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BULLETIN



NOVEMBER 1957

Announcements

For 1957-1958

Nashville, Tennessee

BULLETIN

TENNESSEE AGRICULTURAL AND INDUSTRIAL STATE UNIVERSITY

ANNOUNCEMENTS

1957 - 1958

VOLUME XLV NUMBER 3

Published bimonthly by Tennessee Agricultural and Industrial State University,
3500 Centennial Boulevard, Nashville, Tennessee.
Entered as second class matter at the Post Office at Nashville, Tennessee

NASHVILLE, TENNESSEE

NOVEMBER, 1957

CALENDAR FOR 1957

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Academic Year 1957-58

Fall Quarter 1957-58

September 16, Monday ..... Faculty Meeting (8:30 a.m.)
September 17-22, Tuesday-Sunday ..... Freshman Week Program
September 18-19, Wednesday-Thursday ..... Registration for Upper Classmen
September 20, Friday ..... Registration for Freshmen
September 21, Saturday ..... General Registration
September 23, Monday ..... Classes Begin
September 30, Monday ..... Opening Convocation
October 24-25, Thursday-Friday ..... Mid-Term Examinations
November 28-30, Thursday-Saturday ..... Thanksgiving Holidays
December 4-7, Wednesday-Saturday ..... Examinations, Fall Quarter

Winter Quarter 1957-58

December 9-10, Monday-Tuesday ..... Registration, Winter Quarter
December 11, Wednesday ..... Classes Begin
December 21, Saturday (12:00 Noon) ..... Christmas Recess Begins
January 6, Monday (8:00 a.m.) ..... Classes Resume
January 23-24, Thursday-Friday ..... Mid-Term Examinations
March 10-13, Monday-Thursday ..... Examinations, Winter Quarter
March 14-15, Friday-Saturday ..... Spring Recess

Spring Quarter 1958

March 17, Monday ..... Registration, Spring Quarter
March 18, Tuesday ..... Classes Begin
April 17-18, Thursday-Friday ..... Mid-Term Examinations
May 27-30, Tuesday-Friday ..... Examinations, Spring Quarter
June 1, Sunday ..... Baccalaureate
June 2, Monday ..... Commencement

SUMMER SESSION 1958

First Term

June 9-10, Monday-Tuesday ..... Registration
June 11, Wednesday ..... Classes Begin
July 10-11, Thursday-Friday ..... Examinations, First Six Weeks

Second Term

July 12-14, Saturday-Monday ..... Registration
July 15, Tuesday ..... Classes Begin
August 14-15, Thursday-Friday ..... Examinations, Second Six Weeks
August 10, Sunday ..... Baccalaureate-Commencement Exercises

ACADEMIC ORGANIZATION OF THE UNIVERSITY

GRADUATE SCHOOL

SCHOOL OF ARTS AND SCIENCES

- Department of Biology
- Department of Chemistry
- Department of English
- Department of Home Economics
- Department of Modern Foreign Languages
- Department of Physics and Mathematics
- Department of Science Education
- Department of Social Sciences
- Department of Speech and Drama

Division of Agriculture

- Department of Agricultural Education and Agricultural Economics
- Department of Agronomy
- Department of Animal Science
- Department of Horticulture

SCHOOL OF EDUCATION

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

Division of Business

- Department of Business Administration
- Department of Business Education

SCHOOL OF ENGINEERING

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

DEPARTMENT OF AIR SCIENCE

(Reserve Officers' Training Corps)

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

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Leon C. Farbes, B.S., M.S., Tennessee A. and I. State University. *Instructor in Industrial Education.*

Mattye C. Flowers, A.B., Lane College; M.S., Iowa State College. *Associate Professor and Coordinator of the Curriculum in Home Economics Education.*

Walter A. Flowers, B.S., Alcorn A. and M. College; M.S., Iowa State College; LL.D., Rust College and Texas College. *Professor of Agricultural Education and Director of the Division of Agriculture.*

Geraldine B. Fort, B.S., Tenn. A. and I. State College; M.S., Columbia Universitl. *Associate Professor and Coordinator of the Curriculum in Clothing and Textiles.*

Anceo Francisco, B.S., Lincoln University (Mo.); M.A., University of Michigan. *Instructor in Music and Assistant Director of Bands.*

Maurine Francisco, B.Mus., Howard University; M.A., Columbia University. *Instructor in Music.*

Arthur Franklin, A.B., Tougaloo College; M.S., Indiana University. *Instructor in Secondary Education.*

Luther B. Franklin, B.S., Tougaloo College; M.S., Tenn. A. and I. State College. *Instructor in Foods and Nutrition.*

Lurelia H. Freeman, B.A., Rosary College. *Technician, French.*

Mildred K. Gaines, B.S., Tenn. A. and I. State College; M.S., New York University. *Assistant Professor of Business Administration.*

David C. Gandy, B.S., Morehouse College; M.S., Atlanta University. *Assistant Professor of Chemistry.*

Pearlie M. Gasaway, A.B., Lane College; M.A., Columbia University. *Associate Professor of Mathematics.*

Sadie C. Gasaway, B.S., LeMoyne College; M.A., University of Illinois. *Associate Professor and Coordinator of the Curriculum in Mathematics.*

Carrie Gentry, B.S., Howard University. *Technician, Health and Physical Education.*

Howard C. Gentry, B.S., Florida A. and M. College; M.S., Ohio State University. *Associate Professor of Health and Physical Education.*

Ira A. Gentry, A.B., Morehouse College; M.A., University of Michigan. *Instructor in Secondary Education.*

Nelson W. Genung, B.S. in Electrical Engineering, University of Illinois. *Part-time Instructor in Electrical Engineering.*

Isaac T. Gillam, IV, B.A., Howard University. First Lieutenant, U. S. Air Force. *Assistant Professor of Air Science.*

Eddie T. Goins, A.B., Knoxville College; M.A., Columbia University. *Assistant Professor of Music.*

Charles M. Goolsby, B.S., M.S., University of Nebraska; Ph.D., Harvard University. *Professor of Biology.*

Hiram V. Gordon, B.S., M.S., Tenn. A. and I. State University. *Instructor in Art Education.*

Mattie Gordon, B.S., M.A., Tenn. A. and I. State College. *Instructor in Business Education.*

Constance Green, B.S., Lincoln University; M.A., University of Chicago. *Instructor in Business Administration.*

Howard W. Green, B.S., Lincoln University (Mo.); M.S., University of Pittsburgh. *Associate Professor of Health and Physical Education.*

Frank T. Greer, B.Mus., West Virginia State College; M.A., Marshall College. *Associate Professor of Instrumental Music and Director of Bands.*

Mary H. Greer, B.S., Winston-Salem Teachers College; M.S., Cornell University. *Instructor in Home Economics Education.*

Paul F. Guenther, B.A., University of Denver; M.A., Colorado State University; Ph.D., University of North Carolina. *Part-time Assistant Professor of German.*

*Clyde W. Hall, B.S., Savannah State College; M.S., Iowa State College; Ph.D., Bradley University. *Associate Professor of Industrial Education.*

David A. Hamilton, B.S., M.S., Tenn. A. and I. State College. *Assistant Professor of Agricultural Education and State Itinerant Teacher Trainer in Agricultural Education.*

Elbert Hardeman, B.S., M.A., Bradley University. *Assistant Professor of Speech and Drama.*

H. C. Hardy, B.S., Tenn. A. and I. State College. *Technician and Farm Manager.*

William V. Harper, B.S., South Carolina State College; M.S., Wayne University. *Professor and Head of the Department of Industrial Education, and Coordinator of Industrial Relations.*

Ronald M. Harris, B.S. in Architectural Engineering, Kansas State College. *Assistant Professor of Architectural Engineering.*

S. P. Harris, A.B., Fisk University, D.D.S., Meharry Medical College. *Part-time Instructor in Health and Physical Education.*

Thomas H. Hayes, Staff Sergeant, U. S. Air Force. *Instructor in Air Science.*

Lonnie Haynes, B.S., M.S., Tenn. A. and I. State College. *Instructor in Chemistry.*

Carl M. Hill, B.S., Hampton Institute; M.S., Ph.D., Cornell University. *Professor of Chemistry and Chairman of the School of Arts and Sciences.*

Mary E. Hill, B.S., Virginia State College; M.S., University of Pennsylvania. *Associate Professor of Chemistry.*

Macon G. Hinton, B.S., in Civil Engineering, Howard University; M.S.E. in C.E., University of Michigan. *Professor of Civil Engineering.*

Lewis R. Holland, B.C.S., M.C.S., New York University. *Associate Professor and Coordinator of the Curricula in Accounting, Business Administration and Economics.*

Elise Hope, A.B., University of Cincinnati; M.S., Atlanta University. *Assistant Professor of Psychology.*

Juanita E. Horner, B.S., Tenn. A. and I. State College; M.A., University of Michigan. *Assistant Professor of English.*

Madelyn B. Houston, A.B., M.A., Tenn. A. and I. State University. *Instructor in Speech and Drama.*

Hayes Howard, B.S., Hampton Institute. *Associate Professor of Engineering and Director of Physical Plant.*

Robert J. Hudson, B.S., Tenn. A. and I. State College; M.A., New York University. *Assistant Professor of English.*

Thomas H. Hughes, B.S., West Virginia State College; M.S., Cornell University. *Professor of Health and Physical Education.*

George Hull, Jr., B.S., M.S., Tenn. A. and I. State College; Ph.D., Ohio State University. *Assistant Professor of Biology.*

Sadie M. Hunter, B.S., Tenn. A. and I. State College; M.A., Columbia University. *Assistant Professor of Business Education.*

Mildred S. Hurley, B.S., South Carolina A. and M. College; M.S., Indiana University. *Assistant Professor of Elementary Education.*

