertility.* (4) A study of soil factors as related to soil fertility maintenance, and fertilizer practices. Three lectures and one laboratory period.

311. *Elementary Soil Classification.* (4) An introductory study of the principles of soil classification and land judging. Required of majors in Agronomy. Prerequisites: Soils 202-3. Three lectures and one laboratory period.

401. *Soil and Water Conservation and Management.* (4) A study of the principles of tillage, drainage, fertilization and rotation practices as they affect the productive capacity of field soils. Three lectures and one laboratory period.

402. *Advanced Soil Fertility.* (4) 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 two laboratory periods.

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 majors.

Crop Science

102. *Plant Sciences.* (3) A one quarter, introductory course in Plant Science that exposes students to the principles of crop science, horticulture, and conservation of the renewable natural resources. Two lectures and one laboratory period per week.

201. *Field Crops.* (3) A study of the different uses of land, crop characteristics, adaptation, culture and use. 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 one laboratory period.

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, transpiration and nutrition. Two lectures and one laboratory period.

321. *Farm Weeds and Their Control.* (3) A one-quarter course of 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.

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.

CURRICULUM IN HORTICULTURE

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

All freshman and sophomore students take courses outlined in the Plant Science Curriculum for freshmen and sophomores.

Junior	Quarter Hours Credit		
Name of Course	*I*	*II*	*III*
Horticulture 201-2-3	3	3	3
Horticulture 302		3	
Horticulture 331-33	3		3
Horticulture 352-372	3	3	
Agronomy 323			3
Biochemistry 312		4	
Chemistry 361	4		
Philosophy 323		3	
Political Science 313			3
Poultry Husbandry 302 ..		3	
Sociology 221-322	3		3
Electives	3		3
	19	19	18

Senior	Quarter Hours Credit		
Name of Course	*I*	*II*	*III*
Horticulture 343			3
Horticulture 401	3		
Horticulture 423			3
Horticulture 450	3		
Horticulture 451	3		
Agronomy 303			3
Agronomy 401	4		
English 321-3	3		3
°Electives		12	3
	16	12	15

COURSES IN HORTICULTURE

201. *Principles of Fruit Growing.* (3) A study of the principles and practices involved in the culture and orchard plants. Two lectures and one laboratory period.

202. *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.

203. *Vegetable Gardening.* (3) A basic study of the principles and practices of vegetable production. Two lectures and one laboratory period.

°°302-3. *Commerical 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.

331-2-3. *Technical Skills in Horticulture.* (9) Aims to develop technical skills necessary for production of fruits, vegetables and ornamental plants. Required of all students majoring and/or minoring in horticulture. Three laboratory periods.

343. *Propagation of Horticultural Plants.* (3) A study of the methods of propagation 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.

Students interested in specializing in ornamental horticulture should in addition to the courses listed in the horticulture curriculum elect the following courses: Agronomy 213, 321, 322, Horticulture 303, 332, 363, 403, 453.

Students interested in specializing in Olericulture and Pomology should in addition to the courses listed in the Horticultural Curriculum elect the following courses: Agronomy 213, 321, 322, Horticulture 303, 332, 343, 402, 403, Foods 321.

° Courses offered in odd years only.

°° Courses offered in even years only.

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 vegetables.

°°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 and 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 problems 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.

DEPARTMENT OF HOME ECONOMICS

MATTYE C. FLOWERS, M.S., *Head*

General Information

The department of Home Economics aims to guide students in developing sound and satisfying philosophies 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 includes the following curricula: Child Development and Family Relationships, Clothing and Textiles, Foods and Nutrition, General Home Economics, and Home Economics Education.

A student who transfers from another institution 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 State University Home Economics Club is affiliated with the American Home Economics Association and the Tennessee 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 Future Homemakers of America.

The major purpose of the American Home Economics Association College Chapter 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.

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, 92 of which are in the 300 and 400 series. A minimum of 121 quarter hours must be taken in home economics, and related subjects, 56 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		3	
Foods 111-112		3	3
Chemistry 111-112	4	4	
Home Economics 101-2 or 201	1	2	
Mathematics 111-112	4		3
Music 131			3
Physical Education 11-12-13	1	1	1
	16	16	16

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Education 201	3		
English 211-12-13	3	3	3
Clothing 211	3		
Rel. Art 203		3	
Bacteriology 241	5		
Zoology 202-203		5	5
Psychology 242-243	3	3	
Sociology 211, 221		3	3
Nutrition 211			3
Foods 223			3
Physical Education 20's-50's	1	1	1
	18	18	18

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Psychology 463	3		
Speech 201 or 202			3
Education 462		3	
Clothing 321	3		
Child Development 351	3		
Psychology 312	3		
Home Management 320-322	3	3	
Chemistry 361	4		
Home Economics Education 371A-371B		3	3
Nutrition 311		3	
Sociology 322			3
Philosophy 323		3	
Electives		3	9
	19	18	18

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Related Art 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 or 412			3
Related Art 421	3		
Electives	6	3	6
	18	18	19

OPTION FOR CERTIFICATION OF HOME ADVISERS

Home Economics majors desiring to qualify for Home Advisers with the Farmers Home Administration under the U.S. Department of Agriculture must attend one summer session in addition to the regular four-year schedule. It is recommended that the student attend the summer session following the completion of the sophomore year.

SUMMER SESSION

I	
Course and Number	
Social Administration 341	3
Sociology 221	3
Social Administration 421	3
	9

II	
Course and Number	
Psychology 312	3
Social Administration 471	3
Pol. Sci. 221	3
	9

OPTION FOR GENERAL HOME ECONOMICS

The option in General Home Economics is provided for students who have a decided interest in home economics but do not wish to teach. As a major field, General Home Economics offers a fertile background for the increasing demands of industry, business, advertizing and other services in the profession. Program offerings for the first two years

are identical to Home Economics Education and similar to the other subject matter fields in home economics. This arrangement of the curriculum allows for smooth transition into other types of employment with a minimum of additional preparation.

At least nine quarter hours of home economics electives should be on the 300 and 400 levels.

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Math. 113	3		
Speech 201 or 202			3
Physics 111	3		
Child Development 351	3		
Home Management 300-320-322	3	3	3
Chemistry 361	4		
Home Economics Education 371A-371B		3	3
Nutrition 311		3	
Sociology 322		3	
Philosophy 323		3	
Foods 352	3		
Electives			9
	19	15	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 Mgt. 421-422	7		
Home Economics Education 450		3	
Related Art 421	3		
Clothing 321		3	
Electives (at least 9 hrs on 300-400 level)		6	15
	16	15	15

COURSES IN HOME ECONOMICS EDUCATION

101-2. *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 lecture fall quarter; two lectures, winter 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.

343. *Occupational Training Programs in Home Economics.* (3) A study of the background, development and purposes of occupational training and work experience programs in home economics. Emphasis is placed on federal acts and laws, interpretations, procedures and curriculum implications. Existing programs will be surveyed and studied with implications for projection. Course will include field trips, laboratory experiences, special projects and resource speakers.

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 Teaching 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: 371A. Three lectures.

372. *Special Problems in Home Economics Education.* (3) A critical analysis of personal and academic problems related to teacher preparation will be undertaken. Course is designed for individual and group projects focused on recent research findings and general depth in subject matter. Prerequisite: Home Economics Education 371A.

373. *Home-School-Community Programs in Vocational Home Economics.* (3) Course is based on interpretations and requirements of federal, state, and local regulations in relation to vocational home economics. Topics include the home experience program, extension service, home visitation, family counseling, leadership in Future Homemakers

of America and American Home Economics Association organizations. Opportunities are provided for participation in field trips, demonstrations, individual and community projects.

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.

460. *International Travel.* (3) Study tour of European cultural centers, museums, and historic sites designed to develop an appreciation of the historical and cultural contributions of these countries. Visits include: England, France, Holland, Germany, Austria, Italy, Switzerland, Spain and Portugal.

461. *Educational Leadership in Adult Education.* (3) Philosophy organization and administration of home economics programs for adults and out-of-school youths. Interests and needs of various age and social groups will be studied in relation to methods and materials effective in group work. Findings of latest research and educational media such as radio and television will be emphasized.

463. *Seminar in Home Economics.* (3) Explanation and implications of recent research studies and selected topics in home economics provide the focal points of the course. It is designed for interdepartmental exchange of ideas and includes activities in individual and group research, special readings, discussions, formal writing and seminar reporting.

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, 371B.

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. *Economics for the Family.* (3) Principles and problems associated with production, exchange and use of wealth and their direct relation to the welfare of families. Three lectures.

401. *Management for the Low-Income Family.* (3) Deals specifically with problems of families with very low-incomes and those receiving welfare checks; how to get the most value from food stamps and free commodities. Field trips are arranged where actual conditions can be studied. Three lectures.

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. Must be taken concurrently with H.M. 422. 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. Child Development 351; Foods 111-112-223; Nutrition 311. Six weeks residence 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. Prerequisite Home Management 322.

*433. *Consumer Education.* (3) Includes a study of problems on market practices, the consumer and the market, methods of buying commodities and legislation governing labeling and branding. Three lectures.

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.

COURSES IN RELATED ART & INTERIOR DESIGN

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.

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.

*323. *Spatial Living I—Introduction to Home Furnishings and Interior Decoration.* (3) Planned to stimulate awareness and appreciation for the well-designed home and its furnishings as a background for living; experiences in creating objects for home and personal use.

400. *Spatial Living II—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.

*411. *Art Crafts.* (3) A course for Social Administration majors; designed to present basic principles of various crafts to help prepare students for group leadership in the various aspects of social work. Open to all areas. One lecture and two laboratory periods.

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.

CURRICULUM IN CHILD DEVELOPMENT AND FAMILY RELATIONSHIPS

RUTH A. MCDOWELL, M.Ed., *Coordinator*

The Curriculum in 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 Curriculum Offers Two Options

OPTION I

CHILD DEVELOPMENT AND FAMILY RELATIONSHIPS

This option prepares students for: (1) work with children up to twelve years of age in nursery schools, day care centers and other institutions of various kinds; (2) Child Development and Family Relationships specialists at state and local levels, directors in religious work, girl scout leaders and (3) home and family living. One quarter of work is spent doing a study tour at another college or university with an outstanding program

* Approved for Graduate Credit.

Freshman Year	Quarter Hours Credit		
Name of Course	*I*	*II*	*III*
English 101-2-3	3	3	3
Clothing 112-13	3		3
Art 133			3
Business 102		3	
Chemistry 111-112	4	4	
Home Ec. 101-2-3 or 201	1	2	
Mathematics 111-12	4		3
Music 131			3
Physical Ed. 11-12-13	1	1	1
Child Dev. & Family Rel. 101		3	
	16	16	16

Sophomore Year	Quarter Hours Credit		
Name of Course	*I*	*II*	*III*
Education 201	3		
English 211-12-13	3	3	3
Zoology 202-203		5	5
Bacteriology 241	5		
Psychology 221-222-243	3	3	3
Speech 201 or 202			3
English 261		3	
Nutrition 211			3
Art 201	3		
Anthropology 221		3	
Phy. Ed. 20-50	1	1	1
	18	18	18

Junior Year	Quarter Hours Credit		
Name of Course	*I*	*II*	*III*
History 202-203	3	3	
Foods & Nut. 433	3		
Home Mgt. 323-421-422	3	3	4
Economics 304			3
Child Dev. & Family Rel. 353-452-465	3	3	3
Child Dev. & Family Rel. 321-322	3		3
Psychology 311		3	
Electives	3	3	3
Psychology 263		3	
	18	18	16

Senior Year	Quarter Hours Credit		
Name of Course	*I*	*II*	*III*
Education 465	3		
Biology 311	4		
Sociology 452			3
Child Dev. & Family Rel. 463-461 or 462	3		3
Child Dev. & Family Rel. 460-466	3		3-6
Child Dev. & Family Rel. 464	3		
Senior Project 450			3
Electives		18	3
	16	18	15-18

OPTION II

CHILD DEVELOPMENT AND FAMILY RELATIONSHIPS

TEACHER EDUCATION CURRICULUM FOR KINDERGARTEN AND ELEMENTARY SCHOOLS

Child Development majors desiring teacher certification in public school kindergartens and elementary school grades one through nine will, in addition to required Child Development courses (listed below), follow the Elementary Education Curriculum (School of Education) with the following substitutions:

Bacteriology 241	for Natural Science 123
Child Development 460	for Education 381
Related Art 332	for Education 333
Child Development 101	for Education 101

Required Child Development Courses: 101, 321, 322, 332, 353, 371, 460, 461, 463, 464, Family Relationships 463.

COURSES IN CHILD DEVELOPMENT AND FAMILY RELATIONSHIPS

101. *Principles and Concepts of Child Development.* (3) A study of the basic principles and concepts of growth and development which serve as a foundation in understanding children.

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, use, and presentation 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) An interpretation and involvement with (1) art learning activities, (2) self-directed activities and (3) integrated activities with

emphasis on The Role of Creative and Play Materials for the young child. Related activities and experiences with various old and new materials, and correlation of contemporary trends in Art Education. Observation and Participation in The Nursery School or Kindergarten.

351. *The Young Child and His Family.* (3) Emphasis placed upon development and behavior from conception through adolescence. Consideration of family interaction which is basic to the formation of attitudes and behavior. Observation of developmental and behavioral differences and methods of working with children. Two lectures and two laboratory periods.

352. *Nursery School Observation.* (1) Observation in Nursery school along with Course 351. Required of majors only.

353. *Early Periods of Development—Infancy and Babyhood.* (3) Emphasis is placed on factors affecting prenatal development. Includes a study of the physical, intellectual, emotional and social needs as well as variables affecting development from birth to 2 years of age. Two lectures and one laboratory which includes observation and participation. Prerequisites CDFR 101 or special permission from the instructor.

371. *Methods and Techniques in Teaching Family Relationships.* (3) Concerned with methods and techniques of teaching family-social relationships. Attention is given to new materials and equipment currently being used by the Federal government in various programs concerned with family life. Three lectures.

450. *Senior Project Writing.* A requirement of the University to be taken by every major in the department.

452. *Child Practicum.* (3) (Middle Periods)—Observation and participation in the directing and guiding of young children in preschools, in the home, and in other situations. Prerequisites: Majors of Option I—CDFR 101-353; Majors of Option II—CDFR 101-251; Home Ec. Majors—CDFR 251 along with Nursery School Observation 352.

• 460. *Nursery School and Kindergarten Methods.* (3) Includes methods, materials and modern trends in teaching in the nursery school and kindergarten. Organization, equipment and housing are studied in relation to the development of children at these levels.

461. *Advanced Child Development.* (3) A study of development of the young child in different socio-economic levels with emphasis on conceptualization, interpretation of growth norms, and adult-child interaction. Prerequisite: Psy 242.

462. *Honors Child Development and Family Relationships.* (3) An intensive investigation of a special area in Child Development or Family Relationships. Opened to advanced juniors and seniors showing special ability in CDFR.

•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 to adolescence (5-12 years). Open to men and women of all schools. Prerequisite: CDFR 351.

•465. *Survey of Development Throughout Adulthood.* (3) A study of the physical, psychological, and social development from early adulthood through maturity and old age. Includes characteristic adjustment problems in these periods of life. Prerequisites: 3 credits in CDFR, psychology, or sociology.

•466. *Internship or Fieldwork in Child Development.* (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 the coordinator of CDFR.

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.

• Approved for Graduate Credit.

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-nine (199) 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	*Quarter Hours Credit*		
Name of Course	*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	4	3	3
Rel. Art 201			3
H. Ec. Ed. 101-102	1	2	
Phy. Ed. 11-12-13	1	1	1
	16	16	17

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 211-12-13	3	3	3
Cloth. 211-12	3	3	
Psych. 221-222-323	3	3	3
**French 101-2-3 or 201-2-3	3	3	3
Rel. Art 203			3
Foods 111-12	3	3	
Music 131 or Art 133			3
Phy. Ed. 20s & 50s	1	1	1
	16	16	16

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Cloth. 313-320-321	3	3	3
CD & FR 322-251	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
Sociology 221-322	3	3	
	18	15	18

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Cloth. 401-413	3	3	
Sr. Proj. Writing 450		3	
Related Art 323	3		
CD & FR 463	3		
English 301-2-3 or 321-22	3	3	3
Cloth. Elective (300-400 level)		3	3
H. Mgt. 421-422			7
General Electives (300-400 level)	6	6	3
	18	18	16

** To be taken if not on high school record.

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.

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. Two lectures and one laboratory.

302. *Clothing of the Family.* (3) Based on the needs of the 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 lectures and one laboratory.

312. *Applied Dress Design.* (3) Features the application of decorative design in clothing construction, pattern adaptation, and originality. Prerequisite: Related Art 203. Two lectures and one laboratory.

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. Two lectures and one laboratory.

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 lecture and two laboratory periods.

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. Two lectures and one laboratory.

*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 G. TOWNS, M.S., *Co-ordinator*

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 203 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	6 hours	Organic	4
Home Management	9 hours	Human Physiology	10 hours
Child Development	4 hours	Biochemistry (Physiological)	5 hours
		Mathematics	9 hours
		Bacteriology	5 hours

Students desiring the degree of bachelor or arts must elect to take the required years of a modern foreign language as specified under requirements for the bachelor of arts degree.

* Approved for Graduate Credit.

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	4	3	3
Physical Ed. 11-12-13	1	1	1
	16	15	15

Sophomore Year	Quarter Hours Credit		
Name of Course	*I*	*II*	*III*
English 211-212-213	3	3	3
Zoology 202-203		5	5
Clothing 112	3		
Bacteriology 241	5		
Psychology 221-242-243	3	3	3
Nutrition 211			3
Foods 223	3		
Education 201		3	
Art 133 or Music 131		3	
Physical Ed. 20s-50s	1	1	1
	18	18	15

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 351-352	3	1	
Accounting 211-212	3		
Economics 211-212		3	3
Home Economics Education 371A-371B		3	3
Chemistry 361	4		
	19	16	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 421-422		3	4
Electives		3	6
	18	18	19

COURSES IN FOODS AND NUTRITION

Foods

111-12. *Food Buying and Preparation.* (6) The study of foods, including standards for selecting, 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. *Institution 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 conventional and new methods of food preservation. Some laboratory work is done in freezing, and canning of foods. Two lectures and one laboratory period. 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.

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 for Elementary and Secondary Teachers.* (3) A general course in nutrition and its relation to good health. The principles of nutrition in terms of the essentials of a well-balanced diet for different age groups and their use by the body are emphasized. 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. *Diet Therapy.* (3) Designed to study the modifications of the normal diet in the treatment of disease. Prerequisite: Nutrition 311. Two lectures and one laboratory period.

THE DEPARTMENT OF NURSING EDUCATION

DOROTHY M. COLEY, M.S., *Head*

The Department of Nursing Education offers a Two-Year Program leading to the Associate in Arts Degree with a major in Nursing.

ADMISSION REQUIREMENTS

Applicants must meet all other general requirements for admission to the University. A minimum grade of "C" in the following high school courses is required: 3 units of English and one unit each of American History, general mathematics, physics, and chemistry. Applicants who are 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. A minimum average score of 50 is required. Applicants must have a successful personal interview with a member of the Nursing Education faculty.

* Approved for graduate credit.

DEGREE REQUIREMENTS

Candidates for degrees must complete a minimum of 118 hours of prescribed work for the Three Year Plan and 115 hours for the Two Year Plan; 54 quarter hours of general education and 64 quarter hours in nursing for the Three Year Plan student and 61 quarter hours for the Two Year Plan student.

The members of the nursing faculty offer instruction and guidance in laboratory experience at George W. Hubbard Hospital—Meharry Medical College, Veterans Administration, Clover Bottom Hospital and School, Central State Hospital, Bill Wilkerson Speech and Hearing Center, Lentz Health Center, and Junior League Home for Crippled Children.

The courses in nursing are combined with theoretical and laboratory experience to prepare the student to give direct nursing care of patients in the five major clinical areas: medicine, surgery, obstetrics, pediatrics and psychiatry.

The general education courses consist of English composition, speech, physical education, nutrition, social psychology, sociology, philosophy, anatomy & physiology, bacteriology, and child development, and nine hours of general educational electives.

A student in good standing must maintain a two point average and acquire a minimum grade of "C" for each course in nursing.

Candidates for graduation must file "Second Year" forms with the Office of Admissions and Records at least six months prior to the date of graduation.

Candidates for graduation must receive a score of fiftieth percentile in the following National League for Nursing Comprehensive Tests:

Maternal-Child Health Nursing
Psychiatric Nursing
Medical-Surgical Nursing—I
Medical-Surgical Nursing—II

Graduates are eligible to take the State Board Examination to obtain the Registered Nurse (R.N.) Certificate.

THREE YEAR PLAN

The Three Year Plan of nursing will provide the student who is unable to complete the program within two years an opportunity to earn an Associate of Arts Degree in Nursing.

The following students will be advised to enter the Three Year Plan:

Students who have an ACT score below 12.

Students who are employed on a 40 hour per week basis. Students in this category who score 17 ACT and above may be considered as candidates for the Two Year Plan.

Students who meet the requirements for the Two Year Plan but who do not enter the University until after the Fall Quarter will be admitted to this plan.

Course Offerings

FIRST YEAR

Fall Quarter	*Credit*
English 101	3
Physical Ed. 11	1
Nursing Orientation 101A	1
Nursing 104 (8 hrs. lab., 3 hrs. lec.)	5
Zoology 202	5
	15

Winter Quarter	*Credit*
English 102	3
Physical Ed. 12	1
Nursing Orientation 102A	1
Nursing 105 (3 lec. hrs. 8 hrs. lab.)	5
Zoology 203	5
	15

SECOND YEAR

Fall Quarter	*Credit*
Nursing 201 (4 hrs. lec. 16 hr. lab.)	8
General Bact. 241	5
	13

Winter Quarter	*Credit*
Nursing 202 (4 hrs. lec. 16 hrs. lab.)	8
C.D. 351 Young Child & Family	3
Philosophy	3
	14

Spring Quarter	*Credit*
English 103	3
Physical Ed. 13	1
Nursing Orientation 103A	1
Nursing 106 (3 hr. lec., 12 hrs. lab.)	6
Nuntrition 211	3
	14

Spring Quarter	*Credit*
Nursing 203 (5 hrs. lec. 16 hrs. lab.)	9
Social Psychology 351	3
General Bd. Elective	3
	15

Summer Session I	*Credit*
Nursing 107 (4 hrs. lec. 16 hrs. lab.)	4
Speech 202	3
	7

Summer Session I	*Credit*
Nursing 204 (6 hrs. lec. 16 hrs. lab.)	5
General Ed. Elective	3
	8

Summer Session II	*Credit*
Nursing 108 (4 hrs. lec. 16 hrs. lab.)	4
Sociology 211	3
	7

Summer Session II	*Credit*
Nursing 205 (4 hrs. lec. 16 hrs. lab.)	4
General Ed. Elective	3
	7

COURSES IN NURSING

Nursing Orientation. 101A-102A-103A. (3) A course required of all freshmen registered in the Department of Nursing Education designed to orientate the student to the program at Tennessee State University.

Nursing Orientation. 101B-102B-103B. (6) Same as above but some emphasis will be placed on an introduction to basic nursing procedures.

Nursing 104 Fundamentals 1. (5) Is a basic course in nursing designed to help the student develop an understanding of the physical, biological, social, and behavioral sciences. The student is given an opportunity to apply fundamental concepts gained from knowledge of these sciences to all clinical nursing areas. Emphasis is placed on meeting the needs common to all patients.

Through a variety of approaches such as the use of problem solving process, developing skills in interpersonal relations, multiple assignments, pre- and post-conferences in the clinical laboratory, experience.

Nursing 105 Fundamentals 2. (5) A continuation of 104. Nursing 105 introduces basic causes of disease and focuses upon the body's physical and mental responses to illness. The course focuses upon the physical and psychosocial effects of illness on the individual at different levels of development.

Medical, surgical, pediatric, and mental health concepts are integrated in the course. Clinical laboratory experience—8 hrs., theory—3 hrs.

Nursing 106 Fundamentals 3. (6) A continuation of 105. 3 hrs. theory, 12 hrs. clinical laboratory experience.

Nursing 107 Fundamentals 4. (4) Designed to assist the student to develop knowledge and understanding of basic psychiatric nursing principles and skills. The course includes content in regard to the needs, feelings and behavior of the student as well as those of the patient. The etiology, treatment, and prevention of mental illness are included. The behavioral approach to psychiatric problems is emphasized. Learning experiences in a state psychiatric hospital are provided with concurrent theoretical presentation. Individual conferences will be held to assist the student in evaluation of the patient's actions and her personal actions.

Nursing 108 Fundamentals 5. (5) Is a continuation of 107. Offered Summer Session II. Field trips will be made during this session. 12 hrs. clinical laboratory & 4 hours theory each Summer Session.

Nursing 201 Advanced Nursing 1. (8) A study of the nursing care of the adult patient with acute and chronic health problems. Includes the principles of nursing care derived from the pathology and physiology of disease. Provides the student with opportunities to apply knowledge and skills in the care of ill patients with identical or

similar illnesses. The student is stimulated to think critically, to solve nursing problems, to identify basic nursing functions needed to help patients to cope with their problems, and to make appropriate judgments. Individual conferences will be held to assist the student in evaluation of her personal actions. Each student will participate in pre- and post-conferences, field trips. (7 hours of theory & 16 hours of clinical laboratory)

Nursing 202 Advanced Nursing 2. (8) Major concern is with the normal aspects of maternal and infant nursing care, with consideration given to the complications and deviations from the normal.

The family health concept is used because each student is a potential parent and the family is the basic unit in society. The effect of the normal as well as the effect of complications and deviations is stressed, by including the physiological, psychological, social and spiritual needs of the mother, infant and other members of the family. Various clinical areas are provided so that the student under supervision, can observe and/or assist in the care of the mother and infant at various stages of the maternity cycle: physician's office, prenatal clinic, postpartum clinic, well infant clinic, planned parenthood clinic, and other community agencies whenever indicated. (4 hours of theory & 16 hours of clinical laboratory.)

Nursing 203 Advanced Nursing 3. (9) A study of the complex nursing care problems of the child from the toddler through adolescence, and the effect the child's illness has on the family. Emphasis is placed upon the parent-child nurse-relationship. (5 hours theory & 16 hours of clinical laboratory.)

Comprehensive nursing examinations will be given during the fifth week of this experience. In order to be considered as a candidate for graduation, each student must attain a minimum score at the fiftieth percentile.

Nursing 204 (5) & 205 (4) Advanced Nursing 4 & 5. A planned experience designed to provide opportunities for the student to cooperate with members of the health team in the nursing care of the seriously ill. Includes experiences designed to increase the student's confidence in her ability to function as a contributing member of the health team.

Each student will particiapte in pre and post-conferences, seminars, and conferences under the supervision of faculty. Nursing 204—offered Summer Session I—6 hours of theory & 16 hours clinical laboratory. Nursing 205—offered Summer Session II—4 hours of theory and 16 hours of clinical laboratory.

SCHOOL OF ARTS AND SCIENCES

THOMAS E. POAG, Dean

Faculty:

Department of Biological Sciences
Gladys B. Adams, James A. Campbell, Alvin C. Coleman, Hubert B. Crouch, Dorothy S. Exum, Richard A. Hogg, Jacqueline Hunter, Rother R. Johnson, Prem S. Kahlon, Henry Arthur Kean, Eva B. Landers, John M. Mallette, Alexander C. Wells, and Henderson K. Wood.

Department of Chemistry
D. Conrad Gandy, Lonnie Haynes, R. I. Mani, Audrey M. Prather, Gilbert W. Senter, Elizabeth Shute, Doris E. Simmons, Ruby Torrey, and Rudolph Woodberry.

Department of English
Leonard C. Archer, Alberta Barrett, Novella Bass, Mary Carter, Hazel M. Cothran, Helen S. Cotton, June Crawford, Doris M. Daniels, Erma G. Dozier, Samuel J. Harper, Juanita E. Horner, Helen R. Houston, Robert J. Hudson, Erna J. Jackson, Alma Dunn Jones, Hinton C. Jones, Crawford B. Lindsay, Hortense D. Lloyd, Katie Miller, Tyree J. Miller, Dorothy J. Samuels, Earl L. Sasser, Asalean Springfield, Mattie B. Turner, Vesta R. Wheaton, McDonald Williams, and Rosa L. Williams.

Department of History and Political Science
Edward N. Cullum, George L. Davis, Sandra H. Franklin, Jerome W. Jones, Vivienne Killingsworth, Lois C. McDougald, Thomas McDowell, Jotsna Paruchuri, H. Leon Prather, Samuel H. Shannon, Alonzo T. Stephens, Joseph H. Udelson, and Raleigh A. Wilson.

Department of Modern Foreign Languages
Wendolyn Y. Bell, Martin O. Deschenes, Joan Elliott, Jas. A. Hamlett, Mary E. Johnson, Judith F. Lee, Virginia S. Nyabongo, James E. Williams, and Carolyn F. Wyatt.

Department of Physics and Mathematics
Sterlin N. Adams, Frederick H. Binford, Alger V. Boswell, Calvin B. Browne, Perry A. Chapdalaine, Roberta E. Dabney, Vivian J. Fielder, Pearlie M. Gasaway, Sadie C. Gasaway, Frances J. Howard, Patricia G. Hull, Clinton E. Jones, Peter Lai, Nancy R. Ledet, Mary Y. Love, Win Myint, Frank Orndorff, Annie G. Sasser, Donald D. Savoy, Theodore Sykes, James K. Wang, and Charles A. Williams.

Department of Science Education and Geography
Ira Baxter, Jimmuir Cotton, William Cumming, Berry Hempstead, Henry H. Hymes, William N. Jackson, Lauree F. Lane, Alice C. Smith, Chris L. Terrill, Alfred C. Tyler, Mazie O. Tyson, and Katie J. White.

Department of Sociology
Alice D. Archer, John Braser, Florence Ewing, Ralph H. Hines, Raymond H. Kemp, Mabel W. Leathers, Annie B. Martin, Merle Miles, Edna C. Masuoka, J. Masuoka, Robt. W. Meadows, Kathleen H. Poag, Chas. A. Ramsey, Ernest Rhodes, Nora Lee Roy, Dorothy A. Stephens, Edward S. Temple, and Sherman N. Webster.

Department of Speech and Drama
Robert F. Coleman, Robert H. Countess, William D. Cox, R. Goldman, Troy L. Jones, Russell J. Love, Thomas E. Poag, Jay W. Sanders, William J. Simmons, Bertha R. Smith, Betty Van Buren, Jamye C. Williams and James A. Womack.

Honors Program
Thomas J. Anderson, Helen S. Cotton, P. Mayo Dansby, Richard A. Hogg, Robert J. Hudson, Mildred S. Hurley, Alma Dunn Jones, Calvin E. King, Crawford B. Lindsay, Hortense D. Lloyd, Lois C. McDougald, John M. Mallette, Edna C. Masuoka, Tyree J. Miller, Donald D. Savoy, Muriel H. Simmons, Jamye C. Williams, McDonald 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 Bachelor 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 education 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, Science Education, Mathematics, Modern Languages, History and Political Science, 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 specialists in somewhat restricted fields of specialization.

General Requirements for a Bachelor's Degree

Any candidate for a Bachelor's degree must complete a minimum of 192 quarter hours (with a minimum average of "C") which include:

The General Education or 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 physical education courses

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 sophomore English 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 ..... 42 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 (12-30 hours) ..... 21 qr. hrs.
(See Foreign Language requirement below)
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, Physics, or Political Science.

Modern Language Requirements 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 thirty (30) 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.

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 LABORATORY TECHNOLOGY

For description of program, see Department of Biological Sciences, page 122.

COMBINATION CURRICULA FOR THE STUDY OF MEDICINE AND DENTISTRY

For description of program, see Department of Biological Sciences, page 122.

Arts and Sciences Courses Required in All Departments

101. *Freshman Orientation.* (1) This course covers the four broad areas of Freshman Orientation: Introduction to College; Academic Adjustment; Educational and Vocational Planning; and Personal Adjustment. The concluding part of the course encourages the undergraduate to examine the values he lives by and to recognize their importance to his success not only in College but throughout life. 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 departmental sophomore comprehensive examination over biological principles 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 departmental 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 point average of 2.25 in their teaching fields. 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, and chemistry 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 requires 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 56 quarter hours of major courses as described below in the curriculum, 15 of which must be on the 300 and 400-level and 18 quarter hours of German or French or equivalent.

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 42 quarter hours, 34 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 42 hours plus one year of general chemistry.

Minors in the Department must maintain a point average of 2.25. No grade less than "C" in the minor will count toward meeting minor requirements of the Department of Biological Sciences.

LOWER DIVISION

JAMES A. CAMPBELL, D.Ed., *Chairman*

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	5	5	5
Math. 161-2		5	5
Eng. 101-2-3	3	3	3
Chem. 111-2-3	4	4	4
P. E. 11	1		
Art 131 or Music 133	3		
Orientation	1		
	17	17	17

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Microbio. 240	5		
Botany 112-3		5	5
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
P. E. 12-13, 21-43	1	1	1
Biology 251			0
	19	19	19

BASIC CURRICULUM FOR PROFESSIONAL MAJOR

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Biology 111-2-3	5	5	5
Math. 161-2		5	5
English 101-2-3	3	3	3
Chemistry 111-2-3	4	4	4
Physical Educ. 11	1		
Art 131 or Music 133	3		
Orientation	1		
	17	17	17

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Microbio. 240	5		
Botany 112-3		5	5
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
Physical Educ. 12-13, 21 to 43	1	1	1
Biology 251			0
	19	19	19

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
P. E. 21-43	1	1	
	18	18	17

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Zoology 432			4
Biology 473	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			3
Bio. 497-8-9 (Seminar)	2		1
Health or Nutrition			3
	18	15	18

• A student who has two or more units of the foreign language in high school and passes the entrance proficiency test will begin the 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.

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
P. E. 21-43	1	1	
	18	18	17

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Bot. 411	4		
Microbio.		4	
Biol. 411 or 441 or 473 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

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 and 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
P. E. 21-43	1	1	
	18	18	17

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Zoology 432		4	
Biology or Zoology Elective (400-Level)	4		
Biology 451			0
Electives	12	12	12
Bio. 497-8-9 (Seminar)	1	1	1
Bio. 473			4
	17	17	17

PROVISION FOR PROFESSIONAL TRAINING IN MEDICINE, DENTISTRY, AND MEDICAL TECHNOLOGY

Through affiliations with Meharry Medical College and the Vanderbilt-VA School of Medical Technology, Tennessee State University has several curricula as joint programs with these Institutions which qualify students for the bachelor's degree. Successful completion of these joint programs is contingent to acceptance at the respective Institutions. However, a major in the biological sciences who successfully completes the four year program at Tennessee State University qualifies for entrance into a training program for medicine or dentistry or medical technology.

COMBINATION CURRICULA FOR THE STUDY OF MEDICINE, AND DENTISTRY

Curricula preparatory for the study of medicine and dentistry are offered at Tennessee State University in cooperation with Meharry Medical College. These curricula are point programs between the two institutions and qualify students for the bachelor's degree.

BIOLOGY—MEDICAL COMBINATION CURRICULUM

Leading to the Bachelor's Degree with a Major in Biology

The first part of this joint curriculum is offered regularly enrolled students at Tennessee State University who are pursuing a Bachelor of Arts or science curriculum with a major in the Biological Sciences.

The first two years of this curriculum consist of the Basic Curriculum for Professional Major in the Biology Lower Division. The third year consists of the Junior Year of either the curriculum for Professional Major in Zoology or the Curriculum for Professional Major in Botany and Microbiology of the Upper Division of Biological Sciences.

The first three years at Tennessee State University include courses designed (1) to offer adequate training in the basic sciences and (2) to promote broad cultural development. The student is expected to meet the standards of the University and the Department of Biological Sciences and to complete a minimum of 144 quarter hours with a minimum of 33 quarter hours on the 300 and 400 levels.

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 State University for the Bachelor of Arts or Science degree. Upon joint recommendation of the Meharry School of Medicine and the Tennessee State University, the student becomes a candidate for the Bachelor of Arts or Science degree. The degree is awarded by the Tennessee State University.

BIOLOGY—DENTAL COMBINATION CURRICULUM

Leading to the Bachelor's Degree with a Major in Biology

The first part of this joint curriculum is offered regularly enrolled students at Tennessee State University who are pursuing a Bachelor of Arts or Science curriculum with a major in the Biological Sciences.

The description of the first three years of this joint curriculum is the same as for the Biology-Medical combination curriculum (see above).

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 State University for the Bachelor of Arts or Science degree. Upon joint recommendation of the Meharry School of Dentistry and the Tennessee State University, the student becomes a candidate for the Bachelor of Arts or Science degree. The degree is awarded by the Tennessee State University.

CURRICULUM IN MEDICAL TECHNOLOGY

Leading to a Bachelor of Science Degree in Medical Technology and a Certificate in Medical Technology

Tennessee State University has affiliations with the Vanderbilt-Veterans Administration School of Medical Technology and the School of Medical Technology of Hubbard Hospital, Meharry Medical College for the purpose of participation in their medical technology programs. This curriculum consists of a three year designated program at Tennessee State University and the fourth year to consist of the 12 month medical technology program at either the Vanderbilt-V.A. School of Medical Technology or the School of Medical Technology of Hubbard Hospital, Meharry Medical College. Successful completion of the joint four year program results in a Bachelor of Science Degree in Medical Technology, to be granted by Tennessee State University, and a Certificate of Medical Technology to be granted by Vanderbilt-V.A. School of Medical Technology or the School of Medical Technology of Meharry Medical College contingent to acceptance in either one of these institutions. Approximately 80 quarter hours of credit, transferred from the medical Technology program, constitute the fourth year credit toward the Bachelor of Science Degree in Medical Technology with a major in Biology.

BIOLOGY—MEDICAL TECHNOLOGY CURRICULUM

First Three Years at Tennessee State University with a Major in Biology

FRESHMAN YEAR

Course and Number	*Quarter Hours*
Fresh. English 101-2-3	9
Animal Biology 111-12-13	15
Gen. Chem. 111-12-13	12
Mathematics 161-2	10
Phy. Ed. 11-12-13	3
Total Quarter Hours	49

JUNIOR YEAR

Biology Electives 300-400 level	12
Physics 211-12-13	12
Organic Chem. Sur. 361	4
Social Scien. (Elect.)	6
French or German 201-2-3	9
Art or Music or Phil. (Elect.)	3
Total Quarter Hours	46

SOPHOMORE YEAR

Course and Number	*Quarter Hours*
World Literature 211-12-13	9
Bacteriology 240	5
Analy. Chem. 211-12-13	12
Soc. Sciences (Elec.)	6
Art or Music or Phil. (Elec.)	3
French or German 101-2-3	9
Beg. Typewriting 211	3
Phy. Ed. (Elect. 21-43)	3
Total Quarter Hours	50

SUMMARY OF FIRST THREE YEARS

Total Quarter Hours	145
Basic Scien. Cour. with Lab.	72
General Education Courses	73

Fourth Calendar Year (52 Weeks)

MEDICAL TECHNOLOGY CURRICULUM AT THE SCHOOL OF MEDICAL TECHNOLOGY, MEHARRY MEDICAL COLLEGE

Course	Total Clock Hours	Equivalent Quarter Hours Credit
Orientation	40	0
Hematology	440	13
Blood Bank	264	8
Clinical Chemistry	528	16
Bacteriology	528	16
Serology	88	3
Histology	88	3
Pulmonary Function	44	2
Electrocardiography	44	2
Total Hours	2064	63

Fourth Calendar Year (52 Weeks)

MEDICAL TECHNOLOGY CURRICULUM AT VANDERBILT-VETERANS ADMINISTRATION SCHOOL OF MEDICAL TECHNOLOGY

Course	Total Clock Hours	Equivalent Quarter Hours Credit
Bacteriology	330	12
Biochemistry	350	13
Blood Bank	170	6
Electrocardiography	65	2
Hematology	280	10
Histopathology	175	6
Parasitology	140	5
Radioisotopes	70	3
Serology	110	4
Urinalysis	100	3
Total Hours	**1790**	**64**

* Genetics, comparative anatomy and parasitology are strongly recommended.

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.* (15) 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.

473. *Principles of Ecology.* (4) Fundamental ecological principles, with special reference to levels of organization, population, structural adaptations, functional adjustments and other factors affecting the distribution of organisms. Prerequisites: Biology 111-12-13 and Botany 112-13. Three one hour lectures and one 4 hour laboratory per week.

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 Anatomy and 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, and Nursing 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.

DEPARTMENT OF CHEMISTRY

LONNIE HAYNES, 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 and (2) to offer meaningful and satisfactory service courses to other departments in 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 miniumum 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
German (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 111-12-3	4	4	4
English 101-2-3	3	3	3
Mathematics 161-2-3	5	5	5
Physical Education 11-12-13 or Air Science	1	1	1
Foreign Lang. I	3	3	3
Orientation	1		
	17	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 or Air Science	1	1	1
World Literature 211-12-13	3	3	3
	16	16	16

Junior Year	*Quarter Hours Credit*		
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

100. *Basic Chemistry.* (3) Study of the fundamentals of chemistry and their application to some problems of a biological nature. Representative topics include: chemical measurements; states of matter; solutions; carbohydrates; fats; proteins and vitamins; chemistry of digestion. Offered for non-science majors only.

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.

*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. 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.

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 of 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 211-2-3, Mathematics 261-2-3, and Physics 221-2-3; or permission of instructor. 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.

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

* Must be taken in sequence.

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 majors in the teacher education program must complete 42 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. or AFROTC	1	1	1
Orientation	1		
	17	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. or AFROTC	1	1	1
History 201-2		3	3
	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			15
Electives	3	6	
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
Matthematics	3	3	3
Health 211-12	3	3	
Art 133			3
P. E. or AFROTC	1	1	1
Orientation	1		
	17	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. or AFROTC	1	1	1
Foreign Language	3	3	3
	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

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.

N.B.: The requirement in American History may be waived for those students whose transcripts show that they received one year of credit for this subject in high school.

101-2-3E. *Ideas and Their Expression.* (12) The basic aims of this course are (1) to improve student writing and (2) to develop in the students both interest and sufficient literary sensitivity to enable them to read with understanding and pleasure.

The students will explore several themes—"Choice and Temptation", "Responsibility", "Power", "Love", and "Alienation" —as they are developed in literature with examples drawn from contemporary authors like James Baldwin, Eugene O'Neil, Ernest Hemingway and E. E. Cummings.

Some time is also devoted to other forms of artistic expression with emphasis on class discussion rather than lecture. The flexible structure is determined by student interest. (General orientation is included).

181H-2-3. *Honors Freshman 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.

211E-212E-213E. *Ideas and Their Expression—II.* (9) A study of literature and the Arts. The primary objective is to develop within the students a critical appreciation for literature and the other art forms. A secondary objective is the continuous development of the communication skills. Prerequisite: English 101E-102E-103E.

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. *Children's Literature.* (3) (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.

271. *Advanced Composition.* (3) A course concerned with the application of the skills of communication. Available to students who desire training beyond the 9 required hours in Freshman English.

281H-282H-283H. *Honors World Literature.* (9) An honors course in world literature designed for students with special competence in English to work at an advanced level.

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 emphasizing the different roles of communication in operating management. One of the following courses is a prerequisite for English 322; English 271-272-273, or 321.

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 thought 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.)

324. *Technical Report Writing* (3) The fundamentals of written reports required in modern engineering, business and science. Emphasis on organization, planning and arrangement of material to include: grammar, sentence structure, and paragraphing. The supplementary use of graphs, charts, sketches, diagrams, drawings, tables and other visual aids to present ideas clearly and concisely is encouraged. Form and content of technical literature available in the library are studied. Prerequisite: English 103.

361-362-363. *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.

400. *Senior Seminar.* (3) A survey of current problems in English. Includes group discussions, lectures, and short papers on topics selected according to student interests and needs. Three class meetings per week. Taken in lieu of Senior Project. Prerequisite: Senior standing.

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 Progess. 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.

454. *Modern English Grammar.* (3) Introduction to modern linguistic science and application to the "newer" theories of grammar, application of structural linguistics to reading, writing, speaking, and listening.

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.

473. *English Education.* (3) Designed primarily for the in-service teacher. Review of recent research studies chiefly in composition, grammar, and literature and the possible implications for re-examination of methodology of English teaching.

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.

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 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 adequate 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).

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 includes History 121-2-3; History 201-2-3; 301-2-3; 331; 341-42; 371; 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 221-22-23. A major will complete a minimum of 45 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 or 42; History 491, 492 or 493. 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 36 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. Non teaching minor 27 hours.

Description of Programs

Students may select the program, Bachelor of Science with Teacher Education. The Bachelor of Science curriculum requires 9 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 average.

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
History 121-2-3	3	3	3
Science (Biology, Chemistry, or Natural Science)	4	4	4
Mathematics 111-2-3	4	3	3
Physical Ed. 11-12-13 or Air Science I (Men)	1	1	1
Orientation	1		
Social Studies		3	3
	16	17	17

Sophomore Year	Quarter Hours Credit		
Name of Course	*I*	*II*	*III*
English	3	3	3
Foreign Language	4	4	4
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 or Air Science II (Men)	1	1	1
	17	17	17

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	3
Minor	3	3	9
Social Studies		3	
Geog. 271-2-3 or Geog. 391, 411, 412	3	3	3
Foreign Language	3	3	3
	18	18	18

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)	3		6
History 491-2-3	3	3	3
	15	15	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 incomplete 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

Note: All students must earn 67 hours at 300-400 level.

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. All students must earn 67 hours at 300-400 level.

CURRICULUM FOR TEACHER EDUCATION IN HISTORY

Freshman Year	Quarter Hours Credit		
Name of Course	I	II	III
English 101-2-3	3	3	3
Math 111-12	4	3	3
Geography 171			3
Biology, Science Education, Chemistry or Physics	4	4	4
Art 133, Health 151		3	3
History 121-22-23 or 181-2-3	3	3	3
Phy. Ed. 11-12-13 or Air Science (Men)	1	1	1
Orientation	1		
	16	17	17

Sophomore Year	Quarter Hours Credit		
Name of Course	I	II	III
American History 201-2-3 or Honors History 281-2-3	3	3	3
English 211-12-13	3	3	3
Education 201	3		
Psychology 242-43		3	3
Foreign Language French or Spanish	4	4	4
Phy. Ed. 20's-50's or Air Science	1	1	1
Sociology 211-12-13	3	3	3
	17	17	17

NOTE: Students must take and pass the Sophomore Examination, other requirements, and complete forms for admission to the teacher education program at the end of the sophomore year.

Students will not take any 300 level education courses unless above requirements are completed.

Junior Year	Quarter Hours Credit		
Name of Course	I	II	III
History 341 or 342	3		
Political Science 221 & 223		3	3
History 301-2-3	3	3	3
Education 301	3		
Education 312		3	
Education 387			3
Speech 201, 202 Music 131	3	3	3
Political Science 221-22-23	3	3	3
History 371 (Teaching of History & Political Science)	3		
	18	15	15

Senior Year	Quarter Hours Credit		
Name of Course	I	II	III
Education 462	3		
Psychology 463	3		
History 300 (Electives)	3	6	
Senior Project 450	3		
Political Science 300's or 400's	3	3	
American Col. Hist. 331		3	
Sociology or Geography 172, 173	3	3	
Student Teaching 472			15
Hist. 491 or 492, or 493		3	
	18	18	15

NOTE: During the quarter a student takes Student Teaching 472, no additional courses may be taken.

A student must have had all courses in Education and History 121-2-3 or 181-2-3, History 201-2-3, or 281-2-3; History 301-2-3; 341 or 342; and History 371 and 491 or 492 prior to taking Student Teaching.

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 Growth of Civilization.* 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 Growth of Civilization.* The Course of Civilizations: The Early Middle Ages, Later Middle Ages—Man's development in Asia, Europe, Mediterranean, Africa and the Middle East and the Western Hemisphere.

183-H. *Honors Growth of Civilization.* The Course of Civilizations: Renaissance and Reformation, Absolutism, Rationalism Commercialism, Nationalism, Industrialism, Democracy and the Age of Total War and Revolution to the Present.

281, 282, 283-H. *Honors American History.* (9) An intensive and extensive study of American history from the earliest stages to the present. Great emphasis is placed upon oral and written exercises, directed research and seminar format. It is only open to students with recognized high potential and academic rating. The course is in lieu of History 201, 202, and 203 for those qualified.

301. *Foundations of Modern Europe.* (3) This course deals with the important phases of the Portestant 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 Intellectual Revolution; the continued expansion of Europe. Most emphasis will be placed upon the French Revolution; upon its causes; personalities and its constructive features; the career of Napoleon. (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 and Political Science.* (3) The theory materials for the teaching of history and political science 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. *North Africa.* (3) A history of the Near or Middle East, and North Africa to the Sahara to 1600.

386. *Africa—(1610-1914).* (3) A history of Africa from 1600 to 1914 emphasis on the Sub-Saharan and Tropical Region.

387. *Africa—(1915-1970).* (3) A history of Africa from 1914 to Present emphasis on South West, Central, East Africa, and South African Republic and Trust Territories.

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 percusor 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. (See Pol. Science 453-4-5)

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 imperialistic 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.* (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.* ( ) 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.* (3) The development of Modern Latin America from World War I to the present. Social, political, economic, political-geographic relations and international role, importance, challenge and problems.

481. *World Civilizations.* (3) An extensive and intensive survey of the political, economic, social, political-geographic, and international relationship of the Far East. Eastern Russia, Manchuria, Philippines, China, Japan, Viet-Nam, India, from prehistoric times to 1800.

482. *World Civilizations.* ( ) A continuation of the area from 1800 to 1914.

483. *World Civilizations.* (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.

493. *The Negro in Contemporary History—1900-Present.* (3) The role, problems and challenges of the Negro since 1900 as an increasingly participating American and world citizen.

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 background for understanding and evaluating government functions and problems, and to teach citizenship and human relations; (2) to provide a survey of the economic,

social, and psychological factors which underlie politics; (3) to prepare students for teaching careers, government service, various types of social service, and admission to graduate schools and schools of law.

The curriculum offers undergraduate courses leading to the degrees of Bachelor of Arts and Bachelor of Science. Each of these programs requires the completion of a total of 197 hours. Sixty-six hours must be in courses on the 300 and 400 level. Majors in the A.B. Degree program must also complete one minor field of study. The minimum number of hours for a major in political science is 39. Thirty of the major hours must be on the 300 and 400 course levels.

NOTE: History 301-2-3 may substitute for History 121-2-3 and Economics 211-2-3 may be substituted by Economics 204, 404 and 441 or Business Administration 323-4-5 and 330. One unit of high school American history exempts the student from History 201-2-3. Political Science 341-2-3 may be substituted by Air Science 351-2-3. Six hours of this course may be substituted by Political Science 441-2. History 401-2-3 may be substituted by corresponding quarters of history 391-2-3. Philosophy 323 may be substituted by Philosophy 301, 201-2-3E or Speech 102, 201-2-3 and 361.

Majors who expect to teach will do well to major in history rather than political science. Majors, however, who anticipate teaching without certification should elect prerequisites to entering the teacher education program.

The B.S. Degree carries electives of 39 hours which permits a possible double major. Students entering Planning as a possible career should elect Political Science 421-2-3. Suggested electives in the B.S. Degree include Industrial Education 400, Office Administration 21-2-3, 31-2-3, 46, 53-4, 211-2-3, English 321-2. 453-4, Political Science 321-2-3, 353, 373, Psychology 100, Educational Psychology 242, Education 201 and Speech 102, 201-2-3, 361 and 463.

A minor in Political Science consists of 30 hours in this subject, nine hours of which are Political Science 221-2-3, and the remainder are 300 and 400 level courses.

For a minor in Aerospace Studies only Air Science 351-2-3 may be substituted for corresponding quarters in Political Science 341-2-3, History 301-2-3 and/or History 391-2-3.

BACHELOR OF ARTS

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Orientation	1		
English 101-2-3	3	3	3
History 121-2-3	3	3	3
Mathematics 111-2-3	4	3	3
Physical Education 11-2-3 or Air Science	1	1	1
Science, Biol. or Chem.	4	4	4
Music 131 or Art 133			3
	16	14	17

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 211-2-3	3	3	3
Foreign Language	4	4	4
Geography 171-2	3	3	
History 201, 202, 203	3	3	3
Physical Educ. 20's-50's or Air Science	1	1	1
Pol. Sci. 221-2, 313	3	3	3
English 271			3
	17	17	17

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Economics or Bus. Admn.	3	3	3
Foreign Language	3	3	3
Political Science	3	3	
Political Sci. 341-2-3	3	3	3
Sociology 211-2-3	3	3	3
Electives			3
Psychology 221-2	3	3	
	18	18	15

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Electives		6	
Geography 391	3		
History (European 300-400's)	3	3	3
Philosophy 323 or Speech 102, 201-2-3	3		
Pol. Sci. 450 etc.	6	3	6
Soc. Administrn. 342			3
Foreign Language	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
Health 151, 304 or 301		3	
History 121-2-3	3	3	3
Mathematics 111-2-3	4	3	3
Phys. Ed. 11-2-3 or Air Science	1	1	1
Sci. Biol. or Chem.	4	4	4
Orientation	1		
Music 131 or Art 133			3
	16	17	17

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Electives		3	6
English 211-2-3	3	3	3
°English 271	3		
°History 201-2-3	3	3	3
Phys. Educ. 20's-50's or Air Science	1	1	1
°Political Science 221-2, 313	3	3	3
Psychology 221-2	3	3	
	16	16	16

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Econ 211, 2, 3 or 204, 315 or Business 101, 102	3	3	3
Electives	3	3	
Geography 171, 2, 3	3	3	3
Political Science	3	3	3
Political Science 341-2-3	3	3	3
Sociology 211-2-3	3	3	3
	18	18	15

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Electives	7	8	9
Philosophy 323 or Speech 201-2-3	3		
Political Science 450	3		
Political Science (3 of 400)		3	6
History 401-2-3	3	3	3
	16	14	18

COURSES IN POLITICAL SCIENCE

Political Science 221-2-3 are prerequisites to all other courses in the curriculum.

Unless otherwise designated all courses meet three one-hour periods per week.

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.

333-4. *Far Eastern Governments.* (6) Constitutional and political development in China, Japan, India, Burma, Indonesia, Malasia, the Koreas, and other countries in their general geographic area.

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. Prerequisites—P.S.—321-2-3.

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.

453-4-5. *American Diplomacy.* (9) Examines the more important principles of American diplomacy and their applications as basis for the understanding of the foundation of American foreign policy. See History 421-2-3.

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

WENDOLYN Y. BELL, Ph.D., *Head*

The offerings of the Department of Modern Foreign Languages are designed to meet the needs of those who are (1) preparing for careers as secondary school teachers of foreign languages, (2) planning to attend graduate school, or (3) satisfying degree requirements for other departments of the University.

The curricula encompass courses leading to the Bachelor of Arts degree in French or Spanish with or without certification, for which the minimum requirement for graduation is 192 quarter hours and a cumulative average of "C". "C" is the lowest acceptable grade for departmental majors and minors in any required foreign language course; courses in which majors receive "D" or below must be repeated. Moreover, students in the certification program are required to maintain an average of 2.25 in their major courses.

The department offers a minor in French, German, or Spanish.

In addition to satisfying the general University requirements, departmental majors must pass a comprehensive examination in the major field during the senior year.

ALL ELEMENTARY AND INTERMEDIATE COURSES MUST BE TAKEN IN SEQUENCE.

A. *French or Spanish Major with Certification*

Students who elect a major in French or Spanish must complete a minimum of thirty-four hours in courses above 203 to include 311-12-13-14, 420, 421-2-3, and 441-2. It is desirable for students to minor in a second foreign language.

B. *French or Spanish Major without Certification*

Students who choose a major in French or Spanish must complete a minimum of forty quarter hours in courses above 203 to include 311-12-13-14, 420, 421-2-3, and 441-2. Students are strongly urged to minor in a second foreign language.

C. *French, German, or Spanish Minor with Certification*

Students who elect a minor in French or Spanish are required to complete a minimum of thirty-six quarter hours in the chosen language, including six hours in literature (311-12-13-14), three hours in pronunciation and diction (420), six hours in advanced oral and written composition (421-22-23).

D. *French, German, or Spanish Minor without Certification*

Students who elect a minor must present a minimum of thirty-nine hours in the language elected, including nine hours in literature (311-12-13-14), three hours in pronunciation and diction (420), and nine hours in advanced oral and written composition (421-2-3).

To be recommended for certification, in addition to requirements outlined above, students must complete the departmental course in methods (371), and do student teaching in the chosen language.

For French majors with certification, required courses in related areas are: History 121-2-3; Geography 172; Speech 201 or 202 or 221. For French majors without certification; Political Science 321-22-23; History 301-2-3 or Political Science 341-2-3; Speech 201 or 202 or 221; History 491 or 492.

Required courses in related areas for Spanish majors with certification are: History 121-2-3; Geography 172; Speech 201 or 202 or 221. For Spanish majors without certification: History 121-2-3; Political Science 321-22-23; History 451-2-3 or Political Science 331-2-3; Speech 201 or 202 or 221.