Robert E. Hurst, B.S., Alcorn A. and M. College; A.B., Lincoln University (Pa.); M.S., Cornell University. *Professor of Biochemistry and Coordinator of Instruction in the Division of Agriculture.*

Henry H. Hymes, B.A., Tenn. A. and I. State College; M.S., Syracuse University. *Assistant Professor of Geography.*

Leon Q. Jackson, B.S. in Architecture, Kansas State College; M.S. in Architecture, University of Oklahoma. *Associate Professor and Head of the Department of Architectural Engineering.*

Mary L. Jackson, B.S., M.S., Tenn. A. and I. State College. *Instructor in Business Education.*

Samuel Jackson, B.S., New York University; M.A., Teachers College, Columbia University. *Instructor in Music.*

Thomas A. Jackson, B.S., M.S., Tenn. A. and I. State University. *Instructor in Industrial Education.*

William N. Jackson, B.S., Morehouse College; M.S., Atlanta University; Ph.D., Ohio State University. *Professor and Head of the Department of Science Education.*

Edmond T. Jenkins, B.A., Howard University; M.A., Western Reserve University. *Instructor in Speech and Drama.*

Eugene E. Jiggitts, Technical Sergeant, U. S. Air Force. *Instructor in Air Science.*

Ensign Johnson, Jr., B.S. in Electrical Engineering, Vanderbilt University. *Part-time Instructor in Electrical Engineering.*

Mary E. Johnson, A.B., Virginia State College; M.A., Michigan State University. *Instructor in French.*

Napoleon Johnson, B.S. in Civil Engineering, Howard University; M.S.E. in Civil Engineering, University of Michigan. *Professor and Head of the Department of Civil Engineering.*

Alma Dunn Jones, B.S., Tenn. A. and I. State College; M.A., Columbia University. *Professor of English and Chairman of Freshman English and Composition.*

Clinton E. Jones, B.S., North Carolina A. and T. College; M.S., University of Michigan. *Professor of Applied Mathematics in Engineering.*

Cornelius Jones, A.B., M.A., Tenn. A. and I. State College. *Assistant Professor of Political Science.*

Erna B. Jones, B.S., Prairie View State College; M.S., Colorado State College. *Associate Professor of Home Management.*

Grace Jones, A.B., Dillard University; M.A., University of Michigan. *Assistant Professor of Secondary Education.*

Harding L. Jones, B.S., Tenn. A. and I. State College. *Technician, Industrial Education and in charge of Machine Shop.*

*Harold Jones, B.S., Virginia State College; M.S., Cornell University. *Assistant Professor of Agricultural Engineering.*

Hinton C. Jones, A.B., Morehouse College; M.A., Cornell University. *Assistant Professor of English and Chairman of Sophomore Literature.*

Bessie Fogle Kean, A.B., Kentucky State College; M.A. in Library Science, University of Michigan. *Associate Professor of Library Service and Hostess to Athletic Department.*

Raymond H. Kemp, B.A., M.S., Duquesne University. *Professor of Physical Education and Director of Athletics.*

Clyde Kincaide, B.S., Tenn. A. and I. State College. *Technician, Health and Physical Education.*

*Kermit C. King, B.S., M.S., Kansas State Teachers College; Ed.D., University of California. *Professor of Education and Head of the Department of Secondary Education.*

Harry E. Lash, B.S., North Carolina A. and T. College; M.S., Tenn. A. and I. State College. *Instructor in Industrial Education and Engineering Drawing.*

Clyde M. Leathers, B.S., Langston University; M.A., University of Colorado; M.P.H., University of Michigan. *Assistant Professor of Biology.*

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

Audrey E. Lewis, B.S., M.S., University of Illinois. *Instructor in Health and Physical Education.*

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 and Coordinator of the Curriculum in Music Education.*

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

Shannon D. Little, B.S., LeMoyne College; B.S., M.S., Tenn. A. and I. State College. *Associate Professor of Health and Physical Education.*

Edna W. Lockert, A.B., Spellman College; M.S., University of Wisconsin. *Instructor in Psychology.*

Neal McAlpin, B.S., Tenn. A. and I. State College; M.S., University of Wisconsin. *Assistant Professor of Horticulture.*

Mark H. McCann, B.S., M.S., Tenn. A and I. State College. *Instructor in Economics.*

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

Ruth A. McDowell, B.S., Princess Anne College; M.Ed., Pennsylvania State College. *Instructor in Child Development.*

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

Cathryn B. McKinney, B.S., Tenn. A. and I. State College. *Technician, Clothing.*

Ethel L. McLendon, B.A., North Carolina College; M.S., Tenn. A. and I. State University. *Instructor in Sociology.*

J. B. McLendon, B.S., Kansas University; M.S., University of Iowa. *Associate Professor of Health and Physical Education.*

L. Winter McKissack, Registered Architect, A.B., Fisk University; B.S. in Architectural Engineering, Howard University. *Part-time Instructor in Architectural Engineering.*

William DeBerry McKissack, Bachelor of Architecture, Howard University. *Part-time Instructor in Architectural Engineering.*

*William C. McNeill, Jr., Registered Civil Engineer; B.S. in Civil Engineering, University of Pennsylvania. *Professor of Civil Engineering.*

Miriam McTeer, B.S., Bennett College; M.S., Ph.D., University of Wisconsin. *Professor and Head of the Department of Home Economics and Coordinator of the Curriculum in Foods and Nutrition.*

Richard L. Mack, B.S., North Carolina College at Durham; M.S., Kansas State College. *Assistant Professor in Health and Physical Education.*

Charity M. Mance, B.A., Howard University; M.A., University of Michigan; Ph.D., New York University. *Professor of Education and Psychology, and Consultant on In-Service Teacher Education.*

Robert F. Manuel, B.S., Tenn. A.and I. State College. *Technician, Masonry.*

*Catherine A. Maryland, B.S., Tenn. A. and I. State College; M.A., Ohio State University. *Instructor in Science Education.*

Gloria T. Massie, B.A., Fisk University; M.S., Oklahoma A. and M. University. *Instructor in Psychology.*

Gordon H. Moore, *Technician, Industrial Education and in Charge of Plumbing Shop.*

Essie L. Mott, B.S., Tenn. A. and I. State College; M.S., Columbia University. *Instructor in Business Education.*

Roland Norman, B.S., M.S., Ph.D., Cornell University. *Associate Professor and Head of the Department of Animal Science.*

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

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

James A. Parsons, Registered Metallurgical Engineer; E. E. Renssellaer Polytechnic Institute, D.Sc. Wilberforce University. *Professor of Metallurgical Engineering and Chairman of the School of Engineering.*

Rachel Patillo, A.B., M.S., Tenn. A. and I. State College. *Associate Professor of Sociology and Adviser to Veterans.*

Jasper Patton, B.Mus., M.Mus., Minneapolis School of Music. *Instructor in Music.*

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

Jasa P. Pennington, A.B., Fisk University; M.S. in Library Science, Western Reserve University. *Instructor in Library Service.*

Lee H. Pennington, B.A., Fisk University; M.S., University of Minnesota. *Instructor in Mathematics.*

Loretta M. Perry, B.S., Tenn. A. and I. State University. *Instructor in Piano.*

Harold L. Phelps, B.S., M.S., Tenn. A. and I. State University. *Instructor in Psychology.*

M. Clay Pinkston, B.S., Tenn. A. and I. State College; M.Ed., Wayne University; Ed.D., New York University. *Associate Professor and Head of the Department of Business Education.*

Gilbert K. Pleasant, B.S., West Virginia State College; M.Ed., University of Cincinnati. *Assistant Professor of Industrial Education.*

Kathleen H. Poag, B.S., Ohio State University; M.S., Tenn. A. and I. State College. *Associate Professor of Sociology.*

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.*

Ruth M. Powell, A.B., Johnson C. Smith University; M.S., Tenn. A. and I. State University. *Instructor in Education.*

Rubye M. Prigmore, B.S., M.S., Tenn. A. and I. State College. *Instructor in Chemistry.*

William Purvis, Staff Sergeant, U. S. Air Force. *Instructor in Air Science.*

Lillie B. Redmond, B.S., M.S., Tenn. A. and I. State College. *Instructor in Home Management.*

Marylouise Ritter, B.S., M.S., Tenn. A and I. State College. *Instructor in Home Furnishings.*

Charles E. Rochelle, B.A., M.A., Indiana State Teachers College; M.S., University of Indiana; Ed.D., University of California. *Consultant in Education and Professor of Education (Summer.)*

Camille Robinson, B.S., M.S., Tenn. A. and I. State University. *Instructor in Business Education.*

Nora L. Roy, A.B., Ohio State University; M.A., Tenn. A. and I. State College. *Instructor in Sociology and Social Administration.*

Eugene L. Runyon, B.S., M.S., Western Reserve University. *Professor of Psychology.*

Otis C. Russell, Captain, U. S. Air Force. *Assistant Professor of Air Science.*

Andrew Ryal, B.S., M.S., Tenn. A. and I. State University. *Instructor in Industrial Education.*

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 and Coordinator of the Curriculum in Aviation Education.*

Frances A. Sanders, B.A., Spelman College; M.A., Columbia University. *Professor of Elementary Education.*

Annie G. H. Sasser, B.S., Shaw University; M.S., Prairie View College. *Associate Professor of Mathematics; Director of Placement Bureau; Coordinator of Student Activities.*

Earl L. Sasser, B.S., Shaw University; M.A., Ph.D., Cornell University. *Professor of English.*

Scott Saunders, B.S., M.S., Tenn. A. and I. State University. *Instructor in Animal Husbandry.*

Horace C. Savage, B.S., M.A., New York University. *Assistant Professor of History.*

Granville Sawyer, A.B., Tenn. A. and I. State College; M.A., Ph.D. University of Southern California. *Professor of Communications and Director of Speech Clinic.*

Maxine Sawyer, B.S., Huston-Tillotson College. *Technician.*

Edward L. Schenck, A.B., Delaware State College. Captain, U. S. Air Force. *Assistant Professor of Air Science.*

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

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

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

Doris E. Simmons, B.S., M.S., Tenn. A. and I. State University. *Instructor in Chemistry.*

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

Frederick D. Smith, B.S., Prairie View State College; M.S., D.V.M., Michigan State College. *Professor of Animal Husbandry and Coordinator of Technical Agriculture.*

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

Major F. Spaulding, B.S.A., North Carolina A. and T. College; B.S., M.S., Cornell University; Ph.D., Massachusetts State College. *Professor and Head of the Department of Agronomy.*

Preston E. Stewart, B.S., South Carolina State College; M.S., Tennessee A. and I. State College. *Associate Professor of Industrial Education and Coordinator of the Curriculum in Vocational Technical Training.*

William D. Stinson, B.S., Tenn. A. and I. State College; M.A., New York University. *Instructor in Business Education.*

Marie B. Strange, American Conservatory of Music, *Technician, Piano.*

Walter F. Stuart, Registered Mechanical Engineer, B.S. in Aeronautical Engineering, Curtis-Wright Aeronautical Institute. *Part-time Instructor in Mechanical Engineering.*

Harry W. Taylor, B.S., Tuskegee Institute; M.Ed., Wayne University. *Instructor in Industrial Education.*

Henry L. Taylor, B.S., M.S., Tenn. A and I. State College; Ph.D., Cornell University. *Associate Professor; Head of the Department of Agricultural Education and Agricultural Economics; Assistant Director of Division of Agriculture.*

Wilhelmena R. Taylor, B.S., Hampton Institute; M.A., New York University. *Assistant Professor of Music.*

Cass F. L. Teague, B.S., M.S., Tenn. A. and I. State College. *Assistant Professor of Business Administration.*

Helen N. Teague, B.S., Kentucky State College; M.S., Indiana University. *Instructor in Secondary Education.*

Edward Temple, B.S., M.S., Tenn. A. and I. State University. *Instructor in Social Administration.*

John Thomas, B.A., Morris Brown College; M.D., Meharry Medical College. *Part-time Instructor in Health and Physical Education.*

Albert A. Thompson, A.B., Johnson C. Smith University; S.T.M., Ph.D., Harvard University. *Professor and Head of the Department of Social Sciences and Coordinator of the Curricula in Sociology and Social Administration.*

Frances E. Thompson, B.S.A., Massachusetts Art School; M.A., Harvard University; Foreign Study, University of Prague, Czechoslovakia. *Professor and Coordinator of the Curriculum in Art Education.*

Early J. Thornton, B.S., Tuskegee Institute; M.S., Massachusetts State College. *Professor and Coordinator of the Curriculum in Poultry Husbandry.*

Charlie F. Tillman, A.B., Fisk University; M.A., Columbia University. *Assistant Professor of Elementary Education.*

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

Myron B. Towns, A.B., Atlanta University; M.S., Ph.D., University of Michigan. *Professor and Head of the Department of Chemistry.*

Carr A. Treherne, A.B., Lincoln University (Pa.); M.D., Meharry Medical College. *Part-time Instructor in Health and Physical Education and Director of Student Health Services.*

George B. Turman, *Technician, Aviation.*

Alfred C. Tyler, A.B., Morehouse College; M.A., Columbia University. *Assistant Professor of Science Education.*

Mazie O. Tyson, B.S., Howard University; M.A., Ohio State University. *Associate Professor and Coordinator of the Curriculum in Geography.*

Queen L. Washington, R.N., *Head Nurse and Part-time Instructor in Health and Physical Education.*

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

Will A. Webster, B.A., Howard University; M.A., Ohio State University. *Instructor in Health and Physical Education.*

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

Fred Westbrook, B.S., M.S., Tenn. A. and I. State College; Ph.D., Michigan State College. *Associate Professor of Agronomy.*

Homer Wheaton, B.S., M.S., Tenn. A. and I. State University. *Instructor in Animal Husbandry and Manager of Beef Cattle.*

Samuel Whitmon, B.S., M.S., Tenn. A. and I. State University. *Instructor in Biology.*

Eddie Williams, B.S., M.S., Tennessee A. and I. State College. *Assistant Professor of Animal Husbandry.*

*Hazel B. Williams, A.B., M.A., University of Kansas; M.A., Columbia University; Ph.D., New York University. *Professor of English.*

Malcolm D. Williams, B.S., Hampton Institute; M.A., Ed.D., Columbia University. *Professor of Education; Chairman of the School of Education; Head of the Department of Administration, Curriculum, and Instruction.*

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

Rosa L. Williams, B.A., Virginia State College; M.A., Teachers College, Columbia University. *Instructor in English.*

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

Henderson K. Wood, B.A., Ohio Wesleyan University; M.A., Fisk University; Ph.D., Indiana University. *Professor and Head of the Department of Biology.*

Theodore R. Wood, B.S., Tenn. A. and I. State College; M.S., Michigan State College. *Assistant Professor of Animal Husbandry and Manager of Dairy Cattle.*

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

Roberta Peddy Wright, B.S., Winston-Salem Teachers College; M.A., University of Michigan. *Associate Professor of Education and Coordinator of the Curriculum in Special Education.*

Mary A. Yancey, B.S., M.S., Tenn. A. and I. State University. *Instructor in Mathematics.*

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*On Leave

THE UNIVERSITY

Historical Statement

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

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

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

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

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

Purposes of the University

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

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

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

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

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

The Campus

The University is located in northwest Nashville, with the central campus on Centennial Boulevard at 35th Avenue. Its campus, farm lands and pastures occupy 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 AND EQUIPMENT

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

1949

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

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

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

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

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

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

The Jane E. Elliott Building is located west of the University library on the north campus. The building contains laboratories, lecture rooms, work rooms and studios for the fine arts and crafts, home economics, business education and administration, music, nursery school, and the offices of the Bureau of Public Relations.

The W. W. Lawson Agricultural Building, constructed 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, biochemistry laboratories, stock pavillions, farm shops, animal shelters, a modern poultry plant, a modern walking horse barn, agronomy experimental plots, and a greenhouse.

The Frank A. Young Poultry Plant, completed in 1951 at the cost of $104,000, is located on the southwest side of the main campus. It consists of eighteen major and minor buildings, with ranges for various kinds of poultry, including water fowl. The Plant has the most modern equipment for teaching and experimental work in incubation, brooding, laying, nutrition, genetics, disease diagnosis and control, and poultry grading and marketing.

The Henry Arthur Kean Hall, completed in 1951 at the cost of 11,500,000, is located on the south side of the campus at Centennial Boulevard and 33rd Avenue. This modern structure contains a gymnasium with a seating capacity of 4,500; health and physical education classrooms and laboratories; staff offices; and facilities for indoor intramural sports, staff and student recreation, and physical therapy.

The William J. Hale Field House and Stadium are located on the northeast campus at Centennial Boulevard and 33rd Avenue. The Field House is a modern stone structure that contains accommodations for visiting athletes and offices and classrooms for the Air Force ROTC unit. Recent improvements on the Stadium include lights for night games, increased seating capacity, and construction of a new turf for several kinds of athletic events including football, baseball, and major and minor track sports.

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

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

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

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

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

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

Women's Residence Hall, completed 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.

Men's Residence Hall, located on the southeast side of the campus, was completed in 1957. This residence hall is a three-story building providing conveniences for modern living.

Veterans' Halls consist of two units of temporary buildings for the housing of men.

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

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

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

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

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

ORGANIZATION OF INSTRUCTIONAL SERVICES OF THE UNIVERSITY

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

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

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

BUSINESS: Business Administration, Business Education, and Economics.

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

ENGINEERING: Architectural Engineering, Civil Engineering, Electrical Engineering, Mechanical Engineering, Industrial Education, and Aviation Education.

HOME ECONOMICS: Foods and Nutrition, Home Economics Education, and Textiles and Clothing.

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

Secondary education courses for meeting certication requirements are offered for majors in all fields of the arts and sciences, and several specialized branches of education.

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

The Graduate Program

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

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 orientation, adjustment, and growth involves the supplemental and coordinate planning of numerous university

officials, faculty and staff members; among them are the Director of Student Personnel and Guidance, the Dean of Men, the Dean of Women, the Coordinator of Student Activities, the Chairmen of the Schools and Heads of Departments, the Chairman of Admissions, the Director of Student Health Services, Coordinator of Housing, Directors of Residence Halls, Supervisor of City Student Housing, supporting counselors, such as major advisers, advisers to foreign students; chairmen and directors of university agencies and organizations affecting the welfare of students, committees such as the Guidance Committee, the Freshman Week 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 Chairman of Admissions on the basis of the student's choice of school, to the chairman of that school, who refers the student to the head of the major department for guidance. The department head assigns every major student 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 elect. 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, extra-class activities, and residence hall and home relationships.

In solving specific problems, students are assisted 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, and study, 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 conferences with advisers and counselors, mental ability, aptitude and achievement tests, interest inventories, registration and assignment to classes, health examinations, lectures and discussions on subjects of importance to new students.

Freshman Placement Examinations

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

The student's adviser uses the profile chart as a basis for educational guidance. Students who show deficiencies in the above subject areas are given an opportunity to remove the deficiency. The English department and the mathematics department offer non-credit courses for freshman students who show a deficiency in English or mathematics.

PSYCHO-EDUCATIONAL CLINIC

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

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

College Level: Educational guidance based on mental testing, aptitude testing, and interest and personality inventories. Diagnosis of academic failure on the college level and counseling relative to removing the cause of failure.

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

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

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 communicative skills.