CURRICULUM IN FRENCH
WITH CERTIFICATION

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
French 101-2-3	4	4	4
English 101-2-3	3	3	3
Math 111-2	4	3	
History 121-2-3	3	3	3
Orientation	1		
Phy. Ed. 11-12-13	1	1	1
Music 131		3	
Art 133			3
Education 201			3
	16	17	17

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
French 201-2-3	3	3	3
French 420			3
English 211-2-3	3	3	3
Second Lang. or (Minor) 101-2-3	4	4	4
Biology 101-2-3 or Chemistry 111-2-3 or Natural Science 121-2-3	4	4	4
Psychology 242-3	3	3	
P.E. 20's to 50's	1	1	1
	18	18	18

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
French 311-2-3	3	3	3
French 421-2-3	3	3	3
Second Lang. or (Minor) 201-2-3	3	3	3
Second Lang. or (Minor) 420			3
Education 301	3		
Psychology 312	3		
Geography 172	3		
Education 387		3	
Health 151, 211, 212 or Nutrition 212		3	
Education 462		3	
Psychology 463			3
Speech 201, 202 or 221			3
	18	18	18

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
French 314	3		
French 441-2	5	5	
Second Lang. or (Minor) 311-2	3	3	
Second Lang. or (Minor) 421-2	3	3	
Senior Project 450	0		
Education-MFL 371		3	
Electives (History, Pol. Sci., Econ., or Soc.)	3	3	
Education 471-2			15
	17	17	15

CURRICULUM IN SPANISH WITH CERTIFICATION

Freshman Year	Quarter Hours Credit		
Name of Course	I	II	III
Spanish 101-2-3	4	4	4
English 101-2-3	3	3	3
Math 111-2	4	3	
History 121-2-3	3	3	3
Orientation 101	1		
Phy. Ed. 11-12-13	1	1	1
Music 131		3	
Art 133			3
Education 201			3
	16	17	17

Sophomore Year	Quarter Hours Credit		
Name of Course	I	II	III
Spanish 201-2-3	3	3	3
Spanish 420			3
English 211-2-3	3	3	3
Second Lang. or (Minor) 101-2-3	4	4	4
Biology 101-2-3 or Chemistry 111-2-3 or Nat. Sci. 121-2-3	4	4	4
Psychology 242-3	3	3	
P.E. 20's to 50's	1	1	1
	18	18	18

Junior Year	Quarter Hours Credit		
Name of Course	I	II	III
Spanish 311-2-3	3	3	3
Spanish 421-2-3	3	3	3
Second Lang. or (Minor) 201-2-3	3	3	3
Second Lang. or (Minor) 420			3
Education 301	3		
Psychology 312	3		
Geography 172	3		
Education 387		3	
Health 151, 211, or Nutrition 212		3	
Education 462		3	
Psychology 463			3
Speech 201, 202 or 221			3
	18	18	18

Senior Year	Quarter Hours Credit		
Name of Course	I	II	III
Spanish 314	3		
Spanish 441-2	5	5	
Second Lang. or (Minor) 311-2	3	3	
Second Lang. or (Minor) 421-2	3	3	
Senior Project 450	0		
Education-MFL 371		3	
Electives (History, Pol. Sci., Econ., or Soc.)	3	3	
Education 471-2			15
	17	17	15

CURRICULUM IN FRENCH WITHOUT CERTIFICATION

Freshman Year	Quarter Credit Hours		
Name of Course	I	II	III
French 101-2-3	4	4	4
English 101-2-3	3	3	3
Math 111-2-3	4	3	3
History 121-2-3	3	3	3
Orientation 101	1		
Phy. Ed. 11-12-13	1	1	1
Music 131		3	
Art 133			3
	16	17	17

Sophomore Year	Quarter Credit Hours		
Name of Course	I	II	III
French 201-2-3	3	3	3
French 420			3
Second Lang. (Minor) 101-2-3	4	4	4
English 211-2-3	3	3	3
Biology 101-2-3 or Chemistry 111-2-3 or Nat. Sci. 121-2-3	4	4	4
Social Studies 111-2 or Sociology 211-2	3	3	
Phy. Ed. 20's to 50's	1	1	1
	18	18	18

Junior Year	Quarter Credit Hours		
Name of Course	I	II	III
French 311-2-3	3	3	3
French 421-2-3	3	3	3
Second Lang. or (Minor) 201-2-3	3	3	3
Second Lang. or (Minor) 420			3
Education 201	3		
Psychology 242-3		3	3
Speech 201, 202 or 221	3		
Geography 172		3	
Pol. Sci. 321-2-3 or 341-2-3 or History 301-2-3		3	3
Social Studies 113 or Sociology 213	3		
	18	18	18

Senior Year	Quarter Credit Hours		
Name of Course	I	II	III
French 314	3		
French 441-2	5	5	
French 451-2-3 or 461-2-3	3	3	3
Second Lang. or (Minor) 311-2-3	3	3	3
Second Lang. or (Minor) 421-2-3	3	3	3
Senior Project 450	0		
Philosophy 323		3	
Electives			6
	17	17	15

CURRICULUM IN SPANISH WITHOUT CERTIFICATION

Freshman Year	Quarter Credit Hours		
Name of Course	I	II	III
Spanish 101-2-3	4	4	4
English 101-2-3	3	3	3
Math 111-2-3	4	3	3
History 121-2-3	3	3	3
Orientation 101	1		
Phy. Ed. 11-12-13	1	1	1
Music 131		3	
Art 133			3
	16	17	17

Sophomore Year	Quarter Credit Hours		
Name of Course	I	II	III
Spanish 201-2-3	3	3	3
Spanish 420			3
Second Lang. (Minor)101-2-3	4	4	4
English 211-2-3	3	3	3
Biology 101-2-3 or Chemistry 111-2-3 or Nat. Sci. 121-2-3	4	4	4
Social Studies 111-2 or Sociology 211-2	3	3	
Phy. Ed. 20's to 50's	1	1	1
	18	18	18

Junior Year	Quarter Credit Hours		
Name of Course	I	II	III
Spanish 311-2-3	3	3	3
Spanish 421-2-3	3	3	3
Second Lang. (Minor) 201-2-3	3	3	3
Second Lang. (Minor) 420			3
Education 201	3		
Phychology 242-3		3	3
Speech 201, 202 or 221	3		
Geography 172		3	
Pol. Sci. 321-2-3 or 331-2-3 or History 451-2-3		3	3
Social Studies 113 or Sociology 213	3		
	18	18	18

Senior Year	Quarter Credit Hours		
Name of Course	I	II	III
Spanish 314	3		
Spanish 441-2	5	5	
Spanish 321-2-3 or 451-2-3 or 461-2-3	3	3	3
Second Lang. (Minor) 311-2-3	3	3	3
Second Lang. (Minor) 421-2-3	3	3	3
Senior Project	0		
Philosophy 323		3	
Electives			6
	17	17	15

COURSES IN GERMAN

101-2-3. *Elementary German.* (12) 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. German 101 is the prerequisite to 102. German 101 and 102 are prerequisite to 103.

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. Prerequisite for 201: 103 or equivalent.

311-12-13-14. *Survey of German Literature.* (12) 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 through the contemporary period.

German 411. *Classical Period of German Literature.* (3) Major authors and works with emphasis on Goethe and Schiller.

German 412. *The Romantic Period.* (3) Principal writers and works with stress on poetry and the *Novelle.*

413. *The Modern Period.* (3) Major authors and their contributions with attention to Rilke, Mann, and Kafka.

420. *Pronunciation and Diction.* (3) German phonology, morphology, and the essential principles of speech will be stressed. Prerequisite: German 202.

421-2-3. *Advanced Oral and Written Composition.* (9) Emphasis on stylistics and mastery of detailed grammatical structures.

COURSES IN FRENCH

101-2-3. *Elementary French.* (12) The development of the ability to understand, speak, write, and read French. French 101 is a prerequisite to 102. French 101 and 102 are prerequisites to 103.

201-2-3. *Intermediate French.* (9) Grammar review and the further development of the ability to understand, speak, write and read French. Prerequisites: French 101-2-3 or the equivalent.

311-2-3-4. *Survey of French Literature.* (12) From its earliest beginning to the present. Prerequisite: French 203.

311. *Medieval French and the Renaissance.*

312. *The seventeenth and eighteenth centuries.*

313. *The nineteenth century.*

314. *The twentieth century.*

MFL 371. *Methods of Teaching Foreign Languages.* (3) This course acquaints the student with methods, materials, and texts. Bi-weekly classroom observation in secondary schools of the community are required. (Required of those wishing to be certified to teach.)

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.

420. *Pronunciation and Diction.* (3) The development of sound articulatory habits through perception and imitation of French sounds with secondary emphasis on the theoretical knowledge of the phonetic alphabet. Prerequisite: French 202.

421-2-3. *Advanced Oral and Written Composition.* (9) Intensive analysis of French grammar with practical application in oral and written compositions.

441-2. *French Civilization.* (10) The development of French civilization from itts earliest beginnings to the present.

MFL 450. *Senior Project.* (0) Individual Research.

451-2-3. *Modern French Literature.* (9) Stresses the nineteenth century in the novel, drama, and poetry. The following aspects of French literature form the content of the course: Romanticism, Realism, the Parnassian reaction in poetry, naturalism and symbolism. (Offered in alternate years.)

461-2-3. *French Literature of the Twentieth Century.* (9) 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. (Alternates with French 451-2-3.)

480. *Senior Seminar.* (3) Special topics in French to be offered according to the preferences and needs of the students.

COURSES IN SPANISH

101-2-3. *Elementary Spanish.* (12) The development of the ability to understand, speak, write, and read Spanish. Spanish 101 is the prerequisite for 102. Spanish 101 and 102 are prerequisites for 103.

201-2-3. *Intermediate Spanish.* (9) Grammar review and the further development of the ability to understand, speak, write and read Spanish. Prerequisites: Spanish 101-2-3 or the equivalent.

311-12-13-14. *Survey of Spanish Literature.* (12) Literary philosophies, types, major authors and their contributions from the earliest extant works to the present. Prerequisite: Spanish 203.

311. *Medieval Period and the "Renaissance"*

312. *The Golden Age*

313. *Eighteenth and Nineteenth Centuries*

314. *The Generation of 1898 and After*

321-2-3. *Survey of Spanish-American Literature.* (9) Consists of selected readings to acquaint the student with representative works, authors and movements from pre-colonial times to the present day.

420. *Pronunciation and Diction.* (3) The development of good articulatory habits through preception, imitation and intensive drill with secondary emphasis on theory and phonetic symbols. Prerequisite: Spanish 202.

421-2-3. *Advanced Oral and Written Composition.* (9) Intensive analysis of Spanish grammar with practical application in oral and written compositions.

441. *Spanish Civilization.* (5) The development of Spanish civilization from its earliest beginnings to the present.

442. *Spanish-American Civilization.* (5) History of Spanish-American civilization, culture, and institutions.

451-2-3. *Modern Spanish Literature.* (9) Stresses nineteenth-century novel, drama, and poetry with attention to *Coctumbrismo,* Realism, Regionalism, and Naturalism. Offered in alternate years.

461-2-3. *Contemporary Spanish Literature.* (9) Consists of critical studies of the principal authors in the essay, novel, drama, poetry and related philosophies: Existentialism, *tremendismo, ultraismo, creacionismo, surrealismo.* Alternates with Spanish 451-2-3.

480. *Senior Seminar.* (3) Special topics in Spanish to be offered according to the preferences and needs of the students.

DEPARTMENT OF PHYSICS AND MATHEMATICS

SADIE C. GASAWAY, 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.

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 (1) complete a minimum of 195 quarter hours of prescribed and elective course work, (2) have a minimum grade of "C" in each required course in the major field, and (3) have 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.

Candidates for the Bachelor of Arts degree must satisfy the requirements of the university in foreign languages stated elsewhere. (For a student 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).

Each major in physics is expected to minor in mathematics by completing a minimum of 15 quarter hours of courses numbered 300 and above. A minimum grade of "C" in each course in the minor field is required.

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*
Orientation	1		
English 101-2-3	3	3	3
Math 161-2-3	5	5	5
P.E. 11-12-13 or Air Science	1	1	1
Health 151	3		
Music 131		3	
Art 133			3
History 121-2-3	3	3	3
Physics 193, Computer Science 193		1	2
	16	16	17

Sophomore Year	Quarter Hours Credit		
Name of Course	*I*	*II*	*III*
Physics 221-2-3	4	4	4
Math 261-2-3	5	5	5
German or French	3	3	3
P.E. 20's to 50's or A.S. 251-2-3	1	1	1
Chemistry 111-2-3	4	4	4
Computer Science 291	2		
	19	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
Physics 331-2-3	2	2	2
English 211-2-3	3	3	3
Math 461-2-3	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	
English 323	3		
Approved electives	9	9	9
	15	15	12

BACHELOR OF SCIENCE PROGRAM

(Teacher Education)

Freshman Year	Quarter Hours Credit		
Name of Course	*I*	*II*	*III*
Orientation	1		
English 101-2-3	3	3	3
Math 161-2-3	5	5	5
Health 151	3		
Music 131		3	
Art 133			3
History 121-2-3	3	3	3
P. E. 11-2-3 or Air Science	1	1	1
Physics 193, Computer Science 193		1	2
	16	16	17

Sophomore Year	Quarter Hours Credit		
Name of Course	*I*	*II*	*III*
Math 261-2-3	5	5	5
Physics 211-2-3	4	4	4
Education 201	3		
Psychology 242-3		3	3
Chemistry 111-2-3	4	4	4
P. E. 20 to 50 or Air Science	1	1	1
	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
Social Science			3
	18	18	18

Senior Year	Quarter Hours Credit		
Name of Course	*I*	*II*	*III*
Physics 321-2	3	3	
Education 462	3		
Psychology 463		3	
Education 471-2			15
Physics 331-2-3	4	2	
Physics 412; 413, 414	3	6	
Physics 450		3	
English 323	3		
	16	17	15

COURSES IN ASTRONOMY

201-202. *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

Physics III. *Foundations of Physics.* (3) A study of the basic principles of physics. This course is designed for the student who has had no previous training in physics. (Credit in this course will not apply toward a major or minor in the physical sciences or mathematics.)

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 premedical curricula. Prerequisite: 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 in intended for engineering students and students majoring in the physical sciences. Prerequisite: Mathematics 161-2-3. A passing grade in Physics 221 is prerequisite for Physics 222 and Physics 223. 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 laboratory 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 mastering current, resistance, electromotive force and power, and the calibration of instruments employed, together with measurements of capacity, inductance, and ferro-magnetism. Prerequisites: Physics 221-2-3 or Physics 211-2-3; Mathematics 261-2-3. Two laboratory periods per week.

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.

412-3-4. *Modern Physics.* (3-3-3) The classical and modern concepts of the atom and radiation are developed; introduction to molecular structure, the chemical bond, nuclear physics; fission, isotopic tracers; medical radiology; cosmic rays. Prerequisites: Physics 221-2-3 or Physics 211-2-3; Mathematics 261-2-3. Three lectures.

450. *Senior 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, 361-2-3, 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, each major is urged to include one of these courses in his program 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, 364, 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
History 121-2-3	3	3	3
P. E. 11-12-13 or Air Science	1	1	1
Math 191-2-3	1	1	1
	16	16	16

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	4	4	4
French or German	4	4	4
P. E. 20's to 50's or Air Science II (Men)	1	1	1
Computer Science 193	2		
Computer Science 291		2	
	19	19	17

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Math 361-2-3	3	3	3
Electives (Math)	3	3	3
English 323			3
Physics 221-2-3	4	4	4
French or German	3	3	3
Other Approved Electives (Including Social Science)	3	3	3
	16	16	16

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Math 450		3	
Electives (Math)	3	3	3
Other Approved Electives	15	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 or Air Science I	1	1	1
History 121-2-3	3	3	3
Math 191-2-3	1	1	1
	16	16	16

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
French or German	4	4	4
Math 261-2-3	5	5	5
Biology 111-2-3 or Chemistry 111-12-13	4	4	4
Education 201	3		
Computer Science 193	2		
Psychology 242-3		3	3
Phy. Ed. 11-12-13 or Air Science II	1	1	1
	19	17	17

Junior Year	Hours Credit Quarter		
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; 387; Math 371	3	3	3
English 211-2-3	3	3	3
Psychology 312		3	
Mathematics and Social Science (Electives)	3	3	3
English 323			3
	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)	6	3	
Other Approved Electives	3	3	
	15	15	15

COURSES IN MATHEMATICS

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.

111-112-113A. *Introduction to College Mathematics I-II-III.* (3-3-3). Fundamental operations in arithmetic and algebra, equations, functions, graphs, exponents, logarithms, and trignometric functions.

111-112-113B. *Introduction to College Mathematics I-II-III.* (4-3-3) The content in this sequence is the same as Math 111-112-113A. However, students enrolled in this course are required to attend 4 laboratory periods each week for remedial work in addition to the 3 lecture periods. This sequence is designed for students scoring in lower percentiles of the mathematics test for admission.

111-12-13E. *Quantitative and Analytical Thinking.* (12) An introductory course designed to help students gain an understanding of the fundamental operations of mathematics and to develop interest, skill in logical thinking and knowledge of concepts of the theory of sets. The approach is that of student involvement provoking analytical thinking rather than "lecture" method. (General orientation is included).

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.

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 o.. the conceptual aspects of the subject, rather than technique and applications.

194. *Computer Programming I.* (1) The FORTRAN language and the programming of elementary problems in algebra, trigonometry, and calculus. Prerequisite: At least one course in the calculus, which may be taken concurrently.

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. *Introduction to Continuous Probability.* (1) A heuristic approach to continuous probability distributions and some statistical applications. Prerequisite: Math 291.

311-12. *Probability and Statistics I-II.* (3) Probability distributions; expected values; moments; limit theorems, sampling and sampling distributions; tests of hypotheses. Prerequsite: Math 263 or equivalent.

313. *Numerical Analysis (formerly 427).* (3) Methods of numerical computations; interpolations; numerical integration and differentiation; solution of algebraic, transcendental, and differential equations. Prerequiste: 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. 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 orthogonal functions. Prerequisite: Consent of instructor.

392. *Algebra of Complex Numbers.* (1) Introduction to the algebra and geometry of complex numbers with applications. Prerequisite: Consent of instructor.

393. *Calculus of Complex Numbers.* (1) An intuitive approach to the theory and applications of functions of a complex variable. Prerequisite: Consent of instructor.

441-442-443. *Calculus IV, V, VI.* (3-3-3) Multidimensional calculus. Euclidean space, mappings and their differentials, manifolds, differential forms, and vector analysis. Prerequisite: Math 263.

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 functions. 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. *Special Topics in Calculus.* (3) Infinite Series, Improper Integrals, Fourier Series and Integrals, Gamma and Beta Functions, and Elliptic Integrals. 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.

471. *Computer Assisted Instruction for Mathematics Teachers.* (3) The mathematics basic to the teletype materials. Effective use of CAI in supplementing classroom instruction in elementary and secondary mathematics. Includes a study of the foundation axioms of arithmetic: commutativity, associativity, and definition of the integers, statements of behavioral objectives, listing of strands concepts, procedures for evaluation of progress. Work at teletype and in seminar. Prerequisites: Consent of instructor.

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 consistency and valid inference. Isomorphisms among derivation systems, truth-value structures, and English. The sentencial derivation. Prerequisite: Consent of instructor.

474. *Predicate Logic.* (3) Predicate calculus: Universal and existential quantification, the logic of identity. Informal proofs. Theory of definition. Elementary set theory. Prerequisite: Math 473.

475. *Axiomatic Set Theory.* (3) An axiomatic treatment of set theory. The relation of logic and set theory to scientific method. Multivalued logics, inductive versus deductive process, the logic of statistics. Prerequisite: Math 474.

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.

COURSES IN COMPUTER SCIENCE

Offered by Computer Science and Information Processing Center:

193. *Basic Computer Programming.* (2) Introduction to some of the basic types of statement in the FORTRAN language. Some elementary problems from algebra, trigonometry and geometry, as well as some business oriented problems will be coded and executed on an IBM 1620 computer. Prerequisite: consent of instructor.

291. *Computer Programming.* (2) An extension of 193 using more advanced programming instructions with emphasis on problems making use of Function Subprograms and Subroutine Subprograms. Problems from Mathematics, Engineering, Science and Business will be flow charted, coded and executed on an IBM 1620 computer. Prerequisite: C.S. 193 or equivalent.

313. *Numerical Calculus.* (3) Emphasis will be placed on the computational aspects of numerical methods as opposed to the theoretical approach. Mathematical models, solution of systems of linear and nonlinear equations; error analysis, numerical differentiation and integration; inversion of matrices; statistical techniques including curve fitting. The basic tools of the course will be the IBM 1620 and/or desk calculators. Prerequisites: Math 263 or consent or instructor.

331-32-33. *Logical Design of Digital Computer I, II, III.* (3-3-3) A first course in logic and switching theory. The course content includes Boolean Algebra, analysis, synthesis, and minimization methods using the tools of algebraic manipulation, the Veitch diagram method, Karnaugh map, Quine-McCluskey theorem, factoring, and multiple outputs; various switching circuits will be covered. Huffman-Moore model of sequential circuits will be discussed. Design aspects and simplification techniques on logic design of I/O; Arithmetic, control and memory units, etc., will be studied. Prerequisite: Junior or Senior standing.

341. *Computer Organization and Programming Systems.* (3) Description of the organization of computers. To introduce procedure-oriented languages and knowledge of the machine. To better understand the hardware, functional units such as memory,

arithmetic units, and control units, the individual machine instructions and the use of these elements in combination to produce effective programs.

342-43. *Numerical Analysis I, II.* (3-3) A more comprehensive treatment of numerical methods with emphasis upon the theoretical aspects of the subject. Solution of systems of linear equations using iterative techniques, solution of non-linear equations; numerical differentiation and integration; solution of ordinary differential equations using Runge-Kutta methods; solution of partial differential equations using finite difference methods; integral equations. Applications to IBM 1620 is optional. Prerequisites: Math 263 or Math 313.

363. *Programming Languages.* (3) This course will deal with the survey of existing programming languages, from the assembler languages to the higher order languages; their power and weakness will be discussed. The students, after taking this course, will be in a position to evaluate the relationship between source programs and run-time. This course is impreative to those students who desire to take the course in *Compiler Design*—C. S. 441. Prerequisite: C. S. 291.

441. *Compiler Design* (3) This course will deal with the design aspect of compilers of higher order languages such as Fortran, Cobol and simulation languages for usage of scientific or business applications. Students, with instructor's consent, may choose to take this course as formal course work or as a senior project. Prerequisite: C.S. 341 and 363.

442-43. *System Design.* (3-3) These courses will deal with the system studies of hardware and software aspects of a digital computer. Studies of various computer related equipment and units individually as well as their interrelationship in the over all physical make-up of a digital computer will be included. Concepts of problem programming and system programming will be discussed. Discussions of various systems such as Monitor, Core Storage Dump Program, System Editor, Input-Output Executor, etc., will be made. Prerequisite: consent of instructor.

DEPARTMENT OF SCIENCE EDUCATION AND GEOGRAPHY

HENRY H. HYMES, M.S., *Acting 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. or Air Science 151-2-3	1	1	1
Orientation	1		
	17	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. or Air Science 251-2-3	1	1	1
	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. or Air Science (M) 151-2-3	1	1	1
Orientation	1		
	17	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
Psy. Educ. or Air Science 251-2-3	1	1	1
	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 for 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.

121-22-23E. *Biological and Physical Science.* (12) A comprehensive course designed to integrate physics, chemistry and biology.

The primary purpose of the course is to help students gain a broad outlook on the meaning of science and the interrelationship of its various disciplines.

The students will explore such topics as: Measurement and the Language of Science, Matter, Energy, and Motion. The course is laboratory-centered. (Orientation is included).

301-2. *Science for Elementary Teachers.* (6) A two quarter sequential 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 of 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.

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.

111-12-13E. *Social Institutions: Their Nature and Change.* (12) Presents a multi-disciplinary approach to the study of man's personal, social and natural environment. Students are encouraged to use the tools and techniques of the social scientist to develop critical thinking, inductive and deductive reasoning, hypothesis formulation and testing, and generalizations. Topics—Youth and Society, The Family, American Cities and Urban Problems, and the Civil Rights Movement and Revolution. (General orientation is included).

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 ideologies and their effect on the technological advancements of the peoples of the world.

CURRICULUM IN SOCIAL WELFARE

ANNIE B. MARTIN, MSSW, *Coordinator*

The pre-professional Social Work Curriculum is designed: (1) to give students some insight into the basic social work processes which include group work, casework and community organization; (2) to help students know the importance of under-

standing human behavior as a means of working with people who have social problems; (3) to provide an opportunity to apply theory to practice in an agency setting. These objectives lead toward preparing students for immediate employment or professional education.

Students are required to spend seventy-two (72) clock hours per quarter in Field Experience in selected agencies.

Purpose of Field Experience: The purpose of field experience is to provide the student with the opportunity to apply theory to actual experience in a controlled setting under the supervision and guidance of a qualified practitioner. He is then evaluated upon the basis of his growth and development on the job.

The Curriculum in Social Welfare offers the Bachelor of Science and Bachelor of Arts Degrees.

Requirements for Graduation: (1) A student must complete a minimum of 192 quarter hours for either the Bachelor of Science or Bachelor of Arts Degree, of which minimum of 66 quarter hours must be completed in the 300 and 400 level courses; (2) 42 quarter hours in the curriculum in 300 and 400 level courses. Courses in the major curriculum 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 welfare including 341, 342, 351-2-3 and one quarter of field experience.

The Area of Social Welfare has memberships in the Council of Community Services, Nashville, and Council on Social Work Education, Undergraduate Section, New York, New York.

CURRICULUM IN SOCIAL WELFARE

Bachelor of Science

Freshman Year	*Quarter Credit Hours*		
Name of Course	*I*	*II*	*III*
English 101-2-3	3	3	3
History 121-2-3	3	3	3
Mathematics 111-12-13	4	3	3
Geography 171-2-3	3	3	3
Physical Ed. 11-12-13 or Air Science I (M)	1	1	1
Music 131, Art 133		3	3
Orientation	1		
	15	16	16

Sophomore Year	*Quarter Credit Hours*		
Name of Course	*I*	*II*	*III*
English 211-12-13	3	3	3
Political Science 221-2-3	3	3	3
Psychology 221-2	3	3	
Speech 201			3
Sociology 211-12-13	3	3	3
Physical Ed. 20's to 50's or Air Science	1	1	1
Biology 101-2-3	4	4	4
	17	17	17

Junior Year	*Quarter Credit Hours*		
Name of Course	*I*	*II*	*III*
History 201-2-3	3	3	3
Sociology 322	3		
Sociology 221		3	
Psychology 311			3
Sociology 351		3	
Free Electives	3		
Social Welfare 341	3		
Social Welfare 343 or 482H		3	
Art 411			3
Psychology 321			3
Social Welfare 351-2-3	3	3	3
Economics 211-12-13	3	3	3
	18	18	18

Senior Year	*Quarter Credit Hours*		
Name of Course	*I*	*II*	*III*
Psychology 351		5	
Social Welfare 400			3
Social Welfare 401-2-3	3	3	3
Social Welfare 405-6-7	2	2	2
Sociology 303	3		
Social Welfare 450		3	
Social Welfare 451			3
Social Welfare Electives	3		3
Sociology 432		3	
Sociology 461	3		
Philosophy 321	3		
	17	16	14

Freshman Year	*Quarter Credit Hours*		
Name of Course	*I*	*II*	*III*
English 101-2-3	3	3	3
Foreign Language	4	4	4
History 121-2-3	3	3	3
Mathematics 111-12-13	4	3	3
Physical Ed. 11-12-13 or Air Science I (M)	1	1	1
Orientation	1		
Music 131		3	
Sociology 211			3
	16	17	17

Sophomore Year	*Quarter Credit Hours*		
Name of Course	*I*	*II*	*III*
English 211-12-13	3	3	3
Foreign Language	3	3	3
Biology 101-2-3	4	4	4
Political Science 221-2-3	3	3	3
Psychology 221	3		
Sociology 212-213		3	3
Physical Ed. 20's-50's or Air Science II (M)	1	1	1
	17	17	17

Junior Year	*Quarter Credit Hours*		
Name of Course	*I*	*II*	*III*
Economics 211-12-13	3	3	3
Foreign Language	3	3	3
Psychology 222-311	3	3	
Social Welfare 3	3		
Psychology 321			3
Social Welfare 342 or 482H		3	
Social Welfare 351-2-3	3	3	3
Social Welfare 400	3		
Philosophy 323		3	
Sociology 221			3
Sociology 322			3
	18	18	18

Senior Year	*Quarter Credit Hours*		
Name of Course	*I*	*II*	*III*
Psychology 351			5
Sociology 351	3		
Sociology 461	3		
Sociology 303	3		
Sociology 412, 451		3	3
Social Welfare 401-2-3	3	3	3
Social Welfare 405-6-7	2	2	2
Social Welfare Electives		3	3
Art 411	3		
Social Welfare 450		3	
	17	14	16

COURSES IN SOCIAL WELFARE

101. *Orientation.* (1) A course required of all freshmen in the Area of Social Welfare. Designed to orient the student to the University, and to acquaint him with opportunities for study and employment in the various areas of social work.

341. *Social Work as a Profession.* (3) A survey of contemporary social work. Emphasis is placed on objective and historical development of the social work concept.

342. *Social Welfare—Its Structure and Function.* (3) A study designed to show the many governmental and non-governmental agencies and how they 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. Prerequisite: S.W. 341.

351-2-3. *The Social Work Processes.* (9) Consideration is given to the basic skills used in working with people. Emphasis is placed on principles, methods and techniques utilized in solving problems and meeting needs of individuals, families, groups and communities. Prerequisites: 341-342.

343. *Casework Services for Children.* (3) A course designed to provide students with knowledge of the principles and practices of the seven basic casework 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 effective conditions. Prerequisites: 341-2, 351-2-3. Winter Quarter.

360. *Group Leadership.* (3) An analysis of leadership as to types and purpose, with emphasis on its application to activities, age, sex and program development. Prerequisites 341-2, 351-2-3. Art 411. Winter Quarter.

400. *Interviewing and 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 as it relates to social welfare. Prerequisites 341-2, 351-2-3.

401-2-3. *Field Experience.* (9) Supervised practice in selected social agencies which provides an opportunity for students to apply theory to actual practice. Prerequisites 341-2, 351-2-3, 400.

405-6-7. *Social Welfare Seminar.* (6) Gives students in field experience an opportunity to discuss and share problems encountered in agency settings and skills and techniques used in handling them. Taken concurrently with 401-2-3.

433. *Social Work and Health Problems.* (3) Elementary medical information for social workers. The course revolve around the symptoms, etiology, and emotional aspects of chronic diseases and disability. Emphasis is on the social worker's role as a member of the medical team in providing social treatment for the sick person. Prerequisites: 341-2, 351-2-3. Spring Quarter.

443. *Problems of the Aged.* (3) A course designed to examine physical, sociological and psychological aspects of the aging. It examines the financial dependence or independence of the aged; analyzes needs and discusses the various resources available for meeting these needs. Prerequisites: 341-2, 351-2-3. Spring Quarter.

450. *Social Welfare Research.* (3) Attention is given to social welfare literature and practices. Guidance is given to students interested in working on special problems in Social Welfare. Course is limited to Social Welfare majors with senior standings. Prerequisites: 341-2, Sociology 303.

482H. *Honors Social Welfare.* (3) An opportunity for students to do independent study in examining current problems related to the social work profession and the field of Social Welfare. Students are required to submit a senior essay on a topic of special interest to them. Limited to students with 3.0 average. Offered Spring Quarter.

CURRICULUM IN SOCIOLOGY

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 degrees 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, 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.

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.

Bachelor of Arts

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 101-2-3	3	3	3
Foreign Language	4	4	4
History 121-2-3	3	3	3
Geog. 171-2		3	3
Mathematics 111-2-3	4	3	3
Physical Education 11-12-13 or Air Science 151-2-3	1	1	1
Orientation	1		
	16	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, Geog 173	3	3	3
Physical Education 30's to 50's or Air Science 251-2-3	1	1	1
Natural Science	4	4	4
	17	17	17

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
Psych. 223			3
Speech 202		3	
Sociology 322	3		
Sociology 303			3
Sociology 200's, 300's or 400's	6	6	
Foreign Language or Art 133, 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 491	3		
Sociology 450	3		
Electives		6	3
Economics 211-2-3	3	3	3
Sociology 300's or 400's	3	3	3
	15	15	12

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
Geography 171-2-3	3	3	3
Mathematics 111-2-3	4	3	3
Physical Ed. 11-12-13 or Air Science 151-2-3	1	1	1
Orientation	1		
Health 151; Music 131 or Art 133		3	3
	15	16	16

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
Psychology 242			3
Physical Ed. 20's to 50's or Air Science 251-2-3	1	1	1
Natural Science	4	4	4
	17	17	17

Junior Year	Quarter Hours Credit		
Name of Course	I	II	III
Psychology 311	3		
History 201-2-3	3	3	3
Pol. Sci. 221-2-3	3	3	3
Pol. Sci. 313			3
Philosophy 323 or 301		3	
Sociology 221	3		
Sociology 322	3		
Sociology 351	3		
Sociology 303		3	
Sociology 393		3	
Soc. 200's, 300's or 400's		3	9
	18	18	18

Senior Year	Quarter Hours Credit		
Name of Course	I	II	III
Health 301	3		
History 300's or 400's			3
Sociology 491	3		
Sociology 300's or 400's	6	6	3
Sociology 450	3		
Electives		9	6
	15	15	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.