The Clinic is open to all students of the University. In addition to remedial work for students who may be deficient in the communicative skills, much of the work of the Clinic is devoted to students who need additional experience in these skills for general improvement. A part of the writing program is designed for seniors and graduate students who require special counsel concerning research reporting.

The Clinic offers four programs: Reading Improvement, Writing Improvement, Speaking and Listening, and Personal Counseling. Students may remain in the program as long as they show a need for improvement, and respond favorably to corrective measures.

Students may register for the Clinic at the time of regular registration, or they may be referred by a member of the University faculty at any time during the school year.

THE STUDENT HANDBOOK

THE STUDENT HANDBOOK is a compact reference book which includes the privileges and responsibilities of a student at the Tennessee Agricultural and Industrial State University, the opportunities for development through curricular and extra-curricular activities, and the goals for successful community living-cooperation, loyalty, and effective expression through service.

CRITERIA FOR COMPETENCE IN LIVING AT THE UNIVERSITY

Intellectual aspirations as evidenced in scholarship, a genuine desire to discover and reveal the whole truth, curiosity, and the drive that carries one beyond course requirements, use of the scientific approach in work and thinking, effective study skills and habits, and creative performance.

Cultural orientation as evidenced in the use of leisure time in the arts, such as music, concerts, writing, dramatics, painting; athletics and sports; other student activities, such as management, forensics, publications, or social activities; social-service and church work; hobbies.

Practical sufficiency as evidenced in ability to handle personal or group financial problems; ability to obtain and keep a job, if needed; environmental adjustment in the college and community; effective distribution of time.

Physical fitness as evidenced in health habits and participation in suitable sports.

Emotional balance as evidenced in general factors such as self-control, self-confidence, courage, sense of humor, independence, family relationships, adjustment with other students, religious comprehension.

Social fitness as evidenced in ability to keep friends, to respect others, poise and manner, social accomplishments, taste in dress, grooming.

Sensitivity to social problems as evidenced in concern about campus issues; awareness of contemporary social, economic, and political problems and opinions; ability to criticize intelligently; willingness to assume responsibility of citizenship, to maintain rules and regulations governing university life; and to make personal sacrifices.

Character traits as evidenced in such attributes as honesty and integrity, temperance, responsibility, and initiative.

Philosophy of life, or personal pattern of goals, as evidenced in vocation planning, reasons for attending college, religious attitudes, tolerance, ethical standards and ideals.

LIVING ACCOMMODATIONS

On the Campus

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

Housing facilities for women are provided in Hale Hall, Wilson Hall, Edna R. Hankal Hall and East Hall and for men in the new men's residence hall, Veterans Halls and College Hill Men's Halls.

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 rooms more comfortable and attractive.

Off the Campus

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

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

CAFETERIA

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

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 each bulletin board of each residence hall.

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, medical and dental clinics. The Student Health Center offers twenty-four hour service with facilities for hospitalization of students confined by illness. These services are provided by a staff of physicians, and registered nurses.

RECREATION

Recreation facilities include the lake areas on the southwest campus, a recreation center, indoor and outdoor swimming pools, an athletic field equipped for night activities, a gymnasium, a bridle path, Tennessee walking horses and American saddle horses.

In addition to the above facilities, the new health and physical education building includes 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 courts, five volleyball courts, and a tennis court.

STUDENT ORGANIZATIONS AND ACTIVITIES

There are more than eighty extra-curricular organizations at the University. Quarterly cultural and social events are sponsored particularly by the Lyceum and Social Committees, the Student Council, and the Departments of Speech and Drama and Music. The most celebrated artists, speakers, concert, and orchestral leaders and outstanding 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, and complements the learning, through curricular offerings and residence life, of attitudes, appreciations, and modes of behavior, as well as information and skills.

Student Government

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

Student Publications

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

THE TENNESSEAN is the student annual.

Athletic Organizations

Varsity and intramural athletics are promoted. (See University Athletics under the 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

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

Departmental Organizations

Departmental organizations at the university include:

Air Force R. O. T. C. Rifle Team.
Angels' Flight. An organization of female students atthe university who promote interest in the activities of the Air Force ROTC Program.
American Society of Agronomy. For majors in Agriculture.
American Chemical Society, Student Affiliate Chapter. For majors in Chemistry.
Association for Childhood Education International. For departmental majors.
Biology Club. For departmental majors.
Elementary Education Club. For departmental majors.
English Club. For departmental majors.
Flash Writers (Transcription Club). For advanced shorthand students in Business Education.
Future Business Leaders of America. For majors in Business.
Future Teachers of America. For majors in Education.
Hepermots Club. For departmental majors and minors in Health, Physical Education and Recreation.
History Study Club. For majors in History.
Home Economics Club. For departmental majors.
Homemaking Institute. For majors in Foods and Nutrition.
Industrial Education Club. For departmental majors.
Institute of Radio Engineers—Student Branch. For majors in Electrical Engineering.
International Relations Club. For students of international affairs.
Laicos S. Ronoh Honor Society. For honor students in Political and Social Science.
Les Amis De La France. For majors in French.
Library Service Club. For students in Library Service.
Literary Guild. For students of English and Literature.
Los Buenos Vecinos. For majors in Spanish.
Mathematics Club. For departmental majors and minors.
Music Educators National Conference. Student Chapter No. 381. For departmental majors and minors.
New Farmers of America. Tennessee Collegiate Chapter. For majors in Agriculture.
Social Science Club. For departmental majors.
Psychology Club. For departmental majors.
Speech and Drama Club. For departmental majors.
Tennessee State University Aero-Tigers. For students of Aviation.
Tennessee State University Technical Society. For majors in Engineering.

Departmental Publications

The departmental local student publications include:

The Bio-Log, published monthly by the Biology Club.
The Test-Tube, published monthly by the Chemistry Club.
Weekly Bulletin, published by the AFROTC.

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.

The Inter-Fraternity Council

The Inter-Fraternity Council exists at the University to promote greater understanding and cooperation among the fraternities and sororities; to serve as an instrument through which the fraternities and sororities and the general administration of the University may cooperate in aiding the organizations 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 major governing bodies of the University, such regulations as are deemed necessary for the common interest of all fraternities and sororities.

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, Newman Club, Methodist Student Movement, Inter-Faith Council, Sunday School, Quiet Hour, Sunday Service, Westminster Club, and Religious Emphasis Week.

Residence Hall Organizations

There are student residence organizations in each Hall. The 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 at the University include:

The Children's Theatre.
The Choral Speaking Group. Open to all students.
Laboratory Theatre. Open to all students.
The Varsity Debaters. Open to all students.
Tennessee State Players Guild. Open to all students.
Youth Theatre. Open to all students.

Musical Organizations

Musical organizations at the University include:

University Marching and Concert Band. Open to students of Music.
University Choir. For majors in Music. Open to others.
Men's Glee Club. For majors in Music.
Meistersingers. For majors in Music.

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.

Eligible students may apply for work-aid at the Office of Student Work-Aid.

Students who are interested in obtaining part-time employment in the city may make inquiries at the Office of the Bursar, A-101.

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

NATIONAL HONOR SOCIETIES

The National honor societies at the University include:

Alpha Kappa Mu Honor Society, Phi Beta Tau Chapter. An organization open to all juniors and seniors who maintain a cumulative average of 3.3 or above. Transfer students are eligible after 3 quarters of residence and after earning a minimum of 45 quarter hours.

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

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

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

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

Phi Mu Alpha Sinfonia, Eta Xi Chapter. An organization for outstanding students in the Department of Music.

Pi Omega Pi Fraternity, Eta Psi Chapter. An honorary business fraternity for outstanding students who plan to teach business subjects.

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

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

Theta Alpha Phi, Tennessee Epsilon Chapter. An honor dramatic fraternity for students in speech and drama and related arts.

HONORS, SCHOLARSHIPS AND AWARDS

Air Force Awards are presented annually to distinguished cadets.

Alumni Scholarship Awards and Gifts annually are made 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 and Department Club Awards are presented annually by Business Education, Elementary 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, Phi Beta Sigma Fraternity, and Sigma Gamma Rho Sorority.

Honor Roll. Students who earn a quality point average of 3.25 (B+) or above in all subjects and who pursue a minimum of 12 quarter credit hours in the regular curriculum shall be placed on the University Honor Roll for that quarter.

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

The National Honor Societies annually present awards 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 annually presented include the G. P. 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 annually are presented awards.

University Counselors who are graduating seniors and who have served at least two years as University Counselor 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 and who show promise of future usefulness.

PLACEMENT BUREAU

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

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

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

GENERAL ALUMNI ASSOCIATION

The University has a large and loyal alumni association, the objectives of which are to further the best interests of students, alumni, and the University. The General Alumni Association and local alumni clubs located throughout the country actively engage in projects designed to assist students and add prestige to the University.

Serving as a liaison between the University and the alumni, the association motivates the alumni to bring honor through achievement and high ideals to themselves and their alma mater, recognizes alumni progress, provides a medium through which alumni contact can be maintained, and brings about a closer feeling between the University and the alumni.

The General Alumni Association meets during the Thanksgiving and commencement seasons.

PUBLIC RELATIONS

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

GENERAL INFORMATION AND REQUIREMENTS

Quarterly Fees

Tuition:

Residents of Tennessee	$00.00
Non-Residents of Tennessee	35.00
Composite Fee	40.00
Board (in cafeteria)	75.60
Room (in dormitories)	
New dormitories	45.00
All other dormitories	37.50

Laboratory fees are stated in the course descriptions. To determine the total laboratory fees that must be paid each quarter, add fees stated for each laboratory course pursued. Freshmen engineering students should add $24.50 for drawing instruments.