303. *Introduction to Field Study.* (3) A study of the theory and methods of social research including the structure and use of the 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.

380. *Industrial Sociology.* (3) The human relations of modern business and industrial organization, the interdependance of the technological and social factors and some implications for the adjustment of the individual on the job and in the community. Prerequisites: Sociology 211-212-213 or with the permission of the instructor.

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)

PART I—An orientation to the methods and techniques employed in both private and official community services agencies for dealing with specific and multiple social problems. Emphasis is placed upon the sociology of individual and group behavior under certain social stress situations as an enabling factor in the helping professions.

PART II—A supervised internship in selected community services agencies or the alternative of a supervised research project. Emphasis is placed upon the dynamics of human behavior, interpersonal relations and methods of helping people help themselves. A written report of the internship is required.

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.

460. *Problems of the Poor In America.* (3) An account of the problems of poverty taking into consideration the economic, educational, psychological and sociological aspects.

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.

463. *Social Stratification.* (3) This course focuses on the development of differential status categories in society. An examination of the distinctions among the class society, the caste society, the slave society, and estates.

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. *History of Sociological Theory.* (3) Major sociological theories as represented by Comte, Spencer, Durkheim, Weber, Simmel, *et al.*, including those of the contemporary period.

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

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

494. *Educational Sociology.* (3) This course explores the social significance of education and educational significance of the social process. It examines possible solution 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.

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 Pathology and Audiology. 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 200 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 Pathology and Audiology are required to complete 48 hours or more in Speech, six hours in Special Education, six hours in Psychology; 36 hours in Education, plus the other requirements for the Bachelor of Science degree.

Bachelor of Science

Curriculum in Speech Pathology and Audiology (Teacher Education)

Freshman Year	Quarter Hours Credit		
Name of Course	*I*	*II*	*III*
English 101-2-3	3	3	3
Art 133	3		
Health 151			3
Speech 201		3	
Music 131		3	
Soc. Stud. 111-12-13	3	3	3
Biol. 101-2-3	4	4	4
Air. Sci. 151-2-3(M) or P.E. 11-12-13	1	1	1
Orientation	1		
Speech 213			3
	15	17	17

Sophomore Year	Quarter Hours Credit		
Name of Course	*I*	*II*	*III*
Soc. Studies 114	3		
Math. 111-12-13	4	3	3
English 211-12-13	3	3	3
Education 201		3	
Psychology 242, 243		3	3
Air Sci. 251-52-43 (M) or P.E. 20-50	1	1	1
Speech 204	3		
Speech 212	3		
Speech 207		3	
Elective			6
	17	16	16

Junior Year	Quarter Hours Credit		
Name of Course	*I*	*II*	*III*
Psychology 312			3
Philosophy 323			3
Education 462		3	
Psychology 463		3	
Sp. Educ. 465-467		3	3
Educ. 301-387	3		3
Speech 393-322	3	3	
Speech 326	3		
Speech 324-325-328	3	3	3
Speech 328-394		3	3
Speech 392	3		
Elective	3		
	18	18	18

Senior Year	Quarter Hours Credit		
Name of Course	*I*	*II*	*III*
Psychology 323	3		
Psychology 431	5		
Psychology 461		3	
Speech 450		3	
Speech 371b-475	3	2	
Speech 474		2	
Speech 493b		1	
Speech 472b			12
Speech 493a	1		
Speech 493c-d-e			3
Electives	6	4	
	18	15	15

Option for students who do not plan to teach: Psychology 221, 222, 341 and 12 hours of electives in lieu of Educ. 301, 387, 462 and 472b.

Bachelor of Arts

Curriculum in Speech and Drama

Freshman Year	Quarter Hours Credit		
Name of Course	*I*	*II*	*III*
Art 133	3		
Music 131		3	
Health 151			3
Drama 111-12-13	1	1	1
English 101-2-3	3	3	3
French, Spanish or German 101-2-3	4	4	4
Biology 101-2-3	4	4	4
Air Science (M) 151-152-153 or Phys. Ed. 11-12-13	1	1	1
Orientation	1		
	17	16	16

Sophomore Year	Quarter Hours Credit		
Name of Course	*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 or Phys. Ed. 20's to 50's	1	1	1
Soc. Studies 111-12-13	3	3	3
	19	19	19

Junior Year	Quarter Hours Credit		
Name of Course	I	II	III
Speech 203			3
Drama 341-372	3	3	
Drama 301-2-3	3	3	3
Math. 111-12-13	4	3	3
Education 301-387	3	3	
Psychology 312			3
English	3	3	3
Psychology 463			3
Philosophy 323	3		
	19	15	18

Senior Year	Quarter Hours Credit		
Name of Course	I	II	III
Speech 371	3		
Philosophy 323		3	
Drama 411-12	3	3	
Drama 421-22-23	3	6	
Speech 450	3		
Education 471-2			15
Education 462	3		
Speech 361		3	
	15	15	15

Bachelor of Science

Curriculum in Speech and Drama

Freshman Year	Quarter Hours Credit		
Name of Course	I	II	III
Drama 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 or Air Science (M) 151-152-153	1	1	1
History 201-2		3	3
Orientation	1		
	16	15	18

Sophomore Year	Quarter Hours Credit		
Name of Course	I	II	III
Speech 201-2	3	3	
Social Studies 114			3
Speech 211-12-13	3	3	3
Math. 111-12-13	4	3	3
English 211-12-13	3	3	3
Education 201	3		
Psychology 242-43		3	3
Phys. Ed. 20's to 50's or Air Sicence (M) 251-252-253	1	1	1
History 203	3		
	19	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
Electives	3	3	
	18	18	18

Senior Year	Quarter Hours Credit		
Name of Course	I	II	III
Speech 450	3		
Speech 381	3		
Enlish 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

102. *Speech Improvement.* (3) This course deals with listening and speaking and practicum in speech improvement. Students will be tested in speech and hearing at the beginning of the course.

Course requirements include two lectures and two laboratory periods.

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 preparaion and delivery of forensics, as well as participation in classroom discussions. Techniques governing round table, forum and panel discussions will be studied.

204. *Language and Speech Development of Children.* (3) Normal development of speech and language in young children.

207. *Articulation Disorders.* (3) Introductory consideration of diagnostic and therapeutic procedures in dealing with articulation disorders. Prerequisites: Speech 212 and 213.

212. *Phonetics.* (3) An introductory 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).

322. *Stuttering and Allied Disorders.* (3) Theories, etiologies, and therapies as applied to stuttering rehabilitation. Consideration given to allied disorders as cluttering, pyknolepsy, etc.

323. *Psychology of Speech.* (3) Origin of speech in man and its psychological and semantic connotations.

324. *Hearing Disorders.* (3) Symptomatology and pathology of acoustic disorders; principules of audiologic and medical management. Prerequisites: Speech 204, Speech 494 (Anatomy and Physiology of the Hearing Mechanism).

325. *Aural Rehabilitation.* (3) Principles and methods of clinical and classroom retraining of the hard-of-hearing and deaf, including emphasis on auditory training, speech for the deaf, hearing aids, conservation and counseling. Prerequisite: Speech 326.

326. *Basic Audiometry.* (3) Principles and application of basic or pure tone audiometry; its employment in the schools.

328. *Diagnosis in Speech and Hearing.* (3) Principles of diagnosis in locating hearing and speech problems. Prerequisites: Speech 213, 324.

351. *Oral Interpretation.* (3) A study in the appreciation and oral interpretation of literature.

361. *Parliamentary Procedure.* (3) A study of the laws and techniques of parliamentary practices.

371b. *Methods in Public School Speech and Hearing Programs.* (3) Diagnosis, management, organization, and therapy in the public schools. Approval of academic advisor.

381. *Voice Science.* (3) Consideration of aspects of the phonetic, anatomic, physiologic, and physical bases of speech. (Laboratory practice.)

392. *Language and Speech Problems of Cerebral Palsy.* (3) Language and speech disorders associated with cerebral palsy. Consent of advisor.

393. *Anatomy and Physiology of the Vocal Mechanism.* (3) Introductory study of the vocal apparatus from the viewpoint of anatomy and physiology.

394. *Anatomy and Physiology of the Hearing Mechanism.* (3) Brief consideration of the anatomy and physiology of the hearing apparatus.

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.

472b. *Observation and Practicum in Public School Speech Correction.* (12) Observation and internship in public schools at off-campus centers in the state under the direction of an experienced city or county speech clinician. Visitation by University clinical supervisor.

474. *Childhood Aphasia.* (2) Consideration of linguistic, speech educational, and personality problems of children suffering from aphasia. Prerequisites: 21 hours in major field.

475. *Cleft Palate Speech Habilitation.* (2) Oral communication problems, etiology, and remediation of children having cleft lip and palate. Prerequisites: Speech 213 and Speech 393 (Anatomy and Physiology of the Vocal Mechanism).

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.

492. *Special Problems in Speech Pathology.* (2) Seminar study of some selected problems in speech pathology. Prerequisite: 21 hours in major field.

493a-b-c-d-e-f. *Supervised Clinical Practicum.* (6) Experience with speech and voice cases in University speech and hearing clinic, or at some rehabilitation center. May be repeated for credit. Consent of Clinical Director.

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 in theatrical 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. *Modern Drama.* (3) 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 productions 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

201E-202E-203E. *Analytical Thinking.* (9) This course is divided into three parts. Part I, emphasizes the structure and theoretical foundations of knowledge, examining the distinction between accepted fact and verifiable knowledge.

Part II is designed to examine the Social Function of Knowledge. In this section, the student would take selected laws and theories, analyze them and examine the social effects of their acceptance. It is desirable that students have the opportunity to examine a limited selection of such laws and theories which would include examples from several major academic areas: social science and the Arts.

Part III is the Problem Section. The emphasis here is given to the the solution of social problems. In this section, the student is expected to make practical application of the knowledge and understanding gained in Section II in the solution of historical or contemporary problems, collecting data, constructing hypotheses and testing them.

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.

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.

THE HONORS PROGRAM

McDonald Williams, Ph.D., *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 ability and enable them to perform in keeping with their potentials.
2. To give proper guidance to students with exceptional ability.
3. To develop an academic climate that will stimulate all students at the University to perform to their intellectual capacity.

Based upon their composite and English scores on the American College Test (ACT) and/or their high school rank, freshmen are invited to participate in the Honors program. Honors courses for freshmen are: Art, Biology, English, History, Music, Social Studies, and Colloquium.

Sophomore-level honors courses are: Foundations of Education, History, Human Development, Psychology of Learning, Social Studies, World Literature, and Colloquium.

Junior-level honors courses are Curriculum Development and Colloquium.

Senior-level honors courses are Colloquium and Senior Thesis.

Students who are not invited to participate in the Honors Program as entering freshmen may be admitted later by recommendation of a university faculty member.

Following receipt of such recommendations, the Honors Office invites all students so nominated to appear for an interview. Each student is ordinarily interviewed by two faculty members, whose evaluation of him, together with his grade point average, will determine his acceptance.

When a student enters the Honors Program, he is advised by his major department and by the Honors Office. During his four years at the University, the Honors student will take courses both from the regular curriculum and from the offerings of the Honors Program. Ordinarily, the freshman and sophomore students will take two Honors courses each quarter, with Honors Freshman Composition and Honors World Literature being required. Further requirements are the Colloquia—Freshman, Sophomore, Junior, and Senior. The Freshman and Sophomore Colloquia replace the third-quarter courses in freshman and sophomore English, and it is expected that the Junior and Senior Colloquia will fit into the student's schedule as "electives." The Honors Program does not require additional courses beyond those required of other students. Students admitted to the Program later than the first quarter of their freshman year will be exempted from whatever requirements are expected prior to their entrance.

To remain in the Program, a student must maintain a minimum cumulative grade point average of 3.0, based on all course work. If a student's quarter grade average falls below 3.0, he will be placed on probation the following quarter, during which quarter he will be expected to raise his average. Students will be asked to withdraw if their cumulative average or their quarter grade average for two consecutive quarters has dropped below 3.0. If a student later raises his average, he may be readmitted. The initiative, however must be taken by the student. A student may withdraw from the Program at any time, but he should first notify the Honors Office.

Also important in the retention of a student is the quarterly evaluation of him by his Honors teachers, who determine whether he is of Honors calibre and whether he is working up to his potential.

Finally, each Honors student is expected to maintain the highest standards of personal conduct.

With the exception of the Honors Colloquia, grades awarded in Honors courses coincide with those given for courses in the regular curriculum. In the Colloquia, however, the grades are:

H Honor,	4 quality points per quarter hour
P Passing,	3 quality points per quarter hour
NC No Credit.	0 quality points

Students who complete the requirements of the Honors Program will, at commencement, be graduated with "University Honors."

These requirements include:

1. Taking a total of 36 hours of Honors work, or 27 hours if the student enters during his sophomore year.
2. Writing and defending a senior thesis. The student will be allowed freedom of choice in selecting a topic for his Honors thesis. The topic may, for example, be related to his major field of interest or to a colloquium. His choice must, however, be approved by the Honors Advisory Committee. In so far as possible, advisors for the Honors thesis will be members of the Honors faculty. The student will select his topic in the Fall of his senior year, complete his thesis by the beginning of the Spring Quarter, and defend it before the Honors Advisory Committee.
3. Attaining a cumulative average of at least 3.25.

CURRICULUM FOR HONORS PROGRAM

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Art 182H		3	
Biology 181-2-3H	5	5	5
English 181-2H	3	3	
English 183H (Colloquium)			3
History 181-2-3H	3	3	3
Music 181H	3		
Social Studies 181-2-3H	3	3	3
	17	17	14

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Education 281H	3		
English 281-2H	3	3	
English 283H (Colloquium)			3
History 281-2-3H	3	3	3
Psychology 282-3H		3	3
	9	9	9

Junior Year	Quarter Hours Credit			Senior Year	Quarter Hours Credit		
Name of Course	I	II	III	Name of Course	I	II	III
Education 387H	3			Senior Thesis 480H	3		
Colloquium 382H		3	3	Colloquium 481H	3		
	3	3	3		6		

HONORS COURSES

182H. *Honors Art Appreciation.* (3) A comprehensive survey of the art of prehistory: Egypt, 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.

181-2-3H. *Honors Animal Biology.* (15) 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.

181-2H. *Honors Freshman English.* (6) 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.

181H. *Honors Growth of Civilization.* (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 Growth of Civilization.* (3) The Course of Civilization: The Early Middle Ages. Later Middle Ages—Man's development in Asia, Europe, Mediterranean, African and the Middle East and the Western Hemisphere.

183H. *Honors Growth of Civilization.* (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. *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.

181-2-3H. *Honors Social Studies.* (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.

183H. *Honors Freshman English (colloquium).* (3) Lectures, discussions and student writing based on the 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 conducted by two members of the Honors faculty. Offered in spring quarter.

281H. *Honors American History.* (3) An intensive and extensive investigation of the history of the United States. The emphasis is upon man and his ideas and ideals and issues and personalities—and how they met responsibilities and challenges in their time for posterity. The following topics are to be considered: (1) A new nation is born; (2) The United States Establishes itself at home and abroad; (3) Nationalism, Sectionalism and Jacksonian 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. *Honors 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 experiences will be provided as part of the overall learning process.

281-282H. *Honors World Literature.* (6) 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.

283H. *Honors World Literature (colloquium).* (3) Lectures, discussions and student writing based on the central theme "The Good Society." Original work and interpretations and adaptations of original works are bases for discussions. The course is conducted by two members of the Honors faculty. Offered in spring quarter.

382H. *Honors Junior Colloquium.* (3) Lectures, discussions, and student writing based on the central theme "The Twentieth Century." Original work and interpretations and adaptations of original works are bases for discussions. The course is conducted by two members of the Honors faculty. Offered in fall quarter.

387H. *Curriculum Development.* (3) The course is designed (1) to give students an opportunity to critically study the major stages of development of the school curriculum in public education in the United States; (2) to study in depth those forces and factors in our culture which have brought about major changes in the structure, content and methodology in public education; (3) to participate in elementary research through interpretation of available data bearing on curriculum revision; and (4) to give practice in identifying and discussing current issues, problems, practices, innovations, and trends in the total area of the development of curriculum theory. Offered in the fall quarter.

480H. *Honors Senior Thesis.* (3) The student will be allowed freedom of choice in selecting a topic for his Honors thesis. The topic may, for example, be related to his major field of interest or to a colloquium. His choice must, however, be approved by the Honors Advisory Committee. In so far as possible, advisors for the Honors thesis will be members of the Honors faculty. The student will select his topic in the Fall Quarter of his senior year, complete his thesis by the beginning of the Spring Quarter, and defend it before the Honors Advisory Committee and such other persons who may be invited to sit with the Committee.

481H. *Honors Senior Colloquium.* (3) Lectures, discussions, and student writing based on the central theme "The Educated Man." Original work and interpretations and adaptations of original works are bases for discussions. The course is conducted by two members of the Honors faculty. Offered in fall quarter.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SCHOOL OF EDUCATION

MALCOLM D. WILLIAMS, Dean

Faculty:

Department of Administration, Curriculum and Instruction

Bernice Armstead, Katarina B. Biggs, Jerry D. Crosby, Dorothy W. Draper, Lois H. Daniel, C. B. Fancher, Evelyn P. Fancher, Arthur E. Franklin, Pearl K. Gunter, Earline Hudson, Mildred S. Hurley, Darlene L. Hutson, Bessie Kean, Charity Mance, Gretchen B. Payne, Joseph A. Payne, Tee Peacock, Ruth Marie Powell, Elizabeth C. Reed, Marian T. Roberts, Solomon H. Shannon, Gwendolyn Simmons, Muriel Simmons, Helen N. Teague, Edna J. Williams, and Malcolm D. Williams.

Department of Art and Music

Art

John W. Arterbery, Hiram V. Gordon, Theodore J. Jones, and Gregory D. Ridley.

Music

D. E. Barrett, Florence N. Bowser, Eddie T. Goins, Frank T. Greer, Edward C. Lewis, Lloyd L. Lusk, Daniel E. Owens, C. A. Rhodes, Marcus M. Rowland, John Sharpe, William O. Smith, Carol Stone, Lula R. Simpson, and Ralph R. Simpson.

Division of Business

Department of Economics and Business Administration

W. H. Bowens, Ernest W. Brown, John H. Frazier, Martin J. Goldberg, Lewis R. Holland, Robert N. Holzmer, R. Grann Lloyd, Roger P. Nimmo, M. R. Paruchuri, V. M. Sardessai and Richard M. Sheehan.

Department of Business Education

Augustus Bankhead, Cecille E. Crump, Mattie L. Gordon, Mary L. Jackson, Camille D. Robinson, William D. Stinson, and Bernita M. Tollerson.

Department of Health, Physical Education and Recreation

Samuel Abernathy, Hylon Adams, James I. Bass, J. C. Coffee, Donald Corbett, Inez Crutchfield, Will Anne Davenport, Carrie M. Gentry, Howard C. Gentry, J. Gilliam, Howard Green, Audrey E. Lewis, Shannon D. Little, Edward A. Martin, John A. Merritt, Maxine O. Merritt, Richard A. Miller, E. P. Mitchell, Arthur Simmons, Mary M. Watkins, Peggy M. Williams, and Harrison B. Wilson.

Department of Psychology

Calvin O. Atchison, Carolyn E. Ball, Emma W. Bragg, Eura O. L. Burks, Ralph Butler, Montraville I. Claiborne, Pearl G. Dansby, Pauline M. James, Luther Kindall, Gloria M. Lewis, Edna Lockert, Ruby W. Martin, Frederick J. D. McKinney, Albert T. Milam, Harold L. Phelps, Robert L. Ritter, Tommie M. Samkange, Jas. H. Threalkill, Lois B. Walker, and Lucy R. Wilson.

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, Physical Education and Recreation; and the Department of Psychology.

The School of Education has established, through cooperative agreements, student teaching centers in the school systems of Chattanooga, Memphis and Metropolitan Nashville-Davidson County. Other school systems in the state of Tennessee, also, assist with the student teaching program.

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 advisors 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.

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 made by the Bureau of students, employees, and alumni of the University.

Public Services

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 63 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 an 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 Council on Teacher Education 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 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 Council on Teacher Education for Tennessee 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 Faculty and the President of the University.

The Committee is composed of nine members as follows: Graduate School —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 Ex-Officio and Director of Teacher Education. 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 aproved 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 courses (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 undergraduate Teacher Education Committee as being of major importance.

Candidates who are not approved for admission to teacher education and students who do not have a permanent or provisional certificate will not be permitted to enroll in the following courses: Ed. 301, 387, 462; Psy. 312, 463 and all method courses.

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 maximum 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. Students who complete all requirements and make a "D" in Student Teaching may graduate from the University, but will not be recommended for certification.

Note: Students are permitted to take each of the tests stated above only three (3) times. Students have to pass all the tests the quarter before they apply to do student teaching. Example: Students who pass all tests the Fall Quarter may make application the Winter Quarter to do student teaching the Spring Quarter.

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 12 quarter hours and a 3 quarter-hour methods course).

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. 381—Early Childhood Education.
Ed. 443—Principles of Teaching in the Elementary School.
Ed. 472e—Student Teaching in the Elementary School.

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 qualified for State teacher certification in elementary education.

PROGRAM FOR TEACHERS OF THE KINDERGARTEN

This program includes the approved program for grades 1-9. Students desiring kindergarten certification in addition to certification in grades 1-9 must include, as a part of Education 472e *Student Teaching in the Elementary School,* 140 hours of teaching on the kindergarten level.

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 (66 quarter hours)
A minimum of 66 quarter hours in 300 and 400 level courses
A minimum of 6 quarters of required physical education
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, 381, 387, 443, 462, 472e, 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.
Education 321, 322, 323, 324, 381 must be taken by all students seeking certification in the fall, winter, or spring quarter.

SUMMARY OF COURSES REQUIRED FOR ELEMENTARY EDUCATION MAJOR

Courses	*Quarter Hour Credit*	
1. *General Education Program*		66
Communications:		9
English 101-2-3	9	
Health, Physical Education, and		9
Personal Development or Home and Family Living		
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		15
History 121-122-123	6	
Sociology 211	3	
Economics 201	3	
Anthropology 221	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		30	
Education 321	3		
Education 322	3		
Education 323	3		
Education 324	3		
Education 381	3		
Education 443	3		
Education 472e	12		
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		
Ed 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		21	
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)		21	
5. Total hours required for graduation			196

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	102	103
Geography		171	172
or			173
History	121	122	
or		123	
Mathematics	103	111	112
Art	133		
Music			131
Health		3	3
Lib. Science	211		
Orientation	101		
P. E.	1	1	1
Air Science (M)	1	1	1
Women	17	16	16
Men	18	17	16

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English	211	212	261
Science	121	122	123
History	201	202	
or		203	
Sociology	211		
Anthropology		221	
Economics			211
Health			213
Education	201		
Psychology		242	243
P. E. 20-50	1	1	1
Air Science	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 310-387	3	3	
Psychology 312			3
Speech 201-202	3	3	
P. E. 243			3
History 341 or 342	3		
Education 381			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	3
Education 463		3	
Anthropology			3
Economics			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.

Ed. 310. *Penmanship.* (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 chalkboard work.

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: Math. 103, Psych. 242-243. Must be taken in fall, winter or spring quarter.

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. Must be taken in fall, winter or spring quarter.

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: Hist. 121-2-3, 201-2-3, Geog. 171-2-3, Psych. 242, 243. Must be taken in fall, winter or spring quarter.

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. Prerequisites: 242, 243. Must be taken in fall, winter or spring quarter.

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.

381. *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.

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.)

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. Concurrent with 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.

490. *Education for the Disadvantaged.* (3) This course is designed to develop an understanding of the circumstances of life for the disadvantaged, acquaint students with the characteristics and special needs of the disadvantaged, and develop understanding of materials and procedures for effective motivation and teaching the disadvantaged—3 quarter hours credit, Offered in the Winter and Spring quarters.

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 and classroom observation 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 of 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

Lois H. Daniel, M.A., *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

	Quarter		
Name of Course	*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 or Ed. 473			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 catalog, 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 sevices. Three lectures.

362. *Books 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. Ed. 473 may be substituted for this course.

THE DEPARTMENT OF MUSIC AND ART

EDWARD C. LEWIS, Ph.D., *Head*

General Statement

The department of Music and Art 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 a curriculum 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.

The Department of Music holds full membership in the National Association of Schools of Music.

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.

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, Chapel Choir, 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 Recital Hall. 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

CURRICULUM I

Teacher Education
Piano Major

Freshman Year	Quarter Hours Credit		
Name of Course	*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	1	1
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	15	15

Sophomore Year	Quarter Hours Credit		
Name of Course	*I*	*II*	*III*
Science 121-2-3	4	4	4
Music 220-1-2	3	3	3
Mathematics 111, 112	3	3	
Music 131, Art 133		3	3
Ed. 201, Psy. 242-43	3	3	3
P. E. AFROTC	1	1	1
Choir or Band	1	1	1
Music 21a, b, c	1	1	1
	16	19	16

Junior Year	Quarter Hours Credit		
Name of Course	*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	Quarter Hours Credit		
Name of Course	*I*	*II*	*III*
Music 420-21	3		3
Music 430			3
Health 211	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	14

CURRICULUM II

Teacher Education
Voice Major

Freshman Year	Quarter Hours Credit		
Name of Course	*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	1	1
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	16	16

Sophomore Year	Quarter Hours Credit		
Name of Course	*I*	*II*	*III*
Science 121-2-3	4	4	4
Music 220-1-2	3	3	3
Mathematics 111	3		
Music 131, Art 133		3	3
Ed. 201, Psy. 242, 243	3	3	3
P. E., AFROTC	1	1	1
Choir	1	1	1
Music 24a, b, c	2	2	2
Music 21a, b, c	1	1	1
	18	18	18

Junior Year	Quarter Hours Credit		
Name of Course	*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	Quarter Hours Credit		
Name of Course	*I*	*II*	*III*
Music 420-21	3		3
Music 430			3
Health 211, Math 112	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	17

CURRICULUM III
Teacher Education
Instrumental Major

Freshman Year	Quarter Hours Credit		
Name of Course	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	1	1
Music 104-5-7	1	1	1
Band	1	1	1
Music 11a, b, c	1	1	1
Major Applied	2	2	2
	16	16	16

Sophomore Year	Quarter Hours Credit		
Name of Course	I	II	III
Science 121-2-3	4	4	4
Music 220-1-2	3	3	3
Math 111	3		
Music 131, Art 133		3	3
Ed. 201, Psy. 242-243	3	3	3
P. E., AFROTC	1	1	1
Band	1	1	1
Music 21a, b, c	1	1	1
Major Applied	2	2	2
	18	18	18

Junior Year	Quarter Hours Credit		
Name of Course	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	Quarter Hours Credit		
Name of Course	I	II	III
Music 420-21	3		3
Music 430			3
Health 211			3
Math 112			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

CURRICULUM IN MUSIC
Bachelor of Arts

This curriculum is designed to develop an understanding of man, of civilization, of contemporary society, of the prevailing scientific ideas, and of the art and craft of music. This program will provide an academic line of pursuit for those students interested and talented in music, but not particularly aiming for the profession of teaching.

Summary of Hours Required:

General Education	81 hours
Music—Theory and Applied	97 hours
Electives	
Humanities (Select from Phil. 301, 323; Art 331, 332, 333; Drama 301, 302, 311, 312)	9 hours
General (Select from Health 301, 304; Psychology 221, 222; Social Studies; Speech 201)	9 hours
Total	196 hours

Bachelor of Arts Program

FRESHMAN			
Course and Number	I	II	III
English 101-102-103	3	3	3
Social Studies	3	3	3
Music 120-121-122	4	4	4
P. E. or AFROTC	1	1	1
Minor Piano	1	1	1
Major Ensemble	1	1	1
Math 111-2-3	3	3	3
	16	16	16

SOPHOMORE			
Course and Number	I	II	III
For. Lan.	3	3	3
Soc. Studies; Music. 131, Art 133	3	3	3
Music 220-221-222	3	3	3
P. E. or AFROTC	1	1	1
Technique Class	1	1	1
Minor Piano	1	1	1
Major Ensemble	1	1	1
Literature 211-212-213	3	3	3
	16	16	16

JUNIOR			
Course and Number	*I*	*II*	*III*
Science	4	4	4
For. Lang.	3	3	3
Music 320-321-305	3	3	3
Technique Class			1
Major Ensemble	1	1	1
Music 337-338-339	3	3	3
Phil. 323, Art. 133, Elective	3	3	3
	17	17	18

SENIOR			
Course and Number	*I*	*II*	*III*
Music 433-434-435	3	3	3
Music 420-421-422	3	3	3
Music 430-431-428	3	3	3
Music 451			1
Major Ensemble	1	1	1
Elective	6	6	6
	16	16	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 hour 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, phasing, 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.

* Approved for graduate credit.

15A, B, C. *First Year Cornet (Trumpet or French Horn).* (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 (Trumpet or French Horn).* (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 Cornet (Trumpet or French Horn).* (6) Instruction with standard advanced materials. Two one-half hour periods. Laboratory fee $7.00.

16A, B, C. *First Year Trombone (Baritone Horn or Tuba).* (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 (Baritone Horn or Tuba).* (6) The study of standard intermediate materials. Prerequisite: Trombone 16C. Two one-half hour periods. Laboratory fee $7.00.

36A, B, C.
46A, B, C. } *Third and Fourth year Trombone (Baritone Horn or Tuba).* (6) Instruction with standard advanced materials. Two one-half hour periods. Laboratory fee $7.00.

17A, B, C. *First Year Clarinet (or flute).* (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 (or flute).* (6) The study of standard intermediate materials. Prerequisite: 17C. Two one-half hour periods. Laboratory fee $7.00.

37A, B, C.
47A, B, C. } *Third and Fourth Year Clarinet (or flute).* (6) Instruction with standard advanced materials. Two one-half hour periods. Laboratory fee $7.00.

18A, B, C. *First Year Oboe (or Bassoon).* (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.

28A, B, C. *Second Year Oboe (or Bassoon).* (6) Instruction with standard intermediate materials. Prerequisite: Oboe 18C. One-half hour periods. Laboratory fee $7.00.

38A, B, C.
48 B, C. } *Third and Fourth Year Oboe (or Bassoon).* (6) Individual instruction 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.
49A, B, C. } *Third and Fourth Year Saxophone.* (6) Instruction with standard advanced materials. Two one-half hour periods. Laboratory fee $7.00.

10A, B, C. *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.

20A, B, C. *Second Year Percussion.* (6) Continuation of above. Attention to bass drum and timpani. One full hour instruction per week.

30A, B, C. *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.

40A, B, C. *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.

String Ensemble. (1) The study and performance of representative literature for string ensemble and small orchestra with special emphasis on material suitable for beginning string programs for the public school. Membership required for all string majors, open to all students with proficiency on a string instrument. Two (2) rehearsals per week.

University Choir: Chapel Choir. (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. *Introduction to Public School Music.* (6) 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.

371d. *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.

434. *Seminar in Jazz.* (2) A study of the history of jazz and an analysis of the styles and major contributors. Two 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. Five 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 compositions 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

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	3	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 or Air Sci. (Men)	1	1	1
Art 101-2-3	3	3	3
	16	16	16

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 211-2-3	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 or Air Science (Men)	1	1	1
	17	17	14

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

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.

Art 321-2-3. *Painting in Oils.* (9) Painting in oils and substitutes from still life, landscapes, and models with the objective of developing color sense, technic of organization, textural effects, proportion, and with emphasis on portraiture and free expression.

331-2-3. *Art History.* (9) Survey courses from early Egyptian 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.

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 education 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 instruction in those phases of business that concern every member of organized society; and (4) to educate students for the teaching of business subjects on the secondary and collegiate levels.

ORGANIZATION

The Division of Business offers five curricula: Accounting, Business Education, Economics and Business Administration, Insurance and Banking, and Office Administration. A program in distributive education and special curricula may be followed by non-college degree seeking enrollees. A master of education degree is offered in Business Education.

The Division of Business sponsors a chapter of the Future Business Leaders of America—an organization open to all students in the Division.

DEPARTMENT OF ECONOMICS AND BUSINESS ADMINISTRATION

Lewis R. Holland, M.C.S., *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.

BUREAU OF ECONOMICS AND BUSINESS RESEARCH

The Bureau of Economic and Business Research, established in 1965, engages in research programs and studies designed to contribute to economic and business knowledge, and to enhance public understanding of the socioeco-politico environment in which business operates. Hence, the Bureau conducts basic and applied research in economics and business, government and the legal environment in which business and the economy operate, and public attitudes and motivations. The Bureau also aids indi-

viduals and groups interested in the Tennessee economy, and assists public and government organizations with their research programs and problems.

The Bureau of Economic and Business Research publishes The Tennessee State University *Business and Economic Review* quarterly. It also publishes reports of research findings and group activities periodically as these are completed.

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 field 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 last forty-five quarter hours in the field of Business Administration with a major emphasis in accounting and general business. Required courses include: B.A. 323-327, 331-332, 335, 420-421, 450 and Econ. 301, 304, 315, 404-405, and 419. Sixty quarter hours must be completed in courses on the 300 and 400 levels. One hundred and ninety-five quarter hours are required for graduation.

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
Natural Science 121-22-23 or Biology 101-2-3 or Chemistry 111-12-13	4	4	4
History 201-2-3	3	3	3
Art 133			3
Math 111-12-13	3	3	3
Phys. Ed. 11-12-13 or Air. Sci. 151-52-53	1	1	1
	17	17	17

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Acctg. 311-12-13	3	3	3
B. A. 335			3
B. A. 323-24-25	3	3	3
B. A. 331-32	3	3	
Econ. 301-304-315	3	3	3
Psy. 221-22	3	3	
English 321	3		
Econ. 302 or B. A. 337			3
B. A. 326-27		3	3
	18	18	18

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Acctg. 211-12-13	4	4	4
B. A. 201			3
Economics 211-12-13	3	3	3
Pol. Sci. 221-22	3	3	
Phys. Ed. 20-50 or Air. Sci. 251-52-53	1	1	1
English 211-12-13	3	3	3
Philosophy or Music	3		
Electives		3	
	17	17	14

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
B. A. 425		3	
B. A. 420-21		3	3
B. A. 328		3	
B. A. 423 or 441	3		
B. A. 433-34	3	3	
Econ. 404-5-19	3	3	3
Psy. 311	3		
B. A. 450	3		
B. A. 422			3
Electives			3
	15	15	12

* Basic knowledge of keyboard required, including typing at 40 words a minute. Optional: For those entering who have met above requirements.

A PROGRAM WITH EMPHASIS IN ACCOUNTING

Freshman Year	Quarter Hours Credit		
Name of Course	I	II	III
English 101-02-03	3	3	3
Math 11-12-73	3	3	3
Natural Science 121-22-23 or Biology 101-02-03 or Chemistry 111-12-13	4	4	4
B. A. 101	3		
B. A. 102		3	
Art 133			3
Accounting 211-12-13	3	3	3
Acctg. Lab 111-12-13	1	1	1
	17	17	17

Junior Year	Quarter Hours Credit		
Name of Course	I	II	III
B. A. 323-24-25	3	3	3
Psy. 311	3		
B. A. 326-27		3	3
B. A. 335			3
English 321-22	3	3	
Accounting 400-01		3	3
Accounting 314-15-16	3	3	3
Economics (Elective)			3
Accounting 411-12	3	3	
Elective	3		
Phys. Ed. 20-50	1	1	1
	19	19	19

Sophomore Year	Quarter Hours Credit		
Name of Course	I	II	III
Economics 211-12-13	3	3	3
Phil. or Music	3		
English 211-12-13	3	3	3
History 201-02-03	3	3	3
Psychology 221-22		3	3
Accounting 311-12-13	3	3	3
Electives	3	3	
Pol. Sci. 221			3
Phys. Ed. 11-12-13 or Air Science° 251-52-53	1	1	1
	19	19	19

Senior Year	Quarter Hours Credit		
Name of Course	I	II	III
B. A. 450	3		
Accounting 413-14	3	3	
Economics 420-22		3	3
B. A. 423-24	3	3	
B. A. 433-34		3	3
Electives	9	6	12
	18	18	18

Electives:

Econ. 301 (3)	B. A. 330 (3)
Econ. 315 (3)	B. A. 328 (3)
Econ. 303 (3)	B. A. 329 (3)
	B. A. 401 (3)
Econ. 403 (3)	B. A. 402 (3)
Econ. 404 (3)	B. A. 403 (3)
Econ. 419 (3)	B. A. 422 (3)
Econ. 304 (3)	B. A. 425 (3)

COURSE DESCRIPTIONS

Accounting

211-12-13. *Elementary Accounting.* (12) A basic course in accounting theory and practice. A prerequisite to all other courses in accounting. Three lectures and two one-hour laboratory periods per week.

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. 341-421-422). 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.

301. *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. (Formerly B.A. 201).

302. *Basic Computer Programming.* (3) This course deals with such matters as the 1401/1620 data processing system components; instruction and data flow; symbolic programming system; 1401/1620 instruction set: (a) input/output operations, (b) data transfer operations, (c) logic operations, (d) arithments. Prerequisite: B.A. 301.

303. *Autocoder Programming.* (3) This course deals with coding; assembly; process control statements; declarative statements; testing and debugging procedures, including patching and core dumps; comprehensive case practice problems and similar and related topics. Prerequisites: B.A. 301-2.

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. Prerequisite: English 321.

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, Partnership, 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. Prerequisite: 12 hours of Economics or Permission of the Instructor.

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 task of the business manager; correlation of the productive functions; scientific management; basic features of business administration.

450. *Senior Seminar.* (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. Prerequisite: 9 hours in Economics or Permission of Instructor.

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. Prerequisite: 9 hours in Economics or Permission of Instructor.

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 211-12-13.

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. Prerequisite: 9 hours in Economics or Permission of Instructor.

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. Prerequisite: Economics 211-12-13 or Permission of Instructor.

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. Prerequisite 12 hours of Economics or Permission of Instructor.

404. *Comparative Economic Systems.* (3) The study and appraisal of the operation of and theories underlying capitalism, fascism, socialism, communism, and other economic systems. Prerequisite 12 hours of Economics or Permission of Instructor.

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 integration, foreign investments and related topics. Prerequisite: 12 hours in Economics or Permission of the Instructor.

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. Prerequisite: 18 hours of Economics or Permission of the Instructor.

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. Prerequisite: 12 hours of Economics or Permission of Instructor.

DEPARTMENT OF BUSINESS EDUCATION

CECILLE E. CRUMP, Ed.D., *Head*

The Department of Business Education offers curriculums in the following areas: Teacher Education with emphasis in stenography, marketing, accounting, and economics; and in clerical work, stenography, and office machines.

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 available to all students in Business Education on the basis of superior attainment during the first two years of college work. Students may also seek membership in the National Collegiate Association for secretaries.

Requirements for Undergraduate Degree

A total of 192 hours is required for graduation, of which 70 hours must be completed in the 300 and 400 level courses. A minimum 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.

Certification in Tennessee

Students following the program of study for Business Education can qualify for 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.

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 two 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 eight weeks. They return to the department the last week of the quarter for an evaluation of their experiences.

Pre-requisites: Course pre-requisites are OA 305 and OA 306. In addition, the student must pass two stenographic employment tests with at least a "B" rating before enrolling for office internship. Tests which may be taken are as follows: Federal Civil Service, Atomic Energy Commission, Tennessee Valley Authority, and the State Employment Test.

Cooperative Education: The department has agreements with the Atomic Energy Commission and with the Tennessee Valley Authority whereby a student, after completing his sophomore year, can alternate work experience with school experience; that is, the student can attend school one quarter then work the next. The student will be considered an employee of the employing agency and will receive wages commensurate with the employment status.

Minor

The Department of Business Education offers a minor in business education or office administration to students in other divisions or departments of the University. Forty-five (45) quarter hours in Business Education and 45 in 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.

Courses for Business Education *

BA 101	3	OA 204-5-6	9
OA 201	3	Acct. 211-12-13	9
OA 212-13 (or equivalency in performance)	6	BA 323	3
OA 221	3		

*Provided Teacher Education requirements have been met in another department. If not, the following courses must be added: BE 371ABC; Ed 472.

Courses in Office Administration

BA 101	3	OA 204-4-6	9
OA 201	3	OA 301-2	6
OA 212-13 (or equivalency of performance)	6	Acct. 211-12-13	9
OA 221	3	OA 401	3
		BA 323	3

TEACHER EDUCATION CURRICULUM IN BUSINESS EDUCATION

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 101-2-3	3	3	3
Math 111-12, 173	4	3	3
Hist 121-22-23	3	3	3
Mus 131, Art 133, Hlth 151	3	3	3
OA 213, 221, 222		3	3
BE 101	1		
Phys Ed 11-12-13	1	1	1
	15	16	16

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 211-12-13	3	3	3
Science 121-22-23	4	4	4
Econ 211-12-13	3	3	3
Major Sequence	3	3	3
Ed 201, Psy 242-243	3	3	3
Phys Ed	1	1	1
	17	17	17

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Major Sequence	3	3	3
Acct. 211-12-13	4	4	4
BA 323-24-25, Sp 221	3	3	3
Ed 301-387, BE 400	3	3	3
Eng 321-22, OA 201	3	3	3
Electives			2
	16	16	18

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
BE 317A-B-C	6		
BE 472		12	
Psy 312-463	6		
BE 450		3	
Major Sequence			9
Soc Stud			3
Psy 311	3		
BA 331	3		
Electives			5
	18	15	17

Major Sequences

A. Distributive Ed.		B. Accounting		C. Economics		D. Stenography	
BA 326-27	6	Acct. 311-12-13	9	Econ 204	3	OA 206, 304-5	9
BA 328-29	6	Acct. 411	3	Econ 301-2-3	9	OA 306, 434	6
BA 330	3	BA 420-21-22	9	Econ 304-315	6	OA 401-2-3	9
BA 431-32-33	9	BA 433	3	Econ 401-404	6		
	24		24		24		24

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 101-2-3	3	3	3
History 121-22-23	3	3	3
Math 111-12, 173	4	3	3
Mus 131, Art 133, Hlth 151	3	3	3
OA 212-213, 221-222		3	3
BE 101	1		
Psys Ed 11-12-13	1	1	1
	15	16	16

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 211-12-13	3	3	3
Science 221-22-23	4	4	4
Economics 211-12-13	3	3	3
OA 204-5-6	3	3	3
Spch 221, Eng 272, Psy 221	3	3	3
Phys Ed	1	1	1
	17	17	17

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
OA 304-5-6	3	3	3
Eng 321-22-23	3	3	3
Acct 211-12-13	4	4	4
BA 323-24-25	3	3	3
BA 326	3		
OA 201-2		3	3
	16	16	16

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
OA 401-2-3			9
BA 423, 335	3	3	
BE 450	3		
BA 331-332	3	3	
Psy 311	3		
OA 301-2	3	3	
OA 434			3
Electives	3	9	4
	18	18	16

DESCRIPTION OF COURSES

OFFICE ADMINISTRATION

201. *Computing Machines.* (3) Basic instruction and training to develop skill in the operation of computing machines, including adding machnes, calculators, and comptometers.

202. *Duplicating Machines.* (3) Basic instruction and training to develop skill in the operation of duplicating machines, including direct and stencil process, off-set process, addressing machines, copiers, and transcribing machines.

204-5-6. *Beginning Shorthand.* (9) Designed to develop an understanding of the basic principles of Gregg Shorthand, and the ability to apply these principles to an extensive shorthand writing vocabulary.

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.

221-222. *Production Typewriting.* (6) Development of superior skill in typewriting, to enable students to meet the demand for higher production rates for typewritten material.

301. *Office Systems.* (3) Routine and procedures for handling correspondence and filing systems, oral communication, office planning and layout. Systems control applied to each area of office work.

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.

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. Classes meet five days a week, and extra laboratory hours are arranged.

304. *Advanced Shorthand and Transcription.* (3) Skill in taking dictation and in typewritten transcription is developed to build skill in maximum production of mailable type transcripts.

305-6. *Secretarial Procedures.* (6) Instruction in office procedures, performance of upper-level secretarial duties, filing, business ethics, and personality development.

401-2-3. *Office Internship and Secretarial Problems.* (12) Based on a job-training program which provides opportunity for practical experience under actual office conditions. For seniors only.

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

101. *Orientation to Business.* (1) 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 of the course, students study principles of business.

400. *Principles and Philosophy of Vocational Business Education.* (3) A study of the historical background, philosophy and objectives, principles and problems, and trends in vocational business education.

450. *Senior Project Writing.* (3) Designed to aid the senior student in writing the project required for graduation.

371A. *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.

371B. *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.

371C. *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.

475. *Stenograph Complete Teacher-Education Course.* (3) Touch shorthand training course. Analysis of *teaching techniques,* initial mastery of entire touch shorthand theory, and development of basic dictation speeds.

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 Machines 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, 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 office 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 record-keeping 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 operating 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 required in business.

OA 71-72-73. *Personal-Social Relations.* (3) An understanding of and skill in interpersonal 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, PHYSICAL EDUCATION AND RECREATION

E. Preston Mitchell, Ph.D., *Head* and *Chairman of the Graduate Division*
Audrey E. Lewis, Ed.D., *Chairman of the Upper Division*
Harrison B. Wilson, H.S.D., *Chairman of the Lower Division*

The curriculum in the Department of Health, Physical Education and Recreation 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 197 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 63 quarter hours in the General Education Curriculum and 42 quarter hours in Core Professional Education as outlined and prescribed by the University. Students must have been admitted to teacher education candidacy before taking 300 and 400 level courses in HPE.

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 with a minor 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 from competent medical authorities 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
P.E. 14	Gymnastics (HPE Majors Only)	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	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. 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. 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 apparel 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, golf and gymnastics 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. Men students are not required to purchase locks.

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
HPER 401	Seminar in Health, Physical Educ. and Recreation	3
HPER 402	Organization and Administration of Health and Physical Education	3
HPER 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

UNDERGRADUATE CURRICULUM IN HEALTH INSTRUCTION

The purpose of this curriculum in health instruction is to prepare students to teach health on the secondary level, grades seven through twelve.

Course requirements total 200 hours. All requirements above the General Education core must be passed with a "C" grade or better. All students must have passed the department physical fitness test prior to being enrolled in fundamental and techniques courses.

THE CURRICULUM

Name of Course	Quarter Hours Credit		
First Year	*I*	*II*	*III*
English 101, 102, 103	3	3	3
Mathematics 111,112	4	3	
Biology 101, 102, 103	4	4	4
Art 133			3
HPER 101	3		
Hlth 151		3	
Soc. 211-2-3	3	3	3
Music 131			3
	17	16	16
Second Year			
Literature 211, 212, 213	3	3	3
Chemistry 111, 112, 113	4	4	4
Zoology 202, 203		5	5
Health 211, 212, 213	3	3	3
Nutrition 212	3		
Education 201	3		
Psychology 242, 243		3	3
P.E. (Required) 11-12-13	1	1	1
	17	19	19

Name of Course	Quarter Hours Credit		
Third Year	*I*	*II*	*III*
Education 473			3
Education 301, 387, 462	3	3	3
Health 301, 302, 304	3	3	3
Psychology 312	3		
Physical Education 311, 312		3	3
HPER 404	3		
Microbiology 241, 412	5	4	
Health 371 H			3
P.E. (required) 14-50's	1	1	1
Soc. 221		3	
	18	17	16
Fourth Year			
Education 471-2			15
Phychology 463	3		
Health and Phy Ed 401, 402, 403	3	6	
HPER 450	3		
Sociology 452, 453	3	3	
Electives	3	3	
Psychology 312		3	
	15	15	15

Undergraduate

101. *Health, Physical Education and Recreation Orientation.* (3) Introduces freshman to the requirements for effective college living in general and to the fields of health, recreation and physical education in particular. Includes a review of objectives, sicentific foundations, opportunities for service and the qualifications and preparation of professional personnel in these three 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. Prerequisite: Health 151.

212. *School Hygiene.* (3) Concerned with giving general information regarding the total environment in which the individual 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. Prerequisites: Health 151, 211.

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. Prerequisites: Health 151, 211, and 212.

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. Prerequisites: Health 151, 211, 212, 213.

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, burns, sprains, wounds and shock. A Red Cross Certificate is given for successful completion of the course. Required of all majors in health education, physical education and recreation. Prerequisites: Health 151, 211, 212.

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 maternal 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, physical education and recreation. Prerequisites: Health 151, 211, 212, 213, 301.

371H. *Methods in Health Education.* (3) Concerned with the theoretical concepts of methodology and unit planning as well as with the practical presentation of health content, oral presentation, demonstrations and experiments, field trips, and programmed instruction. The total aspects of secondary health education are included in this course. Prerequisites: Health 151, 211, 212, and 213.

371S. *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 on 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. Students enrolled in 371 must reserve Tuesday and Thursday mornings for observations of teaching on secondary level.

371E. *Materials and Methods in Physical Education for Elementary Schools.* (3) Special attention is given to content of the program, methods, procedures, techniques and equipment used in physical education programs in elementary schools. Class

organization, teaching techniques, program planning, low organizational activities, team sports, individual and couple activities, and dance activities are included in this course. Required of majors and minors in health and physical education. Prerequisites: PE 221, 222, 243, four hours fundamental and techniques, and 371-S. Tuesday and Thursday mornings are reserved for observation of physical education program on the elementary level.

401. *Seminar in Health, Physical Education and Recreation.* (3) Designed to acquaint the prospective teacher with changing trends in health education, physical education and recreation as related to present educational practices. Conducted on a problem—project basis. Required of all majors in health, physical education, and recreation and minors in health education or physical education. Prerequisites: Twenty-one quarter hours in health education, physical education and recreation 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 planning a program and initiating it in relation to the entire curriculum of the school and to community needs. Includes utilization and care of facilites 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, physical education and recreation 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 physical education and minors in health education and physical education. Prerequisite: Health Education 302, P.E. 311, 312 and twenty-one quarter hours in health, physical education and recreation 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 tecniques used in taping and bandaging are provided. Required for male majors in HPER. Prerequisite: P.E. 302, 311, 312.

450. *Senior Project.* (3) Designed to give the student an opportunity to initiate and develop a problem of interest to him in the area of health, physical education and recreation. 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.

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 Studies 111-112-113	3	3	3
Biology 101, 102, 103	4	4	4
Health Educ. 151	3		
Art 133		3	
Music 131			3
Mathematics 111-112		4	3
HPE 101 Orientation	3		
PE 11-12-13	1	1	1
	17	18	17

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Literature 211, 212, 213	3	3	3
Social Studies 114	3		
Zoology 202, 203		5	5
Health Educ. 211, 212, 213	3	3	3
Education 201	3		
Psychology 242, 243		3	3
P.E. 103		2	
Phy. Educ. 14-202, 243	1	1	3
Required P.E. 11, 12, 13	1	1	1
P.E. 203	1		
P.E. 101M, 201W	1		
	16	18	18

Junior Year	Quarter Hours Credit		
Name of Course	I	II	III
Education 301, 472, 387	3		3
Health Educ. 301, 302, 304	3	3	3
Psychology 312	3		
Phy. Educ. 311, 312, 371E	3	3	3
Phy. Educ. 421M, 431, 213	2	3	1
Health and Physical Education 333, 371E	3	3	
P.E. 235, 212, 233	1	1	1
P.E. 231, 211, 221	1	2	1
P.E. 234, 240	1	1	
Nutrition			3
	17	16	18

Senior Year	Quarter Hours Credit		
Name of Course	I	II	III
Education 471-2	15		
Phychology 460-463		3	3
Health and Phys. Educ. 401, 402, 403		3	6
Health and Physical Education 450		3	
Phys. Educ. 423, 434		2	5
Electives			3
P.E. 404		3	
	15	14	17

SUMMARY OF REQUIREMENTS FOR HEALTH AND PHYSICAL EDUCATION MAJORS

Area	Quarter Hours
General Education	64
Core Professional	45
Major: Health and Physical Education	72
Zoology 202, 203	10
Electives	9
Total	200

Health and Physical Education Majors are required to complete fundamentals and techniques courses as outlined below. Courses as listed in the four groups must be completed prior to the student teaching experience.

GROUP I INDIVIDUAL AND DUAL SPORTS
- 103 Stunts and Tumbling
- 202 Intermediate Swimming
- 231 Archery
- 233 Tennis
- 234 Track and Field
- 235 Badminton

GROUP II TEAM SPORTS
- 101 Football (Men)
- 201 Soccer (Women)
- 203 Volleyball and Deck Tennis
- 212 Basketball
- 213 Softball

GROUP III RHYTHMS
- 211 Modern Dance
- 221 Folk Rhythms
- 240 Social Dance

GROUP IV COACHING AND OFFICIATING
- 421 Football (Men)
- 422 Basketball
- 423 Track and Field
- 434 Festivals & D. (Women)

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	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	
Electives from Team Sports		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		5
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
Rhythmic Activities—two courses			
Physical Education 221		Folk Rhythms or	
Physical Education 222		Tap Rhythms or 211 or 240	2
Physical Education 223		Modern Dance Composition or	
Physical Education 240		Social Dancing or	
		Team Sports	4

Physical Education	101M	Fundamentals and Techniques—Football (Men)	
	101W	Fundamentals and Techniques—Field Hockey (Women)	
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	
Individual and Dual Sports			2
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	1

Electives

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

Courses numbered in the 100's and 200's include theoretical and practical work and are designed for majors and minors in health and physical education. All majors in health and physical education must select skills courses in the following sequential order: two digit, fundamentals and techniques, coaching and officiating. *The two digit service course in the activity is required before enrolling into each fundamental and technique course, unless one can demonstrate proficiency in the basic elements of the activity.* All HPER majors will be evaluated separately in both two digit and three digit courses. Advancement to the Upper Division of this Department is contingent upon the results of these examinations in each two and three digit course.

101M. *Fundamentals and Techniques in Football.* (1) Required of men majors.

101W. *Fundamentals and Techniques in Field Hockey.* (1) Required of women majors.

103. *Conditioning, Apparatus Work, Stunts and Tumbling.* (2) Required of majors.

201. *Fundamentals and Techniques in Soccer and Speedball.* (1) Required of women 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) Required of majors.

211. *Fundamentals and Techniques in Modern Dance.* (1) Required of majors.

212. *Fundamentals and Techniques in Basketball.* (1) Required of majors.

213. *Fundamentals and Techniques in Softball.* (1) Required of 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 customs and habits of each particular country. Opportunity for participating in mixers, rounds, and square dances with stress on the western type suitable for use on 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.

223. *Modern Dance Composition.* (2) Experimentation in applying the basic laws of movement to contemporary dance and fundamental principles governing the develop-

ment 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) Required of majors.

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) Required of majors.

234. *Fundamentals and Techniques in Track and Field.* (1) Required of majors.

235. *Fundamentals and Techniques in Badminton.* (1) Required of 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 Dance.* (1) Required of majors.

242. *Fundamentals and Techniques in Wrestling.* (1) An elective for men majors.

243. *Play and Games for Elementary Schools.* (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.

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 all majors of health and physical education, required of recreation majors.

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.

334. *Physiology of Exercise.* A course designed to combine several science disciplines as the chronic and the transitory effects of exercise are studied. An elective for HPER majors. Prerequisites: Zoology 202, 203; PE 311, 312.

401. *Seminar in Health, Physical Education and Recreation.* (3)
For description, see "Courses in Health Education".

402. *Organization and Administration of Health and Physical Education.* (3)
For description, see "Courses in Health Education".

403. *Individual Physical Education for Handicapped Students.* (3)
For description, see "Courses in Health Education".

404. *Care and Prevention of Athletic Injuries* (3)
For description, see "Courses in Health Education".

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, required of recreation majors. Prerequisites: P.E. 243, 333, or 253.

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 for health and physical education majors, required of recreation majors.

421. *Athletic Coaching and Officiating in Football.* (2) Examination and explanation of rules, methods of organizing, practice and management of teams, strategy, team offense and defense, and various fundamentals and techniques in football. Required of men majors in health and physical education.

422. *Athletic Coaching and Officiating in Basketball.* (2) Fundamentals of basketball from a coach's and an official's point of view. Required of majors in health and physical education.

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.

PE 423. *Athletic Coaching and Officiating in Track and Field.* (2) A required course 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, scheduling, strategy in competition, diet, conditioning, and the psychology of coaching track and field events are discussed.

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, criteria for classification of students, and marking. Required of majors in health and physical education.

434. *Festivals and Demonstrations.* (3) 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. Required of women majors in HPE and all majors in recreation. An elective for men majoring in HPE.

463. *Dance Seminar.* (3) A concentrated learning experience in contemporary dance for undergraduate and graduate students, teachers of the elementary, junior and senior high school levels, college teachers and recreation employees. The content embraces modern dance technique, rhythmic form and analysis, modern dance history and methodology in dance. The Seminar will meet ten days, three and one-fourth hours daily.

481. *Organization and Administration of Intramural Activities.* (3) Lectures, discussions, and projects dealing with finance, equipment, types of tournaments, schedules, policies, and officiating. Required for Recreation Majors.

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.

The Recreation Curriculum

The curriculum in recreation has as its purpose to give the student theory and practice in the broad field of recreation and to prepare him to meet requirements for recreational employment. This major is designed to develop leaders in recreation with a sound general education and an insight into the social responsibilities of community agencies.

The curriculum is not designed to certify recreation education teachers or coordinators of public school recreation programs employed by school districts. The curriculum is designed to prepare students for a variety of positions as recreation leaders or directors in public and private agencies, including administrative positions in parks, recreation departments, positions as supervisors or community center directors as well as industrial, hospital, church, institution, settlement house and armed services recreation program workers.

The curriculum includes courses in education, psychology, natural and social sciences and courses in sports, aquatics, crafts, drama, music, social recreation, dance and camping. Practical experience is obtained through community as well as camp work experience.

All students in the recreation curriculum must meet the general education requirements of the University. To meet these requirements, students are required to complete approved sequences of courses in the areas of the humanities, mathematics, the natural sciences, and the social sciences. Curriculum requirements total 200 hours.

Curriculum for Bachelor of Science Degree With Major in Recreation

Freshman Year	Quarter Hours Credit		
Name of Course	*I*	*II*	*III*
English 101-2-3	3	3	3
Sociology 211-12-13	3	3	3
Science 121-22-23	4	4	4
Health Education 151	3		
Art 133		3	
Music 301			3
Mathematics 111-12		4	3
HPER 101	3		
	16	17	16

Sophomore Year	Quarter Hours Credit		
Name of Course	*I*	*II*	*III*
English 211-12-13	3	3	3
Psychology 221-22-42	3	3	3
Art 241-301		3	3
Phy. Educ. 103-311-312	2	3	3
Phy. Educ. 211-202-243	2	1	3
Phy. Educ. 222-231	2		1
Philosophy 323	3		
Sociology 221		3	
Phy. Educ. (Required 11-12-13	1	1	1
	16	17	17

Junior Year	Quarter Hours Credit		
Name of Course	*I*	*II*	*III*
Drama 301, 302		3	3
Health 301-302-304	3	3	3
Phy. Educ. 240-212-213	1	1	1
Phy. Educ. 236-239	1	1	
Economics 204	3		
Phy. Educ. 232-33		1	1
Industrial Arts 351		3	
Geography 261		3	
Recreation 353			3
Recreation 253			3
Phy. Educ. 37			1
Electives or Minor	7		
P.E. Required 14-50	1	1	1
	16	16	16

Senior Year	Quarter Hours Credit		
Name of Course	*I*	*II*	*III*
Sociology 462-482 or 451		3	3
Recreation 301-412-414	3	3	3
Education 473	3		
Phy. Educ. 235-237-481	1	1	3
Physical Educ. 434			3
Phy. Educ. 413		3	
HPER 403-450-404	3	3	3
HPER 401	3		
Recreation 473			3
Economics 315		3	
Animal Husbandry 211	3		
	16	16	18

Courses in Recreation

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 for health and physical education majors, required of recreation majors.