Payment of Fees

Regular fees, including tuition, board and room, maintenance, and laboratory are paid on the quarterly or term basis. These fees must be paid at the time of registration in the fall, winter, spring, and each summer term. Students who do not live on the campus must pay full $40.00.

Exceptions to this regulation are: A Tennessee student who rooms in one of the new dormitories and boards in the cafeteria, may make a down payment of $110.60, with monthly payments of $25. The total amount for this student is $160.60 (per quarter). An out-of-state student who rooms in one of the new dormitories and boards in the cafeteria may make a down payment of $135.60, with monthly payments of $30.00. The total amount for this student is $195.60 (per quarter).

A Tennessee student who rooms in other dormitories and boards in the cafeteria may make a down payment of $103.10, with monthly payments of $25. The total amount for this student is $153.10 (per quarter). An out-of-state student who rooms in other dormitories and boards in the cafeteria may make a down payment of $128.10, with monthly payments of $30. The total amount for this student is $188.10 (per quarter).

A Tennessee city student who wishes to board in the cafeteria and to make partial payments of his school fees, may receive credit up to $50 per quarter, which must be paid in two equal monthly installments. An out-of-state city student who wishes to board in the cafeteria and make partial payments of his school fees, may receive credit up to $60 per quarter, which must be paid in two equal monthly installments.

Sending of Monies

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 Bursar, Tennessee A. and I. State University.

Personal checks are not accepted in the payment of regular fees, room reservation fees, and transcript fees. If the check is certified then it becomes acceptable along with other certified remittances (American Express, United States Postal Money, Cashiers' Check, Bank Money Order and Travelers Cheque).

ROOM RESERVATIONS

A $10 room reservation fee is required. Room reservation fees are not refundable. This fee is forfeited if the room is not taken; it is applied on expenses if the room is taken. The room reservation fee should be paid only after the applicant has been officially notified of his acceptance by the Office of Admissions, indicating that a room has been reserved.

EXPLANATION OF FEES

Tuition Fees: Students who are residents of Tennessee are not required to pay a tuition fee. Students who are not residents of Tennessee are required to pay a tuition fee of $35 per quarter.

Maintenance Fees: All students are required to pay $40 per quarter for maintenance fees.

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

Special Fees

Transcript Fees: A student may secure an official transcript of his record by the payment of a fee of $1.00. 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 filed in by the Office of Admissions require the usual transcript fee of $1.00.

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

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

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

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

Class Absences before and after Holidays: A penalty of $5.00 is charged for non-attendance at the last meeting of any class before a holiday or the first meeting of any class after a holiday.

Dropping a Course: A fee of $1.00 is charged for each course dropped later than the Saturday following the close of "Late Registration."

DEGREES OFFERED

The University offers two undergraduate degrees, namely: Bachelor of Science and Bachelor of Arts and two graduate degrees, namely: Master of Science and Master of Arts.

ADMISSION

Procedures

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

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.
4. The official transcript of all high school credits and a small photograph must be filed in the Office of Admissions before the applicant may be officially admitted to the freshman class; and all high school and college transcripts must be filed for admission to advanced standing.
5. If a period of more than ninety days (one regular quarter) has elapsed between graduation from high school and the date of entering the University, the applicant will be required to submit a notarized statement as to whether or not he attended another college or university during this time.

6. A college student whose education has been interrupted for more than ninety days (one regular quarter) must present a notarized statement as to whether or not he has attended another college or university during this time.
7. All required data must be filed in the Office of Admissions for consideration for admission.
8. All students, except those who seek admission with advanced standing, must take an aptitude test, the English placement test, a health examination, and the special tests required by the department in which the major is to be pursued.
9. All new students must attend the orientation period at the University one week prior to official registration unless given special permission by the Executive Committee of the Office of Admissions.

REQUIREMENT FOR ADMISSION

Applicants meeting the following requirements are eligible for admission by the following methods:

Admission by Transcript

Applicants who present a transcript of credits showing graduation from an approved high school or twelve units from a senior high school are admitted Students who do not present one unit in American History will be required to enroll for the course.

Admission by High School Equivalency Examination

Veterans of the armed services who entered service before high school graduation, and civilians 21 years of age of older, who may have discontinued high school before graduation may be admitted to college by taking the High School Equivalency Examination, and earning a score that qualifies the student for a high school diploma in the State of Tennessee.

Admission with Advanced Standing from Accredited Institutions

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

1. An official record of transcripts from all high schools, colleges, or universities previously attended must be placed on file in the Office of Admissions, whether or not the applicant wishes to receive credit for such work.
2. The courses presented for advanced credits must be substantially equivalent to those offered at Tennessee A. and I. State University.
3. A student who has failed in his work at another institution and is not entitled to continue there will not be admitted to the University.
4. The applicant must have been cleared of all financial obligations and granted honorable dismissal from the last institution attended.
5. Students who have attended other colleges or universities cannot be admitted unless they present a cumulative scholastic grade average of "C" based on the grading system of Tennessee A. and I. State University.
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.

Admission with Advanced Standing from Non-Accredited Colleges

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

A. Admitted on probation for the first 48 hours credit.

B. Credit for work done prior to entering Tennessee A. and I. State University be granted as:

1. Full credit if work at Tennessee A. and I. State University is 3.00 or above.
2. Three-fourths credit if work at Tennessee A. and I. State University is below 3.00 or not less than 2.50.
3. Half credit if work at Tennessee A. and I. State University is below 2.50 but not less than 2.00.
4. No credit if work at Tennessee A. and I. State University is below 2.00.

Admission with Special Adult Student Standing

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

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

Admission to the Graduate School

Requirements for admission to the Graduate School at the University are outlined on page 43.

Readmission to the University

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

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

A student whose attendance at the University has been interrupted one quarter or more while on scholarship probation (see page 37) must in addition to making application for readmission, satisfy the Executive Committee of the Office 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.

A student who has been dropped from the University for poor scholarship may not be readmitted to the University.

CLASSIFICATION OF STUDENTS

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

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

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

Juniors: those who have completed more than 96 quarter hours but less than 144 quarter hours and have an average of "C" (2.00) in all work taken.

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

Specials: (a) those who meet entrance requirements and who wish to pursure particular studies without reference to graduation, may be admitted with the permission of the Executive Committee of the Office of Admissions. (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.

Special students must meet satisfactorily all entrance requirements before they can apply for a diploma or degree.

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

Vocational Technical Training: those who are pursuing a technical terminal curriculum without reference to qualification for a degree.

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

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

REGISTRATION

The Regular Registration Period

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

Late Registration

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

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

Resident Address 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 without delay. Forms for the change of address or a change of name may be obtained from the Office of Admissions.

Physical Examination

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

Completion of Registration

The student is officially registered when the following three requirements have been fulfilled:

1. All forms have been filled out and stamped by the final checker.
2. All fees have been paid; the Student Assessment Card and Class Schedule Card have been returned to the student; and the Class Schedule Card stamped by the Bursar.
3. The physical examination has been completed.

Class Loads

Normal and Minimum Class Loads: The normal class load for each quarter is one-twelfth (1/12) of the total number of quarter hours required for graduation in any particular curriculum and the minimum class load is 12.0 quarter hours. One and a third quarter hours 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 Chairman of Admissions.

Probationary Student Class Loads: A student who incurs scholarship probation in any quarter (see page 37) will be allowed to carry a maximum of 14 or a minimum of 12 quarter hours in subsequent quarters until the probation is removed.

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

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

The student is permitted with proper execution of the drop form to drop a six weeks' course within the first two weeks of the course.

A fee of $1.00 is charged fo reach course dropped later than the Saturday following the close of "Late Registration."

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

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 which has been stamped by the Bursar.

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 Chairman 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.

Anditors 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.

Class Attendance

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

A student who fails to attend class regularly and on time may be asked to discontinue the course and receive a grade of "Failure," or, may receive a penalty grade for non-attendance and tardiness, regardless of the quality of performance while in attendance.

ABSENCES

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

The student who absents himself from class is under obligation to perform all requirements of each course in which he is registered, regardless of the cause or causes of absences.

Any student knowing he must be absent from class during final examination will notify his instructor and the Office of the Vice-President. When a student has absented himself from class the total number of times the class meets per week, he is to be reported to the Vice-President.

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 Vice-President of the University.

Class Absences before and after Holidays

A student who fails to attend the last meeting of each class before a holiday or the first meeting of each class following a holiday shall incur three absences for each class not attended, and will be assessed a penalty of $5.00 for one or more class absences incurred during the day before a holiday, and $5.00 for one or more class absences incurred during the day after a holiday.

Tardiness and Leaving Classes

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

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

GRADING SYSTEM

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

"A" (Excellent)	4 quality points	per quarter hour
"B" (Good)	3 quality points	per quarter hour
"C" (Average)	2 quality points	per quarter hour
"D" (Poor)	1 quality point	per quarter hour
"F" (Failure)	minus 1 quality point	per quarter hour
"I" (incomplete)	0 quality points	per quarter hour
"W" (Withdrawal)	0 quality points	per quarter hour
"S" (Satisfactory in non-credit courses)	0 quality points	per quarter hour
"U" (Unsatisfactory in non-credit courses)	0 quality points	per quarter hour

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

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

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

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

SCHOLARSHIP STANDARDS

All undergraduate students of the University are expected to maintain a minimum cumulative scholastic average of 2.00 quality points.

A minimum cumulative scholastic average of 2.00 is required for graduation in all bachelor's degree programs.

The following penalties for low scholarship are enforced at the end of each Spring quarter:

Warning: If at the end of the 1st or 2nd quarters the student falls below 2.00, he receives a letter of warning which also encourages him to improve his scholastic average.

Probation: If at the end of the 3rd quarter a student's scholastic average ranges between 1.00 and 1.99, he is placed on probation. If, after a student has been in the institution three quarters, his scholastic average falls below 2.00 he will be placed on probation. A student who is on scholastic probation will be limited to 12 to 14 quarter hours credit per quarter.

Suspension: If at the end of the 3rd quarter a student's average falls below 1.00, he is suspended. If at the end of the 6th quarter he does not have 48.0 quarter hours to his credit and his average is below 2.00, he is suspended. A student is suspended from the University for a period of 12 calendar months.

Dropped: A student who is suspended from the University because of poor scholarship and who is readmitted (after 12 months) must maintain a 2.00 scholastic average each quarter. Students who fail to maintain this quarterly average (2.00) will be dropped permanently from the University.

Graduate Students: Graduate students must maintain a minimum scholarship average of 3.00 quality points (B). (See Graduate School, p...)

Removal of Deficiency Grades

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

1. Inquire in the Office of Admissions regarding the course in which the grade of "I" has been awarded.
2. Pay to the Bursar's Office the fee of $1.00.
3. Secure from the Office of Admissions 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 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).

EXAMINATIONS

Regular Examinations

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

Absence from Final Examination

Absence from the final examination will be indicated by a mark of (x). If the student's grades are of passing quality up to, but not including, the final examination, he shall receive a grade of "Incomplete" (I) for the course; if, however, the performance is of failing quality up to the final examination, a grade of "Failure" (F) will be awarded.

A senior who has received a grade of Incomplete in any subject, must remove the incomplete grade three weeks prior to commencement.

Issuance of Grades

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

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

The student may obtain a copy of his transcript by paying the required fee of $1.00.

Transcripts

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

Withdrawal from the University

To withdraw from the University, one must make application on forms provided by the Office of the Vice President.

REQUIREMENTS FOR A BACHELOR'S DEGREE

A bachelor's degree is conferred on a student who satisfactorily completes a curriculum in one of the schools. Each candidate for a bachelor's degree must meet the general requirements of the University:

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 Health and Physical Education. (This requirement is waived for veterans).
6. Nine quarter hours of English.
7. Nine quarter hours of American History for all students who do not present a year of history on their high school transcripts.
8. Nine quarter hours of Social Studies.
9. Two years of basic Air Force ROTC (for male students)
10. Any departmental requirements.
11. A Junior English Test.
12. A Senior Project.
13. 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 this University.
14. 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.

REQUIREMENTS FOR THE BACHELOR OF SCIENCE DEGREE WITH TEACHING CERTIFICATE**

General Education Core (Both Elem. and Secondary)..... 60-66 qr. hrs.*
Professional Education Core
(Both Elementary and Secondary)..... 36 qr. hrs.
Area of Endorsement ..... 18-45 qr. hrs.
Other Hours..... To total the quarter hour required by the University and departmental requirements.

*Minimum quarter hours requirements.
**Home Economics Education and Agriculture Education excluded (course content and the curriculum are determined by the State Board of Vocational Education).

REQUIREMENTS FOR THE BACHELOR OF SCIENCE DEGREE WITHOUT TEACHING CERTIFICATE IN THE SCHOOLS OF EDUCATION AND ARTS AND SCIENCES

Liberal Education Core..... 57 qr. hrs.
Major Field Core..... 36 qr. hrs.
Major Field Related Core..... ...Qr. Hrs. adjusted by the department
Elective Core..... Qr. Hrs. adjusted by the department

REQUIREMENTS FOR THE BACHELOR OF SCIENCE DEGREE WITHOUT TEACHING CERTIFICATE IN THE SCHOOL OF ENGINEERING

Two Year Common Curriculum..... 121 qr. hrs.
Engineering Major Curriculum..... Qr. Hrs. adjusted 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 as described on page 38, and (2) pursue the following liberal arts courses:

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

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

The Junior English Test

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

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

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

The Senior Project

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

Teacher Certification

Several curricula at the University leading to the bachelor's degree make provisions for the training of teachers in the major field of specialization. A student may waive certification requirement by submitting a signed affidavit that he does not wish to qualify for a certificate.

Degrees With Honors

The degree of Bachelor of Science or Bachelor of Arts with honors is awarded with distinction or with high distinction. To be graduated with distinction, the student must earn an average of at least 3.25. To be graduated with high distinction, the student's average must be not less than 3.50.

Application for Bachelor's Degree

1. A candidate for a degree must file with the Office of Admissions a "Senior Standing Form" six months prior to the date of graduation. This must be approved by the candidate's major adviser, departmental head, Chairman of the School, and the Chairman of Admissions.
2. Forms for an "Application for Diploma" may be obtained by request at the Office of Admissions and must be filed in triplicate in the Office of the Bursar after the signatures of the major adviser and Chairman of the School are obtained.
3. The diploma fee must be paid and all accounts cleared at least two months prior to the date of graduation.
4. A clearance from the Placement Bureau must be filed with the Office of Admissions two months prior to the date of graduation.

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 Insttitue by the President of Tennessee A. and I. State University. Therefore, persons who are interested in taking courses in Veterinary Medicine should write to President Walter S. Davis, Tennessee A. and I. State University.

Medical and Dental Training

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

State Scholarships

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

INFORMATION FOR VETERANS

Eligibility for Training

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

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

Admission

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

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

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

Payment of Bills and Fees

Regular fees, including tuition, board and room, maintenance, and supplies are paid by the veteran on the same basis as other students. These fees must be paid at the time of registration.

Class Load

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

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

Change of Program

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

Class Attendance and Decorum

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

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

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

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

SUMMER QUARTER

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

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

THE GRADUATE SCHOOL

HUBERT B. CROUCH, *Chairman*

Graduate instruction is offered at the University for the Master of Arts or the Master of Science degree in the several fields of learning listed below and described elsewhere in this catalog.

The Graduate School offers major curricula leading to the *Master of Science* degree in the fields of Agricultural Education, Agronomy, Animal Husbandry, Biology, Business Administration, Business Education, Chemistry, Educational Administration, Educational Guidance, Educational Psychology, Educational Supervision, Elementary Education, Health, Physical Education and Recreation, History, Home Economics Education, Industrial Education, Mathematics, Music Education, Physics, Poultry Husbandry, Psychology, Science Education, Secondary Education, Sociology, Special Education, and Speech and Drama.

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

Minor programs only are offered in Biochemistry, Clothing and Textiles, Economics, Foods and Nutrition, and Geography.

Application

Applications for admission to the Graduate School should be addressed to the Chairman of Admissions, Tennessee A. and I. State University, Nashville, Tennessee. All college graduates who seek admission to the University, either in residence or in extension, must apply for admission to the Graduate School whether or not they plan to qualify for the master's degree.

Admission

Admission is granted to graduates of institutions which have requirements for the bachelor's degree essentially equal to those of Tennessee A. and I. State University.

Admission with *Regular Status* may be granted graduates of fully accredited institutions who have maintained a cumulative undergraduate average of at least 2.5 quality points (C plus). Students admitted with *Regular Status* must also satisfy all undergraduate course requirements of the graduate major department.

Admission with *Provisional Status* may be granted those who present a minimum cumulative undergraduate average of 2.0 quality points (C) but less than 2.5 quality points. Graduates of institutions which were not fully accredited at the time the bachelor's degree was awarded will be admitted with *Provisional Status.* All students admitted with *Provisional Status* must complete additional courses.

Admission with *Conditional Status* may be granted to those whose admission materials have not been completely processed at the time of registration. Such students are required to seek a change of status to *Regular* or *Provisional* within twenty-one days after the official beginning of the quarter.

Admission with *Special Status* may be granted college graduates who desire to study at the University without qualifying for the master's degree.

Credits earned at the University while the student is matriculated with *Special Status* will not at any time be counted toward graduate requirements for the master's degree.

Registration

Registration is conducted at the University at the beginning of each quarter during the regular academic year and at the beginning of each six-week term of the summer session. Graduate students may begin their studies at any registration period, provided they have met all prerequisites to the courses which they wish to pursue.

Only those students who have received an official letter of acceptance from the Chairman of Admissions of the University should report for registration. Those approved for late registration will be required to pay a late registration fee of $5.00. They must also assume full responsibility for all requirements of each course to which they are admitted.

Directions for registration may be found in the "Handbook of the Graduate School," and in the registration materials issued at the Office of Admissions of the University.

Class Loads

Graduate students may pursue a maximum class load of fifteen credit hours during a regular quarter. Those pursuing one or more laboratory courses may be allowed a maximum of seventeen, but not more than five courses may be allowed. A maximum of nine quarter credit hours may be pursued in a six-week term of the summer session. Those pursuing one or more laboratory courses may be allowed a maximum of ten credit hours in a six-week term. But the total number of credit hours for two consecutive six-week terms may not exceed the numbers of hours allowed for a regular quarter's work.

Class Attendance

Regular class attendance is required of all students. Those who incur excessive absences may, upon the recommendation of the teacher, be awarded grade penalties, or be required to withdraw for such courses. Class absences immediately before and after holidays will incur special penalties. (See page 36 on *"Class Absences Before and After Holiday").*

Change of Class Program

Any changes of the approved class program will require the written approval of the teachers of the courses involved, the Major Adviser, and the Chairman of Admissions. Such changes must be executed on the official forms which may be obtained in the Office of Admissions.

Dropping Courses

During a regular quarter, a course may be dropped within four weeks after the first meeting of the class. A fee of $1.00 will be charged for dropping a course after the first two-week period that the class is in session.

Courses conducted on the six-week term basis may be dropped for the first two weeks after the first meeting of the class. A fee of $1.00 will be charged for dropping a course after the first week for a six-week term.

After the course drop periods have expired, a student is responsible for completing the requirements of each course in which he has registered; unless the student has been granted official approval for withdrawing from the University.

Withdrawal from the University

A student may officially withdraw from the University only with the written approval of the Vice President.