301. *Nature Education.* (3) Designed to assist students in their understanding of nature and its many aspects, including astronomy, ecology, birds, camping, cave exploration, flowers, gardening, hiking, hunting, Indian lore, mountains, nature craft, trailing, trees, and zoos. Experience is gained directly by the student in a natural setting.

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 for health and physical education majors, required of recreation majors.

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 for health and physical education majors, required of recreation majors.

473. *Field Experience.* (3) Supervised work experience by students in recreational agencies. The student is selected to be considered as a recreation employee subject to

such requirements and responsibilities as evidenced in gainful employment in this area. Combines theory with practical experience in recreation.

AH211. *Care and Riding of Light Horses.* (3) (See description under Animal Husbandry). Approved elective.

PRE-PHYSICAL THERAPY CURRICULUM

The pre-physical therapy curriculum provides the necessary college preparatory courses leading to entrance into the professional preparation aspects of this discipline.

Generally, preparation for the profession of physical therapy includes the equivalent of two or three years of college study as a prerequisite for professional preparation. In these years, the student gains a broad supportive background in the humanities, the biological and the social science. The one or two years of professional preparation include the basic health sciences, the clinical sciences and supervised administration of evaluative and therapeutic procedures to patients in hospitals and treatment centers.

If a student would acquire the prerequisites and desire to receive his degree in health and physical education, he would have a choice of two types of professional preparation programs after graduation leading to professional qualification in physical therapy: (1) a twelve or sixteen month program leading to a certificate of proficiency in physical therapy or (2) a two-year graduate program leading to a master's degree in this discipline.

THE CURRICULUM

FIRST YEAR	Quarter Hours Credit		
Name of Course	*I*	*II*	*III*
English 101, 102, 103	3	3	3
Mathematics 111, 112	4	3	
Biology 101, 102, 103	4	4	4
Art 133 (Man and Materials)			3
Health Ed. 151 (Personal Hygiene)		3	
Physical Ed. 11, 12, 13	1	1	1
Chemistry 111, 112, 113	4	4	4
HPE 404 (Care and Prev. of Ath. Inj.)			3
	16	18	18

SECOND YEAR	Quarter Hours Credit		
Name of Course	*I*	*II*	*III*
Psychology 221, 222	3	3	
Physics 211 (College Physics)			4
Sociology 211, 212, 213	3	3	3
Zoology 202, 203 (Human Physiology)		5	5
Speech 201, 202	3	3	
Health 302 (First Aid)			3
Chemistry 211-2-3	4	4	4
PE 312 (Kinesiology)	3		
PE 311 (Human Anatomy)	3		
	19	18	19

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 Liberal Arts Core, and three years French or German, and 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.

Bachelor of Science Degree: Same as for Bachelor of Arts Degree, except that only two years (2nd. year level) French or German are required.

Advanced psychology majors shall have the opportunity to practice and acquire experience in using psychological techniques in the psychological services laboratory, and shall be required to complete a project (minor research) under staff supervision and present and defend the same in the senior project seminar. The University Testing Service and the University Counseling Center are open to advanced undergraduate and graduate psychology majors as additional sources of training and experience.

NOTE: *Teacher Education.* General psychology is not a teacher education area, and psychology majors do not qualify for teacher certification. Students interested in study in the area of psychology who desire to qualify for teacher certification are advised to minor in psychology and major in the subject area in which they desire teacher certification.

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
Mathematics 111, 112, 113	4	3	3
French or German	4	4	4
History 121-22-23	3	3	3
Physical Education 11	1		
Psy. Orientation	1	1	1
Music & Art Appr.		3	3
	16	17	17

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
Biol. 111-2-3	5	5	5
Physical Education 12, 13, 20-50	1	1	1
	18	18	18

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Psychology 321, 431, 351	5	5	5
Psychology 311, 341	3	3	
Electives	9	9	12
PE 20-50	1	1	
	18	18	17

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	6	9
	15	15	15

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
Elementary Statistics, 311
*Measurement and Evaluation, 312
Abnormal Psychology, 321-22
Mental Hygience, 323
Social Psychology, 341
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

100. *Corrective Reading.* (0) The purpose of this course is to provide instruction in reading which will aid students to achieve more in accord with their potential. Emphasis will be placed upon the following: Correcting deficiencies in basic word analysis skills,

* Service courses in Core Program for Teacher Education; do not carry credit for majors in psychology.

improving comprehension and critical reading skills, developing a larger and more functional vocabulary, and correcting spelling deficiencies. The course is also designed to provide conditions for positive growth and change in students' own self-concept.

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 study 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.

311. *Elementary Statistics.* (3) Offers training in tabulating and processing scores and other data; covers measures of central tendency, measures of variability, 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. *Abnormal Psychology.* (5) 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.

325. *Basic Reading Remediation I.* (3) Based upon a thorough understanding of the retarded reader's *specific* needs. Common causes of reading disabilities, methods of diagnosing are investigated. Both individual and group testing are covered. Identification of common reading disabilities is stressed.

326. *Basc Reading Remediation II.* (3) Treatment programs are investigated. Basic remediation techniques and procedures recommended for remedial treatment of retarded readers at both the elementary and the secondary school levels. Lectures and laboratory participation. Prerequisite: Psychology 325.

341. *Social Psychology.* (3) Lectures and discussions of social behavior and application of principles of psychology to social behavior.

351. *Developmental Psychology.* (5) Primarily concerned with the evolution of human behavior. The course surveys human growth and development of behavior from fertilization through adult life, with major emphasis on psychological processes.

411. *Research Methodology in Psychology.* (3) This course is designed to introduce the student to methods of research in the behavioral sciences. Specifically the course will offer the student experiences in designing research problems in psychology, with attention focused on experimental design and the scientific approach to problem solving. The student will be expected to design a research project for the senior project (Psych. 450)

seminar course. Course open to phychology majors of senior classification (or who have completed 24 hours of 300 and 400 level courses in psychology) and is prerequisite to Psychology 412-13, Experimental Psychology, and Psychology 450, Senior Project Seminar.

412-13. *Experimental Psychology.* (6) Offers training in applying the scientific procedure of experimentation to the study of psychological phenomena in the various fields of psychology.

431. *Physiological Psychology.* (5) 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.

491. *Reading and Study in Secondary School.* (3) Materials and methods of teaching basic developmental reading skills. Emphasis placed upon vocabulary, comprehension, and study skills in the content filed. Demonstration of tests, devices, and reading guides.

492. *Remedial Reading in High School and College.* (3) Diagnostic procedures and remedial techniques. Causation of reading disabilities; standardized and informal tests; remediation in the following areas: vocabulary comprehension, study skills, rate, spelling. Case studies. Prerequisite: Reading and Study in the Secondary School or permission of instructor.

SCHOOL OF ENGINEERING

WALTER H. DABNEY, Dean

Faculty:

Department of Architectural Engineering
Robert S. Armstead, Ronald Harris, Leon Q. Jackson, and Walter Vincent.

Department of Civil Engineering
Mohammed Baluch, Will J. Carter, Walter Dabney, Jack Figilis, Macon G. Hinton, Ronald A. Jones, and Louis Mishu.

Department of Electrical Engineering
Richard D. Bourne, Guy W. Carlisle, Walter Criley, M. J. Malkani, and Robert G. Reed.

Department of Mechanical Engineering
Yvonne Y. Clark, Decatur B. Rogers, and Charles W. Sutherland.

Department of Industrial Education
Thomas J. Brooks, Leon C. Farbes, William V. Harper, Hayes Howard, Harry E. Lash, Gilbert K. Pleasant, Andrew Ryal, Cecil Ryan, Preston E. Stewart, E. L. Witherspoon, and Samuel L. Word.

SCHOOL OF ENGINEERING

WALTER H. DABNEY, B.S., M.S., 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.
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.

Engineering is the profession in which a knowledge of the mathematical and natural sciences gained by study, experience and practice is applied with judgment to develop ways to utilize economically, the materials and forces of nature for the benefit of man. The professional engineer's work is mostly mental in character. He studies and reasons and visualizes how new bits of scientific knowledge may be put to practical use. The vast majority of engineers do not need or require a manual dexterity with tools. Engineering students are trained rigorously and thoroughly, on a broad basis, in a coherently related sequence of subjects in physical science and mathematics, in social-humanistic subjects; and in their chosen professional or vocational discipline.

The School of Engineering prepares its students, to become successful practicing engineers, or to pursue higher academic degrees and become research engineers or teachers. The successful engineer must have mental ability and alertness of a high order; must develop sound judgment; must be willing to try; must recognize failures; and must keep on trying until he arrives at a satisfactory solution of the problem at hand. The facilities of the School of Arts and Sciences, and the School of Education are also available to the students in the School of Engineering. The useful knowledge and mental discipline gained in these other schools also constitutes excellent preparation for other careers, and a life of useful service and leadership.

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 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; within 150 miles of the Arnold Air Development Research Center at Tullahoma, Tennessee; and the Marshall Space Center at Huntsville, Alabama; 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.

The School of Engineering has a physical plant 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 offices.
2. Industrial Arts Building—In this building are located the machine, welding, sheet metal, refrigeration, household appliance vocational technical training shops.
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. Berry Field Airport-Equipment consists of testing and flight training facilities including aircraft, link traner, jet and reciprocating engines.

REVISION OF ENGINEERING CURRICULA

The engineering curriculums, except architectural engineering, were revised effective 1 September 1968 to reduce the number of quarter hours required for graduation. A student enrolled in one of these engineering curriculums before 1 September 1968, may

change to the new curriculum upon the advice and consent of his major advisor by making appropriate substitution of courses of similar content for which the prerequisites have been completed with a passing grade, after:

1. Students entering in Fall of 1967 have completed all Freshman courses listed in the 1967 Bulletin.

2. Students entering in Fall of 1966 have completed all Freshman and Sophomore courses listed in the 1966 Bulletin.

3. Students entering in Fall of 1965 have completed all Freshman, Sophomore and Junior courses listed in the Bulletin.

Students entering in the Fall of 1968 or thereafter are required to enter upon the new curriculum outlined below.

ENGINEERING CORE

The following subjects are required in all engineering fields of specialization:

Mathematics and Physical Science		46	22%
Analytic Geometry and Calculus	20		
Differential Equations I & II	6		
General Chemistry	8		
General Physics	12		
Communications		24	12%
English Composition	9		
Speech	3		
Technical Report Writing	3		
Engineering Problems	3		
Engineering (Architect.) Graphics	6		
Engineering Science		30	15%
Digital Computer Science	2		
Mechanics - Statics	5		
Strength of Materials	5		
Materials Testing	3		
Thermodynamics	3		
Fluid Mechanics	3		
Electrical Circuit Theory	6		
Engineering Economics	3		
Humanities and Social Studies		21	10%
American History or Growth of Civilization	9		
Literature	3		
Economic Principles	3		
Electives	6		
General Education or University Requirements		9	5%
AFROTC—(Air Science) or Physical Education	6		
Business Law	3		
TOTAL		130	64%

The program of study in the first year precedes, and is also common to, all fields of specialization. A freshman program of study is shown below.

First Year Engineering

(Common to all engineering programs except Arch. Engr.)

Freshman	*I*	*II*	*III*
Analytic Geom. Calculus I and II—Math 163, 261-62	5	5	5
General Chemistry—Chem. 111-12	4	4	
English Composition—Eng. 101-02-03	3	3	3
Engr's. Problems—Engr. 101	3		
Engr's. Graphics—Engr. 102-03		3	3
General Physics—Physics 221			4
Physical Education or AFROTC 151-52-53	1	1	1
Credit Hours Per Quarter	16	16	16

Total Credit Hours—48

DEPARTMENT OF ARCHITECTURAL ENGINEERING

ROBERT S. ARMSTEAD, B.S., P.E., *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 228.

CURRICULUM IN ARCHITECTURAL ENGINEERING

Note: A revised curriculum in Architectural Engineering is under study and will be published when completed.

Freshman Year	*Quarter Hours Credit* I	II	III
Math 161-62-63	5	5	5
English 101-02-03	3	3	3
Chemistry 111-112-113	4	4	4
Engineering 102, 203		3	3
Engineering 101	3		
Engineering 100	0		
History 121-122-123	3	3	3
Air Science I or Phy. Ed. 11-12-13	1	1	1
	19	19	19

Sophomore Year	*Quarter Hours Credit* I	II	III
Math. 261-62-63	5	5	5
Civil Engr. 203, 301		3	3
Physics 221-22-23	4	4	4
Engr. 201	5		
Arch. Engr. 201-2-3	4	3	3
Arch. Engr. 213		3	
Civil Engr. 213			3
Air Science II or Phy. Ed. 20's to 50's	1	1	1
	19	19	19

Junior Year	*Quarter Hours Credit* 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. 301-2-3	3	3	3
Civil Engr. 343			3
English 211-212		3	3
Mech. Engr. 322	3		
Civil Engr. 402		3	
Electives	3		3
Speech 202	3		
	17	20	20

Senior Year	*Quarter Hours Credit* I	II	III
Arch. Engr. 401-2-3	4	4	5
Arch. Engr. 411	2		
Arch. Engr. 422		2	
Arch. Engr. 433			1
Arch. Engr. 443			4
Arch. Engr. 450			3
Arch. Engr. 452		4	
Arch. Engr. 463			4
Civil Engr. 322	4		
Civil Engr. 443		3	
Civil Engr. 441-42	4	4	
Elect. Engr. 301-2	3	3	
Engr. 401	3		
	20	20	17

DEPARTMENT OF CIVIL ENGINEERING

WILL J. CARTER, B.S., M.S., Ph.D., *Head*

Civil Engineering, once defined as including all branches of engineering other than military engineering, is now limited to the professional aspects of construction. Civil Engineering includes the location, design, construction, and maintenance of larger scale

facilities such as railroads, highways, dams, airports, bridges, buildings, concrete and foundation designs, canal and river systems; and piers, docks, and harbors. Other Civil Engineers make maps and charts; plan, design, and construct city streets, water supply and distribution systems, sewage disposal plants, and urban traffic control systems. Education in this field is founded on scientific fundamentals with extensive training and practice in one or more fields of professional specialization including structural, hydraulic, soil mechanics, transportation, and sanitary engineering.

REQUIREMENTS IN CIVIL ENGINEERING

Core Requirements for all Engineering Students	130 Credit Hrs.
Departmental Requirements:	72 Credit Hrs.
World Literature	3
Computer Science	3
Dynamics	5

Civil Engineering Core

CE 213 Plane Surveying	3
CE 301 Strength of Materials	3
CE 302-03 Theory of Structures	6
CE 312-13 Fluid Mechanics	6
CE 331 Engineering Geology	3
CE 322 Highways	3
CE 332 Soil Mechanics	3
CE 343 Concrete I	3
CE 402 Contracts and Specifications	3
CE 422 Waterworks and Sewerage	3
CE 441-42 Design of Structures	8
CE 443 Foundations	4
CE 450 Senior Project	3
Technical Electives	10
Total	202 Credit Hrs.

CURRICULUM IN CIVIL ENGINEERING

The following program is recommended to assure an even application of effort by students in Civil Engineering:

FRESHMAN—All engineering students pursue the same freshman schedule.

SOPHOMORE	I	II	III
Calculus III, Diff Equations I, II, Math 263, 462-63	5	3	3
General Physics—Physics 222-23	4	4	
Mechanics, Engr. 201-02	5		5
World Literature English 211-12	3	3	
Computer Science, CS 220		2	
Strength of Materials CE 203, 301		5	3
Plane Surveying, CE 213			3
Economic Principles, Econ 211			3
Physical Education or AFROTC 251-52-53	1	1	1
Credit Hours Per Quarter	18	18	18

JUNIOR	I	II	III
Speech	3		
Engr'g. Geology, CE 331	3		
Fluid Mechanics, CE 311-12-13	3	3	3
Electrical Circuit Theory, EE 301-02	3	3	
Growth of Civilization, Hist. 121-22-23	3	3	3
Business Law, BA 323	3		
Theory of Structures, CE 302-03		3	3
Foundations, CE 443			4
Soil Mechanics, CE 332		3	
Materials Testing, CE 333		3	
Concrete I, CE 343			3
Credit Hours Per Quarter	18	18	16

SENIOR	I	II	III
Thermodynamics, ME 301	3		
Waterworks and Sewage, CE 421	3		
Design of Structures, CE 441-42	4	4	
Contracts and Specifications, CE 402		3	
Computer Science, Engr. 330		3	
Highways, CE 322			3
Engineering Economics, Engr. 463			3
Senior Project, CE 450			3
Technical Electives	3	3	4
Gen. Educ. Electives		3	3
Technical Report Writing, English 324	3		
Credit Hours Per Quarter	16	16	16

DEPARTMENT OF ELECTRICAL ENGINEERING

M. J. MALKANI, M.S., *Head*

The Electrical Engineer designs equipment and devices for the production of electrical power by converting mechanical, chemical and thermal energy into electric power at dams, at steam power plants, at nuclear power plants, and from chemical and solar devices. He is concerned with the construction and maintenance of power and lighting systems; electrical machinery; electrical and magnetic controls for aircraft, automobiles, missiles, satellites, computers, and sensing devices. The Electrical Engineer designs telephone and telegraph equipment, radio and television circuits, and electrical household appliances. He designs X-ray equipment, radiation equipment related to artificial fevers, infra-red and invisible light devices, and instruments useful in radio astronomy.

Specialization in various areas of Electrical Engineering is provided through a choice of technical electives. These technical electives are based on a common core of Electrical Engineering fundamentals.

REQUIREMENTS IN ELECTRICAL ENGINEERING

Core Requirements for all Engineering Students		130 Credit Hours
Departmental Requirements:		72 Credit Hours
Mechanics (Dynamics)	5	
General Education Courses	3	
Electrical Engineering Core		
EE 211-12-13 Electrical Circuit Theory	3	
EE 321-22-23 Electrical Field Theory	9	
EE 331-32-33 Electronics	9	
EE 341-42-43 Energy Conversion	9	
EE 411-412 Control Systems	6	
EE 421-22 Networks and Systems	6	
EE 450 Senior Project	3	
EE 451-52 Communication Engineering	6	
EE 473 Solid State	3	
Technical Electives	10	
Total		202 Credit Hours

CURRICULUM IN ELECTRICAL ENGINEERING

The following program is recommended to assure an even application of effort by students in Eletcrical Engineering:

FRESHMAN—All engineering students pursue the same freshman schedule.

SOPHOMORE	I	II	III
General Physics—Phvsics 222-23	4	4	
Mechanics—Engr. 201-02	5		5
Calculus III, Diff. Equations I, II, Math 263, 462-63	5	3	3
Circuits I, II, III (Electrical—EE 211-12-13)	3	3	3
Computer Science, CS 220		2	
Strength of Materials, CE 203		5	
Speech 202			3
Gen. Educa. Elective			3
Physical Education or AFROTC 251-52-53	1	1	1
Credit Hours Per Quarter	18	18	18

JUNIOR	I	II	III
Networks I & II, EE 421-22	3	3	
Electronics, I, II, III, EE 331-32-33	3	3	3
Energy Conversion I, II, III, EE 341-42-43	3	3	3
Fluid Mechanics—CE 311	3		
Business Law BA 323	3		
Growth of Civilization Hist. 121-22-23	3	3	3
Economic Principles—Econ 211		3	
World Literature—English 211			3
Technical Report Writing, English 324			3
Materials Testing, CE 333			3
Credit Hours Per Quarter	18	15	18

SENIOR	I	II	III
Communications Engr's. EE 451-52	3	3	
Control Systems I, II, EE 411-12	3	3	
Electrical Field Theory I, II, III, EE 321-22-23	3	3	3
Thermodynamics, ME 301	3		
Engr'g. Econ. Engr. 463			3
Solid State, EE 473			3
Senior Project, EE 450	3		
Technical Electives	3	4	3
Gen. Educ. Electives		3	3
Credit Hours Per Quarter	18	16	15

DEPARTMENT OF MECHANICAL ENGINEERING

YVONNE Y. CLARK, B.S., P.E., *Head*

The Mechanical Engineer is concerned with the design and manufacture of machines, tools, and devices, used in the transmission and transformation of mechanical energy. The three major fields of Mechanical Engineering are: (1) Heat Power, (2) Machine Design, and (3)Management of manufacturing processes. He designs machines that function smoothly and safely such as: internal combustion engines for automobiles and aircraft; steam engines; pumps; refrigerating, ventilating and airconditioning equipment; pulleys, cranks, levers and gears, including their lubrication, vibration characteristics, critical speeds and sufficiency in size. In the manufacturing processes he determines the proper working space for men and machines, the sequence and efficiency of operations, the disposition of wastes, and the utilization of by-products.

The mechanical engineering core and departmental requirements serve as a strong base for any of the above interests. The technical elective subjects which complete the curriculum may be selected in such manner that a particular area of interest is enhanced.

REQUIREMENTS IN MECHANICAL ENGINEERING

Core *requirements for all Engineering Students*		130 Credit Hrs
Departmental Requirements:		72 Credit Hrs.
World Literature	3	
Descriptive Geometry	3	
Computer Science	3	
Dynamics	5	
Electrical Circuit Theory	3	
Mechanical Engineering Core		
ME 211-12 Manufacturing Process	6	
ME 302-03 Thermodynamics	6	
ME 313 Kinematics	3	
ME 323 Heat Transfer	3	
ME 322 Phy Metallurgy	3	
ME 402 Mech. Engr. Measurements	3	
ME 411-12 Machine Elements and Design	6	
ME 422 Environmental Control	3	
ME 442 Automatic Controls	3	
ME 451-52 Energy Conversion	6	
ME 450 Senior Project	3	
Technical Electives	10	
Total		202 Credit Hrs.

CURRICULUM IN MECHANICAL ENGINEERING

The following program is recommended to assure an even application of effort by students in Mechanical Engineering.

FRESHMAN—All engineering students pursue the same freshman schedule.

SOPHOMORE	I	II	III
Calculus III, Diff. Equations I, II, Math 263, 462-63	5	3	3
Physics, General Physics 222-223	4	4	
Mechanics, Engr. 201-02	5		5
Mf'g. Process, ME 211-12		3	3
Computer Science, CS 220		2	
Strength of Materials, CE 203		5	
Descriptive Geometry, Engr. 203			3
Speech 202	3		
Physical Education or AFROTC 251-52-53	1	1	1
Credit Hours Per Quarter	18	18	15

JUNIOR	I	II	III
Thermodynamics I, II, III, ME 301-02-03	3	3	3
Electrical Circuit Theory, EE 301-02-03	3	3	3
World Literature, Eng. 211-12	3	3	
Growth of Civilization Hist. 121-22-23	3	3	3
Business Law, BA 323	3		
Fluid Mechanics, CE 311	3		
Economic Principles, Econ. 211		3	
Kinematics, ME 313			3
Heat Transfer, ME 323			3
Mat. Testing, CE 333			3
Credit Hours Per Quarter	18	15	18

SENIOR	I	II	III
Computer Science, Engr. 330			3
Machine Elements & Design, ME 411-12	3	3	
Phy. Metallurgy, ME 322, 401	3	3	
Energy Conversion, ME 451-52	3	3	
Mech. Engr. Measurements, ME 402		3	
Environmental Control, ME 422		3	
Automatic Control, ME 442			3
Engineering Economics, Engr. 463			3
Senior Project, ME 450			3
Technical Electives	4	3	3
Gen. Educ. Electives			3
Technical Report Writing, English 324	3		
Credit Hours Per Quarter	16	18	18

COURSE DESCRIPTIONS—SCHOOL OF ENGINEERING

Numerals in parentheses describe time requirements, thus:

(1-4-3)—1 hour of theory per week; 4 hours laboratory per week; course yields 3 qtr. hours credit

101. *Engineering Problems.* (3-0-3) An introduction to the engineering profession including: nature of engineering; the use of the slide rule; techniques in the analysis solution and presentation of engineering problems; lectures by engineers from industry; and inspection trips to local engineering projects. A minor engineering design project is required.

Offered by the Department of Architectural Engineering.

102. *Engineering Graphics.* (1-6-3) Standard engineering lettering, line and figure drawing with instruments, the correct representation of objects, models, and machine parts in orthographic, isometric, and oblique projections, as well as practice in dimensioning and the reading of drawings. Six laboratory hours per week.

103. *Engineering Graphics.* (1-6-3) 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 102 or equivalent. Six laboratory periods.

Offered by the Department of Mechanical Engineering.

104. *Nomography.* (1-0-1) Design, construction and use of Nomographs or alignment charts in the solution of engineering problems, rectification of curves from laboratory data; use of log and semi-log graphs: derivation of empirical equations. One lecture per week. Prerequisite: Math 163, Engr. 102.

Offered by the Department of Civil Engineering.

201. *Mechanics-Statics* (5-0-5) The application of the principles of mechanics to static engineering problems including: resultants; equilibrium; friction; free body diagrams; trusses; centroids and center of gravity; moment of inertia; and forces in beams and cables. Vector analysis is introduced and used. Prerequisite: Math 262, and Physics 211.

202. *Mechanics-Dynamics.* (5-0-5) The application of the principles of mechanics to engineering problems of motion and acceleration including: rectilinear, curvilinear and rotary motion; work and energy; impulses and momentum; and introduction to vibrations. Prerequisite: Math 263, and Engr. 201.

Offered by the Department of Architectural Engineering.

203. *Descriptive Geometry.* (1-6-3) An elementary study of the geometry of the point, line and plane, with theoretical and practical problems. Curved surfaces, their tangent lines and planes; the intersection of surfaces, developments, shades and shadows, perspective. Prerequisite: Engineering 103. Six laboratory periods.

Offered by the Department of Mechanical Engineering.

330. *Analog Computer.* (2-2-3) Basic principles and techniques employed in the simulation and model analysis of physical systems and controls. Analysis of dynamic systems described by ordinary differential equations. Problem preparation and scaling; operational amplifiers, multipliers and function generators. Prerequisite: Math 462.

Offered by the Department of Civil Engineering.

400-401. *Special Topics in Engineering.* (1-0-1) to (6-0-6). Special subjects presented in the School of Engineering to cover current problems or unique advances in the state of the art. Prerequisite: Senior standing or consent of the instructor. Three hours per week including biweekly laboratory.

Offered by the Department of Mechanical Engineering

451. *Analog Computer Technique.* (3) Methods and techniques simultaneous linear and non-linear differential equations on electronic analog computers; principles of multiplication, division and simulation of non-linear devices and systems. Prerequisite: EE 310 and Math 462.

Offered by the Department of Civil Engineering.

463. *Engineering Economics.* (3-0-3) Economic factors involved in the acquisition and retirement of capital goods in engineering practice including: interest and capitalization methods of depreciation; amortization, sinking funds; cost and rate determination, linear programming and critical path techniques. Prerequisite: CS 220.

COOPERATIVE PLAN

The following core courses are offered in all degree programs by the Faculty of the individual departments. Students in the Cooperative Plan require 5 years to graduate.

210. *Cooperative Plan.* (15) Work experience under the guidance and supervision of practicing engineers in government or industry. Open to cooperative plan students only. Emphasis on professional and personal development including reliability, efficiency and teamwork. Written report required of student. Passing grade awarded upon evidence of satisfactory job performance. Prerequisites: Completion of 30 credit hours of college work including English 102 with Grade Point Average of 2.5 or better, and pre-registration as full time student.

220. *Cooperative Plan.* (15) Continuation of Cooperative Plan 210.

230. *Cooperative Plan.* (15) Continuation of Cooperative Plan 220.

310. *Cooperative Plan.* (15) Work experience. Open to cooperative plan students only. Continuation of Cooperative Plan 230. Written report required of student. Passing grade awarded upon evidence of satisfactory job performance. Prerequisites: Completion of 100 credit hours of college work with Grade Point Average of 2.5 or better, and pre-registration as a full time student.

320. *Cooperative Plan.* (15) Continuation of Cooperation Plan 310.

330. *Cooperative Plan.* (15) Continuation of Cooperative Plan 320.

410. *Cooperative Plan.* (15) Work experience. Open to cooperative plan students only. Continuation of Cooperative Plan 330. Written report required of student. Passing

grade awarded upon evidence of satisfactory job performance. Prerequisites: Completion of 150 credit hours of college work with Grade Point Average of 2.5 or better, and pre-registration as a full time student.

420. *Cooperative Plan.* (15) Continuation of Cooperative Plan 410.

430. *Cooperative Plan.* (15) Continuation of Cooperative Plan 420.

ARCHITECTURAL ENGINEERING

201. *Architectural Design II Small Structures.* (4) Introduction to architectural design; expressions of principles, in structural and aesthetic relationship. Prerequisite: Engr. 101. 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, representing 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.* (1) 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.

450. *Senior Project.* (3)

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.

CIVIL ENGINEERING

Numerals in parentheses describe time requirements, thus:
(1-4-3)—1 hour of theory per week; 4 hours laboratory per week; course yields 3 qtr. hours credit.

203. *Strength and Materials I.* (5-0-5) The application of the principles of mechanics to engineering problems of strength and stiffness of materials including: internal force; axial stress and strain, including thermal effect; thin walled pressure vessels; torsion, beams, shear and moment diagram; riveted and welded connections. Prerequisite: Engr. 201.

213. *Plane Surveying.* (1-4-3) An elementary course in surveying and care and use of instruments. Emphasis will be placed on the following proficiencies: Use of surveying, instruments in construction surveying, including: alignment, grades and lay-out of buildings; field note procedure, leveling and measuring angles; measurement of distance by tape and stadia, design, calculation and layout of circular, spiral and vertical curves; introduction to optical tooling. Prerequisite: Math 163.