Withdrawal from the University for any reason must be approved before the student takes leave. A student who ceases class attendance or who fails to take the final examination without official approval will be awarded grades of "F" at the end of the quarter.

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

Re-entrance

Students who have once been enrolled in the Graduate School and who were not enrolled at the end of the preceding quarter must apply and be approved for

re-entrance. Those who have been required by the University to withdraw for any reason, may not be readmitted except by action of the Executive Committee of the Graduate School.

Degree Requirements

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

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

Requirements for Regular Students. One academic year (three quarters) of residence study and forty-five graduate credit hours are required for the master's degree. However, only those students whose course and research performance prove to be substantially above the minimum scholarship standards should expect to complete all requirements within three quarters. Several departments normally require more than one year of study in residence in order to allow sufficient time for completing the research and thesis writing.

Requirements for Students with Deficiencies. Students admitted with Provisional Status because of a low undergraduate cumulative average may pursue sufficient numbers of undergraduate courses to raise the average to the required 2.5 quality points and complete the residence and credit hour requirements for regular graduate students; or they may complete forty-eight graduate credit hours with an average of at least 3.5 quality points in three and one-half quarters of residence study, or sixty graduate credit hours with an average of at least 3.0 quality points but less than 3.5 in four and one-half quarters of residence study.

Students admitted with *Provisional Status* because the institution from which the bachelor's degree was awarded was not fully accredited may elect one of the following plans: (1) Complete one quarter (15 to 18 credit hours) of undergraduate study in prescribed courses by the major department with a minimum average of 3.0 quality points. The student may then complete a minimum of forty-five graduate credit hours. Or, (2) complete a graduate program of at least forty-eight (48) credit hours and three and one-half quarters of study in residence, provided an average of 3.5 quality points is maintained during the first two quarters (a minimum of 24 credit hours) of study in residence at the University. Or, (3) complete a graduate program of at least sixty credit hours and four and one-half full quarters of study in residence, provided that an average of at least 3.0 quality points is maintained.

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

A minimum of thirty-six (36) undergraduate quarter credit hours must be presented in the field of the graduate major. These courses must also be the same or equivalent to the current undergraduate major requirements of the department in which the graduate major field is selected. Some dpartments require more than the minimum thirty-six credit hours for an undergraduate major.

Major and Minor Requirements. A major in one field without a minor requires forty-five quarter credit hours. A major in one field with a minor in a related field requires a minimum of twenty-seven hours in the major field and eighteen hours in the minor field.

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

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

Education 526. Philosophy of Education. 3 quarter hours.
Education 502. School Administration, or
Education 503. School Supervision. 3 quarter hours.
Education 511. Principles of Research. 3 quarter hours.
Education 521. Educational Statistics. 3 quarter hours.
Education 543. Advanced Educational Psychology. 3 quarter hours.

Subject Matter Fields in Secondary Education. Majors in secondary education are required to select a minimum of fifteen (15) graduate credit hours in a subject matter field. A minimum of thirty-six (36) undergraduate credit hours must be presented in the subject matter field which the student selects as a subject matter field on the graduate level. Except in unusual cases, all graduate courses in a subject matter field must be selected in one curriculum.

Scholastic Standards. The minimum cumulative average required in the Graduate School is 3.0 (B) quality points. A student who falls below this cumulative average at the end of any quarter will be dropped from the graduate program by the end of the next quarter if the cumulative average is not raised to at least 3.0 quality points.

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

Repeating Courses for Graduate Credit. Courses taken for graduate credit in which final grades have been awarded may be repeated once for the purpose of improving the grade. Only the last grade earned will be counted in the cumulative average. A course once completed for undergraduate credit may not be repeated for graduate credit.

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

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

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

undergraduate requirements, and (4) that the student is enrolled in the Graduate School when such courses are taken.

Credit for Graduate Work Done Elsewhere. The University does not accept credits earned elsewhere for the fulfillment of the requirements for the master's degree.

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

Credit for Extension Work. Nine quarter hours may be earned in extension work offered by Tennessee A. and I. State University; but any combination of extension and workshop hours may not exceed nine. Extension credit will not reduce the minimum residence requirement of one academic year. Such credit, however, may be counted with the required forty-five graduate credit hours.

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

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

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

Students who wish to do research or thesis work *in absentia* must present an outline of the proposed work and obtain the approval of the Guidance Committee and the Chairman of the Graduate School. A maximum of three hours' credit in course 512 will be allowed for approved research or thesis work *in absentia.* Registration is required if credit is to be allowed.

Conference. Graduate students who wish faculty assistance or the use of facilities while not otherwise registered in the University are required to register for "Conference." Registration for conference is usually limited to those who have grades of "incomplete" (I) in course 512 (Thesis Writing) or to applicants for the final oral examination. No credit hours are allowed for conferences; however, one quarter of residence may be allowed for those who spend a minimum of thirty-six clock hours during a given quarter in official conference with their advisers on the campus at the University in addition to any other work connected with the writing of the thesis. Conference registration is permitted only during the regular registration periods at the University. Registration fee for conference is $15.00 per quarter.

The Handbook of the Graduate School

All regulations of the Graduate School are outlined in the *Handbook of the Graduate School.* Each student is expected to obtain a copy and become thoroughly familiar with its contents. The student is expected further to assume full responsibility for the fulfillment of all regulations as they are published in this *Handbook,* unless other directives are written and approved by the student's major adviser, guidance committee, and the Chairman of the Graduate School.

Notes

SCHOOL OF ARTS AND SCIENCES

CARL M. HILL, Chairman

SCHOOL OF ARTS AND SCIENCES

CARL M. HILL, Ph.D., *Chairman*

Purpose

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

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

Through the School of Arts and Sciences, the University grants the Bachelor of Arts and of Science degrees. The requirements for these degrees are satisfied normally in four years.

Types of Undergraduate Programs

Two types of undergraduate programs are offered in the School of Arts and Sciences; each leading to the Bachelor's degree. One program attempts to prepare the student for the teaching profession; the second program, for professions other than teaching.

In the teacher training program, the student selects a major field of concentration within the School of Arts and Sciences. The student then fulfills course requirements in the general curriculum pattern of: (1) general education core (60-66 quarter hours), (2) professional education core (36 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 currimulums are: Agricultural Education, Home Economics, Biology, Chemistry, Science Education, Mathematics, Modern Foreign Languages, Social Sciences, English, and Speech and Drama.

Several departments offer training for professions other than teaching. The purpose of these departments is to train students for successful performance as specialist in somewhat restricted fields of specialization.

General Requirements for A Bachelor Degree

The University through the School of Arts and Sciences awards the Bachelor of Arts and Bachelor of Science degrees. All candidates for a Bachelor's degree must complete a minimum of 192 quarter hours (with a minimum average of "C") which include:

The General Education or Liberal Education courses (57 to 66 quarter hours)

A minimum of 66 quarter hours in 300 and 400 level courses

A minimum of 36 quarter hours in a subject or major field with a minimum of 15 quarter hours in 300 and 400 level courses

A minimum of 6 quarters of required health and physical education courses

A minimum of two years of basic Air Force Reserve Officers Training Corp (men)

Nine quarter hours of English

Nine quarter hours of American history (for all students who do not present one year of American history on their high school transcripts)

A major program of studies within a department of the School

The senior year, or its equivalent (the last 48 quarter hours offered for the degree and the last nine months) in residence

The Junior English Proficiency Examination

A senior project

Requirements for the Bachelor of Science Degree

(With Teaching Certification)

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 ..... 60-66 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.
     - English 211, 212, 213 and
     - Two courses selected from
     - Philosophy 323 or 301,
     - Music 131 and Art 133
   - Natural Science ..... 12 qr. hrs.
     - Biology 101, 102, 103; Chemistry 111, 112, 113;
     - Natural Science 121, 122, 123; or
     - Physics 211, 212, 213
   - Social Studies 111, 112, 113, 114 ..... 12 qr. hrs.
   - Mathematics ..... 3 or 9 qr. hrs.
     - Math 200 ..... (3 hours) or
     - College Mathematics ..... (9 hours)
2. Professional Education Core ..... 36 qr. hrs.
3. Area of Endorsement ..... 18-45 qr. hrs.
4. Other quarter hours to total the quarter hours required by the University and the major department.

Requirements for the Bachelor of Science Degree*

(Without Teaching Certification)

To qualify for the Bachelor of Science degree without teaching certification, the student should complete the general requirements for a Bachelor's degree and other courses included in the following program.

1. Liberal Education 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 department major

*Exceptions are made in agriculture and home economics education.

Requirements for the Bachelor of Arts Degree

To qualify for the Bachelor of Arts degree, the student should (1) complete the general requirements for a Bachelor's degree and other courses in the Liberal Education Core.

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

and (2) complete a program of studies in one of the following subjects: Biology, Chemistry, History, Mathematics, Sociology, Social Administration, Speech and Drama, English, Modern Foreign Languages, Geography, Physics, or Political Science.

Modern Foreign Language Requirement for The Bachelor of Arts Degree

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

a. Students who present no (0) units of a foreign language in high school when they enter the University are to take twenty-seven (27) quarter hours of work in a foreign language, beginning with the freshman course in that language.
b. Students who present two (2) units of a foreign language in high school and who desire to continue work in that same language may satisfy the language requirement by pursuing eighteen (18) quarter hours in that language, beginning with the sophomore course of that language.
c. Students who present four (4) units of a foreign language in high school and who desire to continue work in that language may satisfy the language requirement by pursuing nine (9) quarter hours in that language, beginning with the junior course.

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.