301. *Strength and Materials II.* (3-03) Continuation of Strength of Materials I, including determinate and indeterminate beam delections nad reactions by integration; moment-area; energy methods, and theory of three moments. Columns; combined stresses; reinforced beams, curved beams and unsymetrical loadings. Prerequisite: CE 203.

302. *Theory of Structures I.* (3-0-3) General review of engineering statics; stress analysis, statically determinate structures under service loads; classification of structures based on stability and determinancy; bending, shear, and axial stresses in beams and their graphical representation; stress analysis of trusses; graphic statics; influence lines of determinate structures; three-hinged arches and Gerber beams; cables and miscellaneous types of determinate structures; qualitative analysis of strain in determinate structures: Prerequisites: CE 301.

303, 304. *Theory of Structures II.* (3), III (3) (3-0-3) Stress analysis in indeterminate structures; comparison of methods of stress analysis of determinate and indeterminate structures; concepts of elastic energy and virtual work due to moment, shear, axial stress, torsion and thermal effect; moment-area and elastic-load methods, and Castigliano's theorems; Betti-Maxwell law; analysis of the continuous beam and Clapeyron's generalized equation; influence lines and effect of variable moment of inertia; slop-deflection method and elements of moment distribution, Matrix analysis; relaxation, infinite series. Use of digital computer. Prerequisite: CE 302.

305. *Advanced Engineering Mechanics.* (3-0-3) The basic analytical equations involved in the mechanics of strutcures, including: elasticity and plasticity; buckling, stability and instability. Use is made of variational techniques and energy and matrix methods. Prerequisite: CE 301.

311-12-13. *Fluid Mechanics.* (2-2-3) Static, dynamic and thermodynamic properties of real and ideal fluids; laminar, turbulent, compressible and uncompressible flow; Euler, Bernoli and continuity equations; flow in channels, conduits and about immersed objects; measurement of properties of common fluids and tests on fluids in motion. Three lectures per week in CE 311-12. Two lectures and one lab per week in CE 313. Prerequisite: ENGR 201; Math 262.

322. *Highways.* (3-0-3) A study of the modern field and office practices in the location and design of highways including economics, right of way acquisition, earthwork, geometric design, drainage structures, construction and maintenance problems. Written reports of field inspections of at least two local projects. Prerequisite: CE 213, CE 332.

331. *Engineering Geology.* (2-2-3) A study of earth materials, surface features, minerals and rocks, surface and internal structures and their relationship to engineering

works. Analysis of the agents of weathering erosion, disastrophism and their effects on engineering construction. Study of aerial photographs, topographic and geological maps.

332. *Soil Mechanics.* (2-2-3) Principles of soil mechanics involving consolidation theory, shear, bearing capacity, pressure distributing compaction and seepage problems. Laboratory tests to determine Atterberg Limits, unconfined compressions, grain size analysis, maximum density, direct shear permeability tests, triaxial tests. Lectures and problems on piers and foundations, earthdams, earth slides, highway fills and subgrades, retaining walls, piles, frost heaving and ground water. Three hours per week including biweekly laboratory of three hours.

333. *Materials Testing.* (1-4-3) Behavior of engineering materials under load in the elastic and plastic range, including: use of testing machines: use of mechanical, optical and electrical strain measuring instruments; tension, compression, torsion, bending and hardness tests; study of ASTM and AAHO specifications; one lecture and two labs per week. Prerequisite: CE 301.

343. *Design of Concrete I.* (3-0-3) Design of reinforced concrete beams and columns; use of standard specifications; concrete joist construction. Prerequisite: CE 303 Three lectures per week.

402. *Contracts and Specifications.* (3-0-3) The legal principles underlying engineering work: business organization; proposals, construction contracts and bidding procedures; insurance and surety bonds, wages, mechanics liens, workmen's compensation, state and national laws and regulation; and specification writing. Prerequisite: Business Law 323.

411. *Advanced Surveying.* (2-2-3) Theory of Errors; office computations and application of the theory of least squares to the adjustment of triangulation, traverse and level nets. Map projections and the state plane coordinate system. Field astronomy and introduction to photogrammetry. Three lectures and one biweekly laboratory of two hours. Prerequisite: CE 213.

412. *Traffic Control.* (3-0-3) Study of traffic congestion, road and street capacity, regulation of moving traffic, parking regulations, pedestrian control, traffic signs and signals, traffic counts, traffic laws and regulations, traffic accidents, and street modifications. Prerequisite: CE 322.

413. *Transportation.* (3-0-3) A study of the engineering and economic problems common to the design, construction, and maintenance of highways, airports, railroads, water transport facilities, pipelines, and conveyor systems; including their impact upon city and regional planning. Prerequisite: CE 322 and Engr. 463.

414. *Highway Materials.* (2-2-3) Properties of concrete and bituminous materials including their compatibility with various aggregates. Design of asphalt cement surface courses, soil-cement surfaces. Standard tests are performed with emphasis on interpretation of test results. Two lectures and two laboratory hours per week. Prerequisite: ME 333.

421. *Water Supply.* (3-0-3) Planning of water supply systems; population estimation, industrial and municipal water demand, hydrologic consideration of surface and ground water sources, design of distribution systems and impoundment works, water quality criteria, unit operations, and processes of water treatment.

422. *Sewerage and Sewage Treatment.* (3-0-3) Hydraulics of sewage works and appurtenances, functional design of storm and sanitary sewer systems, chemical and biological characteristics of sewage, unit operations, processes of sewage treatment, stream pollution. Prerequisite: CE 313.

423. *Environmental Pollution and Controls.* (3-0-3) A study of the characteristics of air and water contaminants from industrial and domestic sources; their effect and methods of control; air pollution surveys, and organization of control programs. Prerequisite: CE 421.

432. *Hydrology.* (3-0-3) Principles, methods of analysis, and applications for engineering planning and design. Major topics include the various phases of the hydrologic cycle, data collection and interpretation, water resources system, determination of flow capacity for hydraulic structures, use of electronic computers, and statistical analyses. Prerequisite: CE 421.

441. *Design of Steel and Timber.* (2-4-4) The analysis and design of structural elements and connections for buildings, bridges and specialized structures, including: roof and bridge trusses, plate girders and built-up columns and main compression members. Prerequisite: CE 303.

442. *Design of Concrete II.* (2-4-4) Design of flat slab structures, retaining walls, footings and bridges by the elastic and ultimate strength methods, including an introduction to prestressed concrete. Prerequisite: CE 343.

443. *Foundations.* (3-2-4) Design of dry and sub-aqueous foundations, such as piers, footings, abutments; principles and practices in piling and underpining including bearing capacity and settlement analysis, character of natural soil deposits and earth pressure theories and application of soil mechanics to designing of foundations. Prerequisite: CE: 332.

450. *Senior Project.* (0-6-3) 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 compliation of a subject within the field of the student's interest.

451. *Plate and Shell Structures.* (3-0-3) Membrane stresses in tank and roof shells; applications of plate theory; discontinuity stresses in dome and tanks; barrel shell roofs. Three lectures. Prerequisite: CE 305.

452. *Design of Steel II.* (2-2-3) Plastic Design of steel, including: structural properties of ductile and strain hardening materials, moment rotation characteristics of structural members, equilibrium methods of analysis, upper and lower bound theorems, mechanism methods, modification of the simple flexural theory, and the rules of design. Prerequisite: CE 303, CE 305, two lectures and two laboratory hours per week.

453. *Design Prestressed Concrete.* (2-4-4) Behavior of steel and concrete under sustained load. Analysis and design of pre-tensioned and post-tensioned reinforced concrete members and the combining of such members into an integral structure. Prerequisite: CE 442.

ELECTRICAL ENGINEERING

Numerals in parentheses describe time requirements, thus:
(1-4-3)—1 hour of theory per week; 4 hours laboratory per week; course yields 3 qtr. hours credit.

103. *Electrical Engineering Measurements.* (2-4-4) Signal measuring and generating devices; accuracy and error consideration in laboratory measurements; terminal characteristics of components from measurements; use of analog computers.

211. *Circuits I.* (Fundamentals). (2-2-3) Direct current and alternating current circuits. Kirchoff's laws, loop and node equations, network theorems. Alternating-current wave forms, effective and average power. Single phase circuits, resonance, complex operator, polyphase circuits, ideal transformers. Prerequisite: preceded or accompanied by Math 261.

212. *Circuits II.* (Analysis) (2-2-3) Analysis of resistive, inductive, and capacitive circuits, direct current, transient and sinusiodal steady-state coupled circuits and transformer. Polyphase circuits. Three lectures and one biweekly laboratory of two hours. Prerequisite: EE 211.

213. *Circuits III.* (3-0-3) Non-sinusoidal periodic waves circuit analysis using trigonometric as well as exponential forms of fourier series. Extension to the case of non-periodic waves. Frequency spectra, transient analysis of networks using laplace transforms. Transform networks and pole-zero techniques. Prerequisite: EE 212.

301. *Electrical Circuit Theory.* (Not for EE Majors) (3-0-3) AC and DC current circuits. Current, voltage and power relations, complex algebra, network theorems, voltage and power relations in poly phase circuits. Three lectures per week. Prerequisite. Calculus III, Physics 213 (Elect and Mag).

302. *Electronics Theory.* (Not for EE Majors) (2-2-3) Electron emmission, semi conductor materials, vacuum tubes, thyratrons, transistors; amplifiers, circuit-analysis, rectifiers, filters and power supplies; feedback amplifiers and oscillators, demonstrations on laboratory equipment. Prerequisite: EE 301.

303. *Electrical Machine Theory.* (Not for EE Majors) (2-2-3) The Principles of AC and DC generators and motors, motor speed control, losses and efficiency; power transformers, demonstrations on laboratory equipment. Prerequisite: EE 301.

321. *Field Theory I.* (Fundamentals) (3-0-3) Introduction to electromagnetic fields; vector analysis; gradient, divergence and curl, Poisson and Laplace equations. Maxwell's equations in differential and integral; Povnting's vector and energy relations; electrostatics and magnetostatics. Prerequisite: Math. 463.

322. *Field Theory II.* (Analysis) (3-0-3) Polarization and magnetization vectors; uniqueness theorems for static fields; calculations of parameters of circuit theory and transmission lines for special geometrics; plane waves in dielectric and conducting media; normal incidence on a plane interface.

323. *Field Theory III.* (2-2-3) A continuation of plane waves; elliptical polarization; oblique incidence on a plane interface; the rectangular waveguide; the linear antenna; motion of charged particles in static fields; propagation in an isotropic media. Three hours including biweekly laboratory of three hours.

331. *Electronics I.* (Fundamentals) (2-2-3) Current conduction in seminconductors and high vacuum; theory of p-n junctions, characteristics of diodes; rectifiers and diode switches. Three hours including biweekly laboratory of three hours.

332. *Electronics II.* (Amplifiers) (2-2-3) Characteristic and equivalent circuits of vacuum tubes and transistors. Models and analysis techniques with major emphasis on transistors. Application to amplification. Three hours including biweekly laboratory of three hours.

333. *Electronics III.* (2-2-3) (Devices and Circuits) Transistor feedback amplifiers and oscillators, biasing and thermal stabilization, field effect transistors, photo transistors and special transistor devices. Three hours including biweekly laboratory of three hours.

341. *Energy Conversion I.* (Fundamentals) (2-2-3) Basic principles of electromagnetic energy conversion and the theory of generalized singly and multi-excited magnetic systems. The Introduction to mathematical transformer theory and the realistic approach to single and three phase transformers will be covered. Three hours per week including biweekly laboratory of three hours Prerequisite: E.E. 313.

342. *Energy Conversion II.* (2-2-3) Basic Rotating machines theory and particular application to DC machines, covering ideal conditions and steady-state analysis including metadynes and feedback systems using DC machines. Prerequisite: E.E. 341.

343. *Energy Conversion III.* (2-2-3) Theory of ideal synchronous and induction machines under steady state conditions. Some study of the machines will be made under transient conditions. Testing and application of the realistic synchronous and induction machine with the determination of constants. The equivalent circuits of fractional H.P. A-C motors will be covered. Prerequisite: E.E. 342.

401. *Power Systems.* (3-0-3) Symmetrical components solutions of power systems, sequence impedance of power apparatus; stability analysis, steady state transient, methods of solution; system protection.

411. *Control System I.* (2-2-3) Theory and operation of automatic controls system, components of control system. Introduction to the analysis and design of linear feedback control systems by means of root locus and frequency response methods. Discussion of stability, transient errors and steady state errors. Three hours per week including biweekly laboratory of three hours. Prerequisite:

412. *Electrical Control Systems II.* (3-0-3) Compensation networks, introduction to compensation. Introduction to nonlinear systems, phase plane and describing function. Prerequisite: EE 411.

413. *Controls III.* (Industrial). (2-2-3) Control devices such as thyratrons, ignitrons, silicon control rectifiers, relays, amplidynes, magnetic amplifiers, synochros, servo-motors, gear trains, accelerometers, gyroscopes, and hydraulic and pneumatic components. Three hours per week including biweekly laboratory of three hours.

421. *Network I.* (2-2-3) Two-port networks, general method of determining network equivalence. Driving point impedance and admittance, filters: low-pass, band-pass, high-pass, image filters, Butterworth and Chebyshev filters. Cauer type networks. Three lectures per week including biweekly laboratory of three hours.

422. *Network II.* (3-0-3) Application of matrix-algebra to two-terminal pair networks, circuits theory of lossless transmission lines, transmission lines with losses, high frequency transmission line. Transients in network and lines. Introduction to delay lines.

443. *Energy Conversion IV.* (Direct) (3-0-3) Analysis of the direct conversion of energy sources to electricity. Energy converters: solar, thermoelectric, photoelectric, fuel cells, nuclear and magnetohydrodynamic generators are considered as components and control of the components, and energy storage problems are considered in the overall system study. Prerequisite: E.E. 311 and M.E. 301.

450. *Senior Project.* (0-6-3) An experimental project on a special topic in Electrical Engineering, coupled with a technical report and a seminar on it. This may be taken in any quarter in the senior year. Prerequisite: Senior Standing.

451-52. *Ultra-High Frequency.* (Fundamentals) (6), (2-2-3) Waveguides; electron velocity modulation; electron-bunching, current and efficiency of klystron oscillators;

magetron oscillators; travelingwave tubes; UHF detectors; high frequencies of transmission lines, waveguides, reflection of waves, power measurement, and microwave components. Three lecture hours and biweekly laboratory of three hours.

455. *Antennas.* (3-0-3) The Hertizian dipole, antennas, impedance, loop antennas, receiving antennas, linear arrays.

471-72. *Electronics IV and V.* (6) (2-2-3) Linear waveshaping circuits, clipping and clamping circuits, piecewise linear circuits, diode gate circuits, transistor as a switch, multivibrators, counters, relaxation study of: clipping circuits; clamping circuits; bistable, monostable, astable, multivibrators; binary counting circuits; gate circuits; saw-tooth and square-wave voltage generators; AND circuits: OR circuits; inhibitor circuits. Three lectures per week including biweekly laboratory of three hours.

473. *Solid-State.* (Theory) (3-0-3) Structure of solids, metals, ionic crystals, and valence crystals, band theory of solids. Electron energy distribution; Fermi level, mean-free time, life and mobility of holes and electrons. Junctions; rectifiers, thermistors, transistors, and photoconductive cells. Ferromagnetism, ferroelectricity, and piezoelectricity. Domain structure; reversible and irreversible movements of domain walls. Metals, alloys, ferrospinels, barium titanate.

MECHANICAL ENGINEERING

Numerals in parentheses describe time requirements, thus: (1-4-3)—1 hour of theory per week; 4 hours laboratory per week; course yields 3 qtr. hours credit.

211. *Manufacturing Process-Metal Fabrication.* (3-0-3) Pattern making, pattern design and materials. Fundamental principles underlying manufacturing processes in the area of casting. Classroom discussion and demonstration.

212. *Manufacturing Process-Metal Fabrication.* (3-0-3) Fundamental principles underlying manufacturing processes in the area of machine tools. Classroom discussion and demonstration. Prerequisite: ME 211.

301. *Elementary Thermodynamics.* (3-0-4) Thermodynamics properties of gases, vapors, and mixtures. Transformation of energy, theoretical limitations. First law, second law, absolute temperature, entropy and available energy; properties of ideal gases, liquid, vapors and vapor mixtures. Prerequisite: Math 263.

302. *Thermodynamics.* (3-0-3) Energy relations of one-dimensional steady flow of compressible fluids applied to the De-Vaval nozzel, simple orifice, and lone pipe, simple single-stage impulse turbine; ideal power cycles; thermodynamics and processes of moist air; and other applications. Prerequisite ME 301.

303. *Thermodynamics.* (3-0-3) Application of principles of thermodynamics to selected problems of energy conversion systems-electrical, chemical and thermal fluid flow of a compressible mediu, cycle analysis. Prerequisite: ME 302.

313. *Kinematics.* (2-2-3) Analysis of mechanisms. A study of instantaneous centers, velocities, accelerations, and forces in plane mechanisms by analytical and graphical methods. Prerequisite: Math 263, Engr. 103 and Engr. 202.

322. *Physical Metallurgy.* (3-0-3) An introductory course where the structure of materials is studied in sequence from atoms to crystals, to phases, to microstructures. Phase equilibria is considered from a theoretical viewpoint and then applied through the introduction of the Iron-Iron Carbide system. Prerequisite: Chem. 113, Phy. 222.

323. *Heat Transfer.* (3-0-3) Heat transfer by conduction, convection, and radiation, mass transfer, diffusion; analogs, applications to solve engineering problems. Prerequisite: ME 302.

401. *Physical Metallurgy II.* (3-0-3) Application of equilibrium diagrams to the physical and mechanical properties of metals and alloys and their heat treatment, with emphasis placed on iron and steel. The Band Theory of electrical conduction is introduced. Ferromagnetism, recovery, recrystallization, and grain growth as well as a practical working understanding of various steels is offered. Prerequisite: ME 322 (Required of ME majors).

402. *Mechanical Engr. Measurements.* (1-4-3) A study of methods of simulating problems in mechanical engineering, and the study of stresses, deformations, dynamic characteristics, fluid and heat flow characteristics of different systems. Prerequisite: Math 462.

403. *Non-Destructive Testing.* (2-2-3) Application of photoelastic methods of stress analysis of machine parts and redundant structures; techniques of casting, annealing, stress freezing; the use of transmission and reflecting types of polariscopes. Two lecture and two laboratory hours per week. Prerequisite: CE 333.

404. *Physical Metallurgy III.* (2-2-3) Non-ferrous metallurgy is introduced through consideration of the common nonferrous metals of engineering value. Methods of fabricating metals by casting, powder metallurgy, hot and cold working are covered. The student is given a quick basic understanding of metallography and basic metal testing techniques. Prerequisite: ME 401.

411. *Machine Elements.* (2-2-3) 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: ME 313.

412. *Machine Design.* (1-4-3) The design of machine parts including shafting, gears, brakes, clutches, bearings, (sliding and anti-friction), springs, fly-wheels and frames. Prerequisite: ME 411.

413. *Advanced Machine Design.* (1-4-3) The proportioning of machine elements by the application of mechanics and the principles of strength of materials modified by practical considerations, together with an elementary study of friction and lubrication. Prerequisite: ME 412.

422. *Environmental Control I.* (2-2-3) Refrigeration cycles, refrigerant properties, heating, cooling loads; psychrometry; processes for heating; cooling humidifying, dehumidifying, purifying; heat transfer principles; controls. Three hours per week including biweekly laboratory of three hours. Prerequisite: ME 303.

423. *Environmental Control II. Design.* (1-4-3) Principles of heating, ventilating and air conditioning systems in current use. Heat loss and gain computations. Design and layout of heating and air conditioning system. One lecture and four laboratory hours per week. Prerequisite: ME 422.

432. *Mechanical Vibrations.* (3-0-3) Undamped and damped vibrations with one or two degrees of freedom; multiple degrees of freedom, forced vibrations, multi-mass transverse and torsional systems and balancing. Three hours per week. Prerequisite: Math 463, ME 313.

433. *Gas Dynamics.* (3-0-3) Principles of viscous and turbulant fluid flow in ducts, nozzles, blade passages; impulses and momentum; dimensional analysis and laws of similarity; compressible flow in ducts; effect of area change, heat addition, friction, and normal shocks, Thermodynamics of chemically-reacting flow. Prerequisite: ME 303.

441. *Lubrication.* (3-0-3) Principles of bearing analysis including: manufacture and properties of lubricants, hydrodynamics and hydrostatic lubrication, journal and thrust bearings, ball and roller bearings, Navier-Stockes equations, bearing materials and applications to design. Three lectures per week. Prerequisite: Math 263.

442. *Automatic Controls.* (3-0-3) Theory of control systems including open-loop and close-loop with emphasis on mechanical, hydraulic, thermal, and pneumatic systems; application of the analog computer to the solution of differential equations. Prerequisite: Engr. 330.

450. *Senior Project.* (0-6-3) A designed project in the major field of study applying analytical and experimental techniques to the solution of problems involved in the design of mechanical systems. Includes: use of digital and analog computers and experimental investigations of prototype design models.

451. *Mechanical Energy Conversion I.* (3-0-3) The theory of power and propulsion engines utilizing a gas as the working substance. Gas turbines, and spark and compression ignition reciprocating engines. Applications to automotive transportation, aircraft propulsion, and stationary-power systems. Prerequisite: ME 303.

452. *Mechanical Energy Conversion II.* (1-4-3) The steam power plant. Studies and tests in steam-electric power plant, boilers, steam turbines, electric generators, synchronous motor, pumps, and heat exchange apparatus, including condensers and cooling towers. One lecture, and four laboratory hours per week. Prerequisite: accompanied by ME 451.

453. *Power Plant Design.* (1-4-3) 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. Prerequisite: ME 412.

462. *Internal Combusion Engines.* (3-0-3) The study of spark ignition and compression ignition engines; combustion, detonation, carburetion and fuels. Prerequisite: ME 303.

463. *Internal Combustion Engines Laboratory.* (0-6-3) The testing of internal combustion engines; fuels and combustion products; brakes and dynamometers; lubricating oil tests. Prerequisite: ME 462.

DEPARTMENT OF INDUSTRIAL EDUCATION

W. V. HARPER, Ed.S., *Head*

The Department of Industrial Education consists of several curricula for the preparation of teachers of Industrial Arts, and personnel for the construction, printing, and aviation industries. As advances are made in industry and the technical areas, the Department of Industrial Education will alter its curricula to meet the industrial and technological demands.

The department offers undergraduate courses that lead to the Bachelor of Science Degree.

CURRICULUM IN INDUSTRIAL ARTS EDUCATION

P. E. STEWART, *Coordinator*

The Industrial Arts Curriculum is organized to offer experiences that will prepare young men and women as teachers of Industrial Arts in junior and senior high schools; and to provide experiences for all students who wish to develop an appreciation for an understanding of the technological society in which he lives.

Students majoring in Industrial Arts Education must meet all requirements of the University with regards to its Teacher Education Program. Such requirements are listed under the School of Education as "General Information on the Teacher Education Program."

Successful completion of the Industrial Arts Curriculum leads to the Bachelor of Science Degree and qualifies one to obtain a state teaching certificate in Industrial Arts.

CURRICULUM IN INDUSTRIAL ARTS EDUCATION

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 101-2-3	3	3	3
Math 111-12-13	4	3	3
Phy. Ed. 11-12-13 or Aerospace Studies 151-2-3	1	1	1
IA 101-2-3	3	3	3
*IA 111-121-131	3	3	3
Health 151, Art 133		3	3
IE 101	3		
	17	16	16

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 211-12-13	3	3	3
Soc. Stud. 111-12-13	3	3	3
Natural Science 121-22-23	4	4	4
Edu. 201, Psy. 242-43	3	3	3
*IA 141, 151, Aero 111	3	3	3
Phy. Ed. 20's-50's or Aerospace Studies 251-2-3	1	1	1
	17	17	17

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Edu. 301-387, Psy. 312	3	3	3
Soc. Stud. 114, Health 212, Phil. 323	3	3	3
IA 311	3		
Electives		3	3
**Shop Electives	3	3	3
Shop Electives	3	3	3
Aero 311-313-322	3	3	3
	18	18	18

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Edu. 426, Psy. 463	3	3	
IE 331-32	3	3	
IE 472			12
IA 301, 453	3	3	
IE 371, 450	3	3	
Aero 321-323	3	3	
Ed. 471			3
	15	15	15

* These courses need not be taken in the order listed. All should be taken during the freshman and sophomore years.

** Shop Electives may be chosen from the list of shops that follows: A minimum of nine quarter hours credit in at least three shops; and for certification purposes, not over 15 quarter hours credit in any one shop: Woodworking, Metalworking, Printing, Crafts, Electricity, Power and Transportation.

101. *Orientation.* (3) Acquaints the student with the departmental requirements, makes him aware of our present-day industrial and technological demand, with some of the implications for the future, and his role in our modern society. Three lecture periods each week.

173. *Technical Mathematics.* (3) The study and application of basic mathematical principles and concepts as related to modern industrial technology. Subject matter is selected from the fields of Arithmetic, Trigonometry, and Geometry. Prerequisite: Math 111-112. Three lecture and laboratory periods each week.

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 system and training of workers in modern industry. Three lecture periods each week.

321-2-3. *Part-time Programs in Cooperative Industrial Training.* (9) Principles of organizing and promoting such programs, selecting materials for related subjects, teaching, and carrying on supervised study and coordination. Three lecture periods each week.

331. *Shop Organization and Management.* (3) Securing equipment, making inventories and arranging for proper storage of materials, supplies and tools. Typical shop layouts, arrangements for tool rooms, stock rooms and storage facilities; keeping records and accounts. Personnel management of students and the organization of students' participation in shop management and safety. Three lecture periods each week.

332. *Instructional Aids.* (3) Designed to motivate and teach industrial education students to use, design and construct teaching aids for industrial classrooms and shops. Students are usually required to construct three-dimensional teaching aids. Three lecture periods each week.

333. *Materials and Methods for Shops 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 static and dynamic models, selected for use in specific teaching units. Three lecture periods each week.

371. *Methods of Teaching Industrial Education.* (3) Lesson planning, techniques of the demonstration, plans for related instruction and methods of testing studied. Three lecture periods each week.

374. *Industrial Internship.* (12) A summer cooperative venture between the University and industrial enterprises which provides actual on-the-job experiences for printing and building construction majors in the department. All these students are required to take Industrial Internship at the end of the sophomore and junior years. The Head of the Department of Industrial Education must approve all internships before students are permitted to enroll. Internship may be conducted in a commercial establishment or at Tennessee 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. Forty laboratory hours each week.

400. *Driver Education and Traffic Safety.* (3) Designed 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: IE 400. Six lecture and laboratory periods.

411. *Foremanship Training by the Conference Method.* (3) A study of 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 foreman's clubs and plant educational programs. Three lecture periods each week.

412-13. *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. Three lecture periods each week.

431-32. *Curriculum Building in Trade and Industrial Subjects.* (6) Arranging course material in trade subjects; following up results of job analysis; preparing check sheets

and individual job sheets in both trade and related subjects. Prerequisite: IE 412. Three lecture periods each week.

435-36-37. *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 the compilation and study of student records, employment placement, job progress, earnings, wage scale and similar items may also be carried out. Three lecture periods each week.

450. *Senior Project.* (3) Each senior is required to select and execute a project under supervision of his major advisor. It may involve the designing and making of the project complete with drawings, pictures, specifications and detailed data involved in its construction; or a research and compilation of a subject within the field of the student's interest. Three lecture periods each week.

472. *Student Teaching.* (12) 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. Student teacher schedules should be arranged to enable the student to devote full time to student teaching during the quarter in which the courses 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. Forty laboratory hours each week.

475. *Summer Industrial Internship.* (12) A continuation of IE 374. Forty laboratory hours each week.

INDUSTRIAL ARTS

Graphic Arts Courses

101. *Drawing.* (3) Instruction in the use of drafting tools, sketching in industrial design; orthographic, isometric, oblique and cabinet drawing as applied to industrial products. Six lecture and laboratory periods each week.

102. *Drawing.* (3) Methods and systems of construction; their application in the design and erection of residences, and commercial structures; architectural detailing. Six lecture and laboratory periods each week.

103. *Drawing.* (3) Continuation of IA 102. Six lecture and laboratory periods each week.

141. *Printing.* (3) An introduction to the tools, materials, processes, and personnel of the Printing Industry, how they developed, and how they are related to our present-day society. Three lecture periods each week.

142. *Platen Presswork.* (3) Skills are developed in the care and maintenance, register, make-ready and feeding of the platen presses. Prerequisite: IA 141. Six lecture and laboratory periods each week.

143. *Make-up and Imposition.* (3) Emphasis on the development of skill in the make-up and imposition of book forms, newspapers, pamphlets, brochures and boardsides. Six lecture and laboratory periods each week. Prerequisite: IA 141.

Woodworking Courses

111. *Woodworking.* (3) An introduction to the tools, materials, processes, and personnel of the Woodworking Industry, how they were developed, and how they are related to our present-day society. Three lecture periods each week.

312. *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 each week. Prerequisite: IA 111.

313. *Design of Wood Projects.* (3) Fundamentals, skills, and processes in designing and constructing wood projects as commonly used in secondary schools. Six lecture and laboratory periods each week.

411. *Cabinet Making.* (3) Fundamentals, skills, and processes in the designing and construction of cabinets. Six lecture and laboratory periods each week.

412. *Furniture Construction.* (3) Problems in designing and selecting materials and making out bills of material for furniture construction. Six lecture and laboratory periods each week.

413. *Upholstery.* (3) Fundamentals, skills, and processes in repairing and upholstering furniture. Six lecture and laboratory periods each week.

Metalworking Courses

121. *General Metalworking.* (3) An introduction to the tools, materials, processes and personnel of the Metalworking Industry. How they were developed, and how they are related to our present-day society. Three lecture periods each week.

322. Art Metal. (3) An introduction to Art and Jewelry making. 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. Six lecture and laboratory periods each week. Prerequisite: IA 121.

323. *Sheetmetal Working.* (3) Introduction to sheetmetal working. Developing patterns, laying-out, cutting, bending, framing, forming, making seams, wiring edges, turning a burr, crimping, riveting, spot welding and soldering sheet metal. Planning and making projects, and developing subject matters as taught in the junior and senior high levels. Six lecture and laboratory periods each week. Prerequisite: IA 121.

421. *Fundamentals of Machine Shop.* (3) Fundamentals of shop mathematics, tool identification, proper methods and uses, tool classifications, rules and scales. Six lecture and laboratory periods each week. Prerequisite: IA 121.

422. *Lathe Turning.* (3) Lathe nomenclature, chucking, micrometer reading, simple turning, roughing, polishing. Lathe set-up, jigs and fixtures. Six lecture and laboratory periods each week. Prerequisite: IA 121.

423. *Welding and Heat Treating.* (3) An introduction to arc and acetylene welding. Fundamental foundry practices and heat treatment of metals. Six lecture and laboratory periods each week.

Electricity—Electronics Courses

131. *Electricity.* (3) An introduction to the tools, materials, processes and personnel of the Electronics Industry, how they were developed, and how they are related to our present-day society. Three lecture and laboratory periods.

332. *Basic Electronics I.* (3) Exploratory course developed to familiarize the student with basic electronic principles and acceptable practices in the utilization of electronic devices used in our present-day highly mechanized push-button society. This course is a logically organized series of presentations of basic electronic principles designed to stimulate interest and motivate further study in this fast growing area. Prerequisite: IA 131. Three lecture and laboratory periods each week.

333. *Basic Electronics II.* (3) Designed to reinforce knowledge with functional and factual information involved in the design and characteristics of present day electronic devices. Includes a study of transmitting and receiving devices and many other electronically operated electro-mechanical innovations. Three lecture and laboratory periods each week. Prerequisite: IA 332.

431-32. *Television Theory and Practice.* (6) A study of the design, operation, repair, testing and alignment of T. V. receivers. Prerequisite: IA 131. Six lecture and laboratory periods each week.

433. *Radio Transmitters and Communications Procedure.* (3) Transmitter design and operation: F.C.C. laws and procedures. Prerequisite: IA 431-32. Six lecture and laboratory periods each week.

General Crafts Courses

151. *General Crafts.* (3) An introduction to the tools, materials, processes and personnel of the General Crafts Industry, how they were developed, and how they are related to our present-day society. Three lecture and laboratory periods each week.

352. *Woods and Plastics.* (3) An application of the fundamental principles of design and construction of wood and plastic projects as used on the secondary level. Six lecture and laboratory periods each week.

353. *Leather Crafts.* (3) An application of the principles of design and construction of leather projects. Six lecture and laboratory periods each week.

451. *Metal Crafts.* (3) An application and design of metal projects. Six lecture and laboratory periods each week.

452. *Ceramic Crafts.* (3) An application of the principles of design and construction of ceramic crafts. Six lecture and laboratory periods each week.

453. *Industrial Arts Design.* (3) An application of the fundamental principles of design and construction of all types of school shop projects. Three lecture and laboratory periods each week.

Mechanics Courses

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 and household mechanics. Six lecture and laboratory periods each week.

311. *Plumbing.* (3) The study of Plumbing Tools: their use and application in relation to industrial arts activities. Six lecture and laboratory periods each week.

362. *Power and Transportation.* (3) History of power and transporation. Horse drawn vehicles. Internal combustion engines, Marine Transporation and Aeronautics. Three lecture and laboratory periods each week.

363. *Power and Transporation.* (3) Continuation of Power and Transporation 362. Using skillfully common hand tools and machine tools that are used by motor mechanics. Design and construction of Marine and Aircraft models. Assist in maintenance of various types of machines and engines. Six lecture and laboratory periods each week.

CURRICULUM IN TECHNICAL AERONAUTICS

CECIL M. RYAN, *Coordinator*

The curriculum in Technical Aeronautics is designed to enable students to acquire the basic knowledge and skills required to qualify for gainful occupations in aviation, aerospace industries, airplane manufacturing corporations, or private aeronautical service enterprises. Upon completion of these required courses, the student will be prepared technically and academically to offer many contributions to our highly technical, space-age society. He is adequately prepared to open a general aeronautical service operation on his own, or may utilize these basic fundamentals to enhance rapid advancement in an armed services career if so desired. As advancements are made in aeronautics, this curriculum area will change its offerings to meet the demands of industry.

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 101-2-3	3	3	3
IA 101-2-3	3	3	3
Aero. 101-2-3	3	3	3
Math. 111-12-13	4	3	3
Aero. 111-12-13	3	3	3
P.E. 11-12-13 or A.S. 151-2-3	1	1	1
	17	16	16

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
Sciences Eds. 121-2-3	4	4	4
Soc. Stud. 111-12-13	3	3	3
I.E. 101, Aero. 312-13	3	3	3
P.E. 20's thru 50's or AS 251-2-3	1	1	1
Math 294	1		
	18	17	17

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Aero 301-2-3	3	3	3
Aero 321-22-23	3	3	3
M.E. 211, BA 201	3	3	
B.A. 323, 329, 335	3	3	3
Aero. 311	3		
Health 151, Art 133		3	3
I.A. Shop Electives	3	3	3
	18	18	15

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Philosophy 323			3
Aero 401-2-3	3	3	3
Aero 411-12-13	3	3	3
I.E. 450			3
Electives (300 and 400)		3	3
B.A. 326, Acct. 211	3	4	
Health 212	3		
Electives (300 and 400)	3	3	
	15	16	15

Total Qtr. Hrs. 198

Aeronautics Courses

101. *Aerospace Basic Science.* (3) Covers those subjects that are essential for aircraft and aerospace technology. This course covers the physical properties of air, airfoil design and characteristics, aerospace standards and materials. This course includes basic

information on truss structures, composite structures and sheetmetal fabrication as used in aerospace vehicles; including the fundamentals of aircraft electrical, and ignition systems. Three lecture and laboratory periods.

102. *Elementary Engines.* (3) Chemistry of combusion. 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; engine firing orders and ignition timing. Heat transfers, cooling and lubrication. Three lecture and laboratory demonstration periods.

103. *Elementary Aircraft.* (3) Aircraft structural designs and requirements. Welded steel tubing, aluminum alloy, fuselage and wing structures; dope and fabric covering. Aircraft system control mechanism design. Fabrication procedures for metal and composite structures. Three lecture and laboratory demonstration periods.

111. *Model Building.* (3) Deals with the structure and design for various model assemblies. Six laboratory periods.

112. *Aircraft Familiarization.* (3) Designed to acquaint the student with the operation, parts, assembly, and routine inspection of light aircraft. Three lecture and laboratory periods.

113. *Implications of Aviation.* (3) Deals with the social, geographic, economic and political implications of the air age.

201. *Advanced Engines.* (3) Disassembling, cleaning and visual inspection procedure. Maintenance and inspection requirements of ignition and fuel induction systems. Maintenance techniques for valve actuating mechanism. Inspection, installation and tracking of fixed pitch wood propellers. Power calculations, Engine run-up operation and preflight checks. Prerequisites: Aero 101-2. Six lecture and laboratory periods.

202. *Advanced Aircraft.* (3) Classification of repairs and alteration. Practical application of aircraft welding. Repair method for tubular steel, fabricated sheet metal and wood structures. Requirements of aircraft dopes, protective coatings and refinishing materials. Spray painting. Fabrication of transparent plastic materials. Prerequisites: Aero. 101-103. 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 and final run-up and pre-flight check. Prerequisite: Aero. 201. Six lecture and laboratory periods.

301. *Airframe Overhaul.* (3) Aircraft disassembly, repairs, alterations, recovering and refinishing. Aircraft system inspection, repair, and modification. Civil Air Regulations concerning aircraft repairs, alteration and modification. Compliance and airworthiness directives. Making and reading drawing of repairs, alteration and modifications. Finding center of gravity location by weighing aircraft and by computation methods. Inspection and overhaul of aircraft electrical systems, control surfaces, and control mechanisms, methods of splicing control cable, wood spars, and cap strips. Airplane assembly and final inspection for flight tests. Prerequisite: Aero. 202. Six lecture and laboratory periods.

302. *Aircraft Engine Accessory Overhaul.* (3) Inspection and overhaul of flost type carburetors, magnetos, and battery ignition distributors, starting motors, generators, voltage-current regulators, vacuum pumps 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: Aero 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 Product Aeromatic propellers, Hamilton standard hydramatic 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 Engine. Prerequisite: Aero 101-2. Six lecture and laboratory periods.

311. *Communications.* (3) The development of methods of communication, radio navigation, morse code, etc. Lecture and laboratory periods.

312. *Civil Air Regulations.* (3) Federal, state, and local safety regulations with its application to aviation. Lecture and laboratory periods.

313. *Meteorology.* (3) General effects of weather phenomena. Special study of its relation to aviation. Lecture and laboratory periods.

321. *Theory of Flight and Engine.* (3) The laws of nature as applied to aviation; also the principles, familiarization and operation of internal combustion and jet engines. Lecture and laboratory periods.

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.

401. *Airframe Maintenance.* (3) Repair and maintenance of fabric covered composite, tubular steel and sheet metal structures. Servicing and replacements of tires, wheels, and brakes. Repair and adjustment of aircraft electrical systems and control units. Maintenance of landing gear mechanism, hydraulic systems and essential units. Trouble shooting on live aircraft malfunction conditions. Civil Air Regulations concerning airframe repairs. Prerequisite: Aero. 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 mechanism, cylinder assemblies, baffles; cowling and cooling systems. Engine mount structures and dynamic suspension maintenance and repairs. Adjusting fuel, oil and vacuum pressure regulator. Oil pump and lubrication system repairs. Field servicing aircraft propellers. Prerequisite: Aero. 203. Six lecture and laboratory periods.

403. *Avionics.* (3) Basic design and functional operation of electrical and electronic devices used in aircraft and aerospace vehicles. This course includes both factual and functional information on installation, operation, servicing, testing and acceptable mantenance procedures. FAA and FCC regulations in regards to installation and servicing of commuication and navigational equipment. Installation, calibration and bench-check methods. Six lecture and laboratory periods. Prerequisite: Aero. 302.

411. *Advanced Flight.* (3) Supervised solo with dual flight instruction and experience. One lecture and two laboratory periods.

412. *Aerodynamics.* (3) A general course dealing with the properties of air flow, air foil characteristics, wing theory, parasitic drag, introduction of stability and control, and wind tunnel experiments.

413. *Aeronautics Workshop.* (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.

CURRICULUM IN BUILDING CONSTRUCTION

LEON C. FARBES, *Coordinator*

The curriculum in building construction is designed to meet 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, materials salesmen and contractors after they have had a reasonable amount of 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 the necessary skills and techniques (areas of concentration—carpentry, electricity, drawing and masonry) for employment in industry, and (2) to offer experiences which will prepare trade and industrial teachers for the State of Tennessee after two or more years of journeyman experience.

Freshman Year	Quarter Hours Credit		
Name of Course	I	II	III
English 101-2-3	3	3	3
Math 111-12-13	4	3	3
Business Finance 102			3
I.A. Drawing 101-2-3	3	3	3
BC 101-2-3	3	3	3
Phy. Ed. 11-12-13 or Air Science 151-52-53	1	1	1
IE 101	3		
Business Principles 101		3	
	17	16	16

Sophomore Year	Quarter Hours Credit		
Name of Course	I	II	III
English 211, IA 131	3	3	
Speech 202, OA 211	3		3
Health 151, Acc't. 211		3	4
BC 212-13-14	3	3	3
BC 221-22-23	3	3	3
Nat. Sci. 121-22-23	4	4	4
Phy Ed. 20's-30's or Air Science 251-2-3	1	1	1
	17	18	18

Summer—IE 374. Summer Industrial Internship (12) (Prior to junior year.)
Summer—IE 475. Summer Industrial Internship (12) (Prior to senior year.)

Junior Year	Quarter Hours Credit		
Name of Course	I	II	III
Edu. 201, Psy. 242-43	3	3	3
BC 401. 411-413	3	3	3
BC Shop Electives	3	3	3
IE 331-333-412	3	3	3
BC Electives 300-400	3	3	3
Economics 211-12-13	3	3	3
	18	18	18

Senior Year	Quarter Hours Credit		
Name of Course	I	II	III
BC 332		3	
Business Law 323-24-25	3	3	3
BC 412		3	
IE 411-431-435	3	3	3
Electives 300-400	3	3	3
IE 450	3		
BC 402			3
Electives 300-400	3		
	15	15	12

Building Construction

101. *Fundamentals of Carpentry.* (3) Modern tools and portable machinery, materials and their uses. Carpentry specifications and 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, and methods used in building forms. Prerequisite: BC 101. Six lecture and laboratory periods.

103. *Walls and Floor Framing.* (3) Types of wall framing, sill construction, girders and beams, joints, bridging, subflooring, outside walls, partition walls, framing, rough openings, second floor joists and wall sheathing. Six lecture and laboratory periods.

212. *Masonry Construction.* (3) This 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. Six lecture and laboratory periods.

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. Six lecture and laboratory periods.

214. *Masonry Construction.* (3) Practice is given in advance brick and concrete work; laying fire brick; fireplace work; stone cutting and setting tile. Six lecture and laboratory periods.

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. Six lecture and laboratory periods.

222. *Construction Drawing.* (3) Continuation of Construction Drawing 221. Six lecture and laboratory periods.

223. *Construction Drawing.* (3) Specification and estimating; reading and interpreting blueprints, making complete sets of drawings; writing specifications and figuring costs. Six lecture and laboratory periods.

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: IA 131. Six lecture and laboratory periods.

303. *Residential Wiring.* (3) This course is a continuation of 302. Six lecture and laboratory periods.

332. *Concrete Construction.* (3) Instruction in kinds of concrete, design of footings, foundation and reinforcement, types of insulation and waterproofing. Six lecture and laboratory periods.

401. *Fundamentals of Plastering.* (3) The study of common materials; care and use of tools. Mixtures and application. Prerequisite: BC 212. Six lecture and laboratory periods.

402. *Fundamental Concrete Work, Cement, Finishing.* (3) The study of materials, care and use of tools. Application of concrete mixture, form building. Construction of foundation walls, walks and floors. Prerequisite: BC 212. Six lecture and laboratory periods.

403. *Advanced Masonry Construction.* (6) Practical application of materials and methods covered in the previous masonry courses. Twelve lecture and laboratory periods.

411. *Mechanical Equipment of Building.* (3) Fundamentals of plumbing and heating; installation of controls on gas, water, and steam system; layout for plumbing, heating and ventilation; fixtures. Six lecture and laboratory periods.

412. *Estimating.* (3) Practical examples in estimating costs of buildings; labor and materials. Six lecture and laboratory periods.

413. *Painting and Finishing.* (3) Blending and matching colors and pigments, interior and exterior house painting. Six lecture and laboratory periods.

421. *Roof Framing.* (3) Styles of roofs: 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.

422. *Exterior Finish.* (3) Covering for roof and wall, simple, open and box cornice, gable trim, planing door and window frames, water table, corner boards. Porch cornice, bay window trim and exterior wall covering. Prerequisite: BC 401. Six lecture and laboratory periods.

423. *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: BC 402. Six lecture and laboratory periods.

431. *Industrial Wiring.* (3) Methods and procedures, equipment and materials peculiar to commercial buildings. Design and installation of wiring systems including circuitry for lighting, motors and other polyphase current equipment. Prerequisite: BC 303. Six lecture and laboratory periods.

432. *Industrial Wiring.* (3) This course is an extension of 431. Six lecture and laboratory periods.

433. *Lighting, Estimating, National Electrical Code.* (3) 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: BC 432. Six lecture and laboratory periods.

CURRICULUM IN TECHNICAL PRINTING

GILBERT K. PLEASANT, *Coordinator*

The curriculum in Vocational Industrial Education Printing is designed to contribute to the efforts of Tennessee State University in achieving its purpose of preparing leaders and citizens in general for intelligent participation in their environment.

Specifically this curriculum is designed to (1) train young men and women to make a living by acquiring necessary skills and techniques for employment in industry, (2) offer experiences which will prepare trade and industrial teachers for the state of Tennessee, (3) offer additional training for in-service teachers, and (4) provide research in the field of letterpress and offset printing.

CURRICULUM IN PRINTING

Freshman Year	Quarter Hours Credit		
Name of Course	I	II	III
English 101-102-103	3	3	3
Math 111-112-113	4	3	3
Health 151		3	
IA 101-102-103	3	3	3
IA 141-142-143	3	3	3
P.E. 11-12-13 or Air Science 151-152-153	1	1	1
Art 133			3
IE 101	3		
	17	16	16

Sophomore Year	Quarter Hours Credit		
Name of Course	I	II	III
Natural Science 121-22-23	4	4	4
English 211-12-13	3	3	3
Printing 201-2-3	3	3	3
Soc. Stud. 111-12-13	3	3	3
P.E. 20's-50's or Air Science 251-2-3	1	1	1
Education 201	3		
Psychology 242-243		3	3
	17	17	17

Junior Year	Quarter Hours Credit		
Name of Course	I	II	III
Elem. Acct. 211-12-13	4	4	4
Printing 301-2-3	3	3	3
IA 131, BC 302-303	3	3	3
IE 331	3		
IE 411			3
English 301-2-3	3	3	3
Electives 300-400 level		3	
	16	16	16

Senior Year	Quarter Hours Credit		
Name of Course	I	II	III
Business Law 323-24-25	3	3	3
IE 431-435		3	3
Electives 300-400 level	3	3	3
IE 450	3		
Printing 401-2-3	3	3	3
	12	12	12

IE 374. *Summer Industrial Internship.* (12) The Summer Industrial Internship is required at the end of student's Junior Year for (12) twelve quarter hours credit.

COURSES IN PRINTING

IA141. *Printing.* (3) For course description see Industrial Arts curriculum.

IA142. *Platen Presswork.* (3) For course description see Industrial Arts curriculum.

IA143. *Make-up and Imposition.* (3) For course description see Industrial Arts curriculum.

201. *Linotype Keyboard Operation.* (3) Emphasis on correct keyboard fingering and everyday maintenance of the machine. Prerequisite: IA143. Six lecture and laboratory periods.

202. *Cylinder Presswork.* (3) Care, maintenance, make-ready, and operational skills developed. Prerequisite: IA141. Six lecture and laboratory periods.

203. *Cost Finding, Estimating and Bindery Operation.* (3) Copy fitting and estimating the cost of producing all types of printed matter. Standard sizes, weights and proper uses of cover, cards, book and bond papers are studied. The development of skills in the operation of the power cutter, folder, stitcher and perforator. Six lecture and laboratory periods.

301. *Advance Linotype Keyboard Operation.* (3) Further development of manipulative skills on the linotype keyboard and performance of second echelon maintenance. Prerequisite: 201. Six lecture and laboratory periods.

302. *Advanced Cylinder Presswork.* (3) Further development of technical know how in cylinder presswork. Prerequisite: Printing 202. Six lecture and laboratory periods.

303. *Offset Fundamentals.* (3) Principles and practices of the planographic printing process are studied also the copy camera, stripping, opaqueing, and other offset techniques are studied.

401-2-3. *Production.* (9) These courses are designed to round out the student's training by concentrated application of principles and techniques gained in previous courses in the area of hand compositions make-up and imposition. Linotype Keyboard Operation and machine principles, and platen and cylinder presswork. 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.

DEPARTMENT OF AEROSPACE STUDIES

GEORGE A. HENRY, JR.

Major, U. S. Air Force

Professor of Aerospace Studies

Faculty:

Officers:

Captain Edward D. Alston, Jr.
Captain Jesse W. Jackson, Jr.
Captain Ronnie C. Peoples

Non-Commissioned Officers:

Technical Sergeant Arthur J. Jones
Technical Sergeant Leo A. Parrish, Jr.
Staff Sergeant George L. Wooden
Staff Sergeant Samuel R. Davis
Staff Sergeant Martin L. Hood

AIR FORCE RESERVE OFFICERS TRAINING CORPS PROGRAM

PURPOSE OF AIR FORCE ROTC

The Air Force ROTC Program is designed to qualify for commissions those college men who desire to serve in the United States Air Force. The program provides education that will develop skills and attitudes vital to the professional Air Force officer. Upon graduation from the University and the Department of Air Force Aerospace Studies, students are commissioned second lieutenants in the United States Air Force Reserve. Commissioned graduates will be required to serve at least five years active duty with the Air Force if they take flying or navigator training. Non-flying officers will be required to serve at least four years active duty. Opportunities exist throughout this period of active duty for the graduate to receive a Regular Commission in the Air Force and to pursue graduate studies through the Air Force Institute of Technology (AFIT), and commissioned service as a career.

UNIVERSITY CREDITS

The following credits are granted for Air Force Aerospace Studies work:

Aerospace Studies 100 series (Freshman)—3 quarter hours per year
Aerospace Studies 200 series (Sophomore)—3 quarter hours per year
Aerospace Studies 300 series (Junior)—9 quarter hours per year
Aerospace Studies 400 series (Senior)—9 quarter hours per year

The Department of Aerospace Studies offers a minor consisting of 30 quarter hours including:

Six (6) quarter hours of general military course, 1 quarter hour each quarter during the freshman and sophomore years.

Twenty-four (24) quarter hours of 300 and 400 level courses during the junior and senior years as follows:

a. Six (6) quarter hours of 300 and 400 level social science courses

b. Eighteen (18) quarter hours of Aerospace courses, (Courses 351, 352, 353, 451, 452, 453). Departments may allow these courses as alternatives for elective credit and certain required courses. Departments which require unspecified minors may use the Aerospace program as a minor.

COURSES AVAILABLE

The first two years (freshman and sophomore) of the Air Force Curriculum are known as the General Military Course. The last two years of the curriculum (junior and senior) are known as the Professional Officer Course.

Flight training, which includes ground instruction and thirty-five hours of flight instruction, is offered free of charge to qualified pilot applicants who are senior ROTC cadets. The cadet receives a Federal Aviation Agency private pilot's license on successful completion of the Flight Instruction Program.

ELIGIBILITY FOR THE PROFESSIONAL OFFICER COURSE

(Junior and Senior Years)

All cadets enrolled in the Professional Officer Course (junior and senior years) of the Air Force ROTC must:

a. Have either completed the General Military Course (freshman and sophomore years), or the off-campus six weeks Field Training Course, or have the required amount of prior military service.

b. Have two academic years of college remaining (either graduate or undergraduate).

c. Have achieved an Officer Quality percentile or 25 or higher on the Air Force Officer Qualification Test (AFOQT).

d. Execute a written agreement with the Government to complete the program, contingent upon remaining in school; and to attend the off-campus Four Week Field Training program at the time specified and to accept an Air Force Reserve Commission, if tendered.

e. Be selected by the Professor of Aerospace Studies and the President of the University or his duly authorized representative.

f. Meet certain specified age requirements.

EMOLUMENTS

a. General

All cadets enrolled in AFROTC are furnished texts and uniforms by the Government through the Military Property Custodian, Tennessee State University. Enrollees are required to deposit $10.00 as surety to the University against loss or damage of uniforms or equipment for which the University is accountable to the Government. At the completion of AFROTC, or when the student withdraws from the University, the deposit is returned to the student provided he obtains a proper clearance for uniforms and equipment. Professional Officer Course cadets receive a subsistence allowance of $1.33 per day; not to exceed 600 days. In addition, they are paid mileage to and from Field Training, plus $137.50 per month while in attendance. A Four-Week Field Training Course is normally required between the junior and senior years.

b. Scholarship Program.

Four-year cadets are eligible to compete for a limited number of full-tuition scholarships and $75.00 per school year for books, and a retainer fee of $50.00 per month for 20 months. Applications must be made during the sophomore year. Selection will depend mainly on three factors: Score on the Air Force Officer Qualifying Test; past academic performance; and the assessment of a scholarship review board. These are given approximately equal weight.

DRAFT DEFERMENT

Participation in the AFROTC program permits deferment from the draft under the Universal Military Training and Service Act. Fifty percent of Second Quarter freshmen, all sophomores (AS 200 series), and all Professional Officer Course cadets (juniors and seniors), may be deferred. For further information on the subject of deferment, students should consult the Department of Aerospace Studies and the Dean of Admissions and Records.

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 Professional Officer 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 30 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.

AEROSPACE STUDIES 250: SIX-WEEKS FIELD TRAINING COURSE. This course is designed to prepare the student for enrollment into the Professional Officer Course (AS 300 and AS 400). It enables transfer students and others who are unable to take the two-year General Military 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.

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 Professional Officer Course.

3. *The Honor Flight.* Outstanding General Military Course cadets who perform selected duties for the University.
4. *NCO Academy.* An organization of selected Basic Cadets whose aim is to develop leadership potential through proficiency in drill and ceremonies.
5. *Angel Flight.* A national auxiliary of the Arnold Air Society. It is composed of selected coeds who are interested in enhancing espirit, morale and appearance of the Air Force ROTC Cadet Corps.

CURRICULUM

The Department offers a minor consisting of 30 quarter hours including:

Six (6) quarter hours of basic courses, 1 quarter hour each quarter during the freshman and sophomore years.

Twenty-four (24) quarter hours of 300 and 400 level courses during the junior and senior years as follows:

a. Six (6) quarter hours of 300 and 400 level social science courses.
b. Eighteen (18) quarter hours of Aerospace courses, courses 351, 352, 353, 451, 452, 453. Some departments may allow these courses as alternatives for elective and certain required courses. Departments which require unspecified minors may use the Aerospace programs as a minor.

The Aerospace Studies' program is voluntary. It has a number of advantages for the male students. Those students who are interested are encouraged to discuss the program with their major advisors and the Department of Aerospace Studies.

COURSES IN AEROSPACE STUDIES

AEROSPACE STUDIES 151, 152, 153, *WORLD MILITARY SYSTEMS* (3), FRESHMAN YEAR

An Introductory Course exploring the causes of the present world tensions, the role and relationship of national power to those tensions. Includes a study of the interrelationship of Geographical, economical, cultural, political and military factors. The main differing ideologies are compared and the factors basic to these differences are analyzed. Included also is a study of the Department of Defense and the defensive forces of the United States.

AEROSPACE STUDIES 251, 252, 253, *WORLD MILITARY SYSTEMS* (3), SOPHOMORE YEAR

Continues the exploration of the world power structure through the understanding and application of the elements of national power (geography, culture, politics, military, economics), surrounding the existence of this structure. Includes a thorough study of the physio-political relationship of the United States to the other nations, with emphasis on the U.S.S.R., it's Satellites, Red China and the Western Alliance of Nations. The course also includes an analysis of trends and implications of the present world ideological differences. Prerequisites: AEROSPACE STUDIES 151, 152, 153.

AEROSPACE STUDIES 351, 352, 353, *GROWTH AND DEVELOPMENT OF AEROSPACE POWER* (9), JUNIOR YEAR

These courses are designed to improve the ability to speak and write with accuracy, clarity and dignity of style and provide an introduction to the course of military conflict; the development of Aerospace Power in the United States; million and organization of the defense department; Air Force concepts, doctrine and employment. Include the United States operation in space for commercial and military uses. Prerequisites: Aerospace Studies 100 and 200 series, or Aerospace Studies 250 (Six week Field Training).

AEROSPACE STUDIES 451, 452, 453, *THE PROFESSIONAL OFFICER* (9), SENIOR YEAR

These courses are designed to further develop the student's managerial and leadership abilities with emphasis on group discussions, lectures, short papers, and human relations. 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. Prerequisites: Aerospace Studies 351, 352, 353.


U.S. AIR FORCE
USAF

EXTENSION, CONTINUING EDUCATION AND FIELD SERVICES

JAMES E. FARRELL, Director

Faculty:

Ozie L. Adams, Christine Alexander, Arthur B. Davis, Robert Derden, Henry C. Hardy, Willie E. Officer, Marylouise E. Ritter, and Frederick D. Smith.

EXTENSION, CONTINUING EDUCATION AND FIELD SERVICES

Purpose

THE Agricultural Extension Service in the United States was established July 1, 1914 by the Act of Congress commonly known as the Smith-Lever Act. Its purpose is to extend agricultural and home economics educational programs from the colleges of Agriculture and Home Economics to farm families and others in the state who do not have the opportunity to enroll in resident courses of instruction at colleges.

Agricultural extension instruction is defined by the Smith-Lever Act as "the giving of instruction and practical demonstrations in agriculture and home economics to persons not attending, or resident in, said colleges, in the several communities, and imparting to such persons information on said subjects through field demonstrations, publications, and otherwise; at this time work shall be carried on in such manner as may be mutually agreed upon by the Secretary of Agriculture and the State Agricultural College receiving the benefit of the Act." The work of the Extension Service is carried on as part of the Continuing Education Program, it is an Administrative unit of Tennessee 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

DIFFERENT terminology has been used to describe continuing education. We refer to it here as those educational activities not included in the regular five degree-granting units of the University, it comprises all other formally organized educational activities of the University. Its program consist of (a) Human Relations institutes with emphasis on Inter-Group Relations Programs and Leadership Training. (b) Special courses for adults on topics of current public policy of cultural interest. (c) Especially devised substantive courses for teachers. (d) The Evening School offers a *continuation* of degree or certificate programs which cannot satisfactorily be offered in the regular day program.

The Division of field services offers short courses, Institutes and workshops designed for the specific needs of the group being served. They may be held on the campus or at any place in the state where adequate facilities and sufficient interests exist. Arrangements may be made for these services through the Director. The Division will work with agencies in rural and urban communities over the state in planning programs for general improvement in four major areas which include: (1) Agriculture, (2) Home Economics, (3) General Education, and (4) Community organizations.

The division offers services of its resource consultants who are specialists in Agricultural Education, Home Economics Education, Farm Records and Accounts, Poultry Husbandry, Swine and Sheep Husbandry, Beef Cattle, Farm Buildings and Mechanics, Ornamental Horticulture, Dairy Husbandry, Plant Science, Home Furnishings, Foods and Nutrition, Clothing and Textiles, Child Care and Family Relationships, and Veterinary Medicine.

The method employed in using consultant services is determined by the needs of the local community. The services are offered on individual, group, organizational and community bases.

The division sponsors a Farm and Home Institute on the campus each year, for the purpose of disseminating information to farmers and farm wives from local communities of Tennessee.

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