Departmental Curriculums

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

Agriculture

Agricultural Education, p. 125
Agricultural Economics, p. 123
Agronomy, p. 129
Animal Husbandry, p. 131
Biochemistry, p. 133
Poultry Husbandry, p. 135
Horticulture, p. 137

Home Economics

Clothing and Textiles, p. 70
Foods and Nutrition, p. 72
Home Economics Education, p. 75

Humanities

English, p. 64
Modern Foreign Languages, p. 79
Speech and Drama, p. 116

Natural Sciences

Biology, p. 55
Chemistry, p. 60
Mathematics, p. 86
Physics, p. 86
Science Education, and Geography, p. 93, 96

Social Sciences

History, p. 98
Political Science, p. 103
Social Administration, p. 107
Sociology, p. 110

PROVISION FOR PROFESSIONAL TRAINING IN MEDICINE, DENTISTRY, AND NURSING

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

COMBINATION CURRICULA FOR THE STUDY OF MEDICINE, DENTISTRY, AND CLINICAL LABORATORY TECHNOLOGY

Curricula preparatory for the study of medicine, dentistry, nursing and clinical laboratory technology are offered at Tennessee A. and I. State University in cooperation with Meharry Medical College. Several of these curricula are joint programs between the two institutions and qualify students for the bachelor's degree.

Students who wish to participate in any one of the combination-degree curricula should make known this fact to the Office of Admissions when request for an official transcript is filed. Also, students who are admitted to the Meharry Medical College, under the combination-degree program, should inquire at the Registrar's Office at Meharry Medical College for further information regarding this program.

Arts-Medical Combination Curriculum Leading to the Bachelor's Degree

The first part of this joint curriculum is offered regularly enrolled students at the Tennessee A. and I. State University who are pursuing a Bachelor of Arts or Science curriculum.

The first three years of this curriculum include courses designed (1) to offer adequate training in the basic sciences and (2) to promote broad cultural development. The following courses must be successfully completed:

	Qr. Hrs.
1. Basic Science Courses: (52 to 56 qr. hrs.)	
General Biology or Zoology with Laboratory	12
Inorganic Chemistry (to include physical chemistry of solutions)	12
Qualitative and Quantitative Analysis	8
Organic Chemistry with Laboratory	8-12
General Physics with Laboratory	12
	52 to 56
2. Broad Cultural Subjects: (88 to 92 qr. hrs.)	
College Mathematics	9
English Composition	9
Electives: chosen in the student's major area of concentration and in subjects designed to promote broad cultural development	70 to 74
Total	144

The fourth year of the joint curriculum is offered those students who are admitted to the Meharry Medical College. At the successful completion of the freshman year curriculum in the School of Medicine at the Meharry Medical College, the student makes application to the Tennessee A. and I. State University for the Bachelor of Arts or Science degree. Upon joint recommendation of the Meharry Medical School and the Tennessee A. and I. State University, the student becomes a candidate for the Bachelor of Arts or Science degree. The degree is awarded by the Tennessee A. and I. State University.

Minimum Pre-Dental Curriculum

The courses listed in this curriculum constitute, according to the Council on Dental Education of the American Dental Association, the minimum requirements for admission to approved schools of dentistry. However, it is recommended that students anticipating study of dentistry pursue courses beyond these minimum requirements.

First Year	*Quarter Hours*
Chemistry 111-2-3	12
Biology 101-2-3	12
English 101-2-3	9
French or German	9
Mathematics 131-2-3	9
Physical Ed. 11-12-13 (Women)	4
Physical Ed. 11-12-13 (Men)	1
Air Science I (Men)	1
	55

Second Year	*Quarter Hours*
Physics 211-2-3	12
Chemistry 211	4
Chemistry 311-2	8
French or German	9
Psychology 221-2-3	9
Electives	9
Physical Ed. 20's to 50's (Women)	4
Physical Ed. 20's to 50's (Men)	1
Air Science II (Men)	3
	55

Pre-Nursing Curriculum

The pre-nursing curriculum provides the necessary college preparation for entrance into the professional program of approved schools of nursing which offer the bachelor's degree in nursing. The curriculum is composed of the following courses:

First Year	*Quarter Hours*
Chemistry 111-2-3	12
English 101-2-3	9
Mathematics 131-2-3	9
History 121-2-3	9
Electives	6-9
Physical Education 11-12-13 (Women)	4
	49 to 52

Second Year	*Quarter Hours*
Biology 101-2-3	12
History 201-2-3	9
Sociology 211-2-3	9
Psychology 211-2-3	9
Electives	9
Physical Ed. 20's to 50's (Women)	4
	52

Arts-Dental Combination Leading to the Bachelor's Degree

The first part of this joint curriculum is offered regularly enrolled students at the Tennessee A. and I. State University who are pursuing Bachelor of Arts or Science curriculum.

The first three years of this curriculum include courses designed (1) to offer adequate training in the basic sciences and (2) to promote broad cultural development. The following courses must be successfully completed:

1. Basic Science Courses: (48 to 52 qr. hrs.)

	Quarter Hours
General Biology or Zoology with Laboratory	12
Inorganic Chemistry (to include physical chemistry of solutions)	12
Qualitative	4
Organic Chemistry with Laboratory	8-12
General Physics with Laboratory	12
	48 to 52

2. Broad Cultural Subjects: (92 to 96 qtr. hrs.)

College Mathematics	9
English Composition	9
Electives: Chosen in the major area of concentration and in subjects designed to promote broad cultural development	74 to 78
Total	144

The fourth year of the joint curriculum is offered those students who are admitted to the Meharry School of Dentistry. At the successful completion of the freshman year curriculum in the School of Dentistry at the Meharry Medical College, the student makes application to the Tennessee A. and I. State University for the Bachelor of Arts or Science degree. Upon joint recommendation of the Meharry School of Dentistry and the Tennessee A. and I. State University, the student becomes a candidate for the Bachelor of Arts or Science degree. The degree is awarded by the Tennessee A. and I. State University.

Medical Laboratory Technology Combination Curriculum Leading to Bachelor Degree and Certificate

The Meharry Medical College and the Tennessee A. and I. State University have established a combination curriculum leading to the Bachelor of Science degree and a Certificate in Medical Laboratory Technology. The student spends a minimum of two calendar years or three academic years following an essentially prescribed curriculum, at the Tennessee A. and I. State University. Upon admission and successful completion of the two-year program at the Meharry Medical College and upon joint recommendation of the two institutions, the Bachelor of Science degree is awarded by the Tennessee A. and I. State University.

The first part of the combination curriculum is offered at the Tennessee A. and I. State University and consists of the following courses:

Freshman Year	*Quarter Hours*
English 101-2-3	9
Gen. Zool. 111-2-3	12
Chemistry 111-2-3	12
Electives (Humanities or Social Sciences)	3
Phy. Ed. (Women) 11-12-13	4
Air Science and Physical Education (Men) 11-12-13	4
Mathematics 131-2-3	9
Total	49

Sophomore Year	*Quarter Hours*
Chemistry 211-2-3 or 311-2-3	12
Biology 241 (Bacteriology)	4
Biology (Elective)	4
Air Science and Phy. Ed. (Men)	4
Physical Education 20's to 50's (Women)	4
Electives (Humanities or Social Science)	24
Total	48

Summer I	
Biology 332-3, Comp. Anat.	8
Social or Political Science or English 211-2	6
Total	14

Summer II	
Physics 211-2-3	12
Electives (Humanities and Social Science)	9
Total	21

Upon admission to the School of Medical Technology at the Meharry Medical College, the student follows the curriculum listed below.

First Year	*First Quarter*	*Second Quarter*	*Third Quarter*	*Total*
Laboratory Practice	*252	288	204	744
Biochemistry	192			192
Seminar	12		12	24
Parasitology			72	72
Physiology		240		240
Clinical Pathology		108		108
Bacteriology	144			144
Total	600	636	288	1524

Second Year	*First Quarter*	*Second Quarter*	*Third Quarter*	*Total*
X-Ray Technic	**432	**468		468
Electrocardiography	36			36
Seminar	12	12	12	36
Laboratory Practice	**432	**468	216	648
Basal Metabolism			36	36
Tissue Technic			216	216
Total	480	480	480	1440

DEPARTMENT OF BIOLOGY

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

The curricula of the department of biology are designed to fulfill the requirements in the areas of (1) preservice teacher training, (2) preprofessional training for the medical branches, (3) service courses for other departments at the University, and (4) graduate courses and research in zoology.

Two major undergraduate curricula are offered, either of which may lead to the Bachelor of Science. With the aid of the departmental adviser the student should select one of the curricula, as outlined below, at the beginning of the freshman year. If the student should desire to change to the other curriculum at the end of the freshman year, sufficient flexibility in both curricula will permit this without much loss in time. Those who wish to prepare for entrance into graduate school or one of the medical branches should select the Preprofessional and Non-Teacher Training Curriculum. The Preprofessional and Non-Teacher Training Curriculum requires a minimum of 192 quarter hours for graduation, 66 of which should be of 300 and 400 level courses. The Preservice Teacher training curriculum requires a minimum of 192 quarter hours for graduation, 66 of which should be of 300 and 400 level courses. Each curriculum requires a minimum of 48 hours of prescribed courses in the major field of which at least 15 quarter hours must be in courses on the 300 and 400 levels. In addition, the student is expected to take the courses in the related areas as indicated in each curriculum. 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.

* Clock Hours
** Alternating service

An undergraduate minor in the department must present a minimum of 36 quarter hours from the following courses: Biology 101-2-3, Bacteriology 241, Botany 111, or 112-13 or Zoology 202-3; Biology 311, and Zoology 332-3, 401, 432.

Graduate studies are offered in zoology and lead to the Master of Science or the Master of Arts degree. A graduate major in zoology is required to complete a minimum of 45 quarter hours of prescribed courses. For further information regarding the master degree program, consult the Graduate School Handbook.

CURRICULUM FOR PREPROFESSIONAL AND NON-TEACHER TRAINING

With a Major in Biology

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Biology 101-2-3	4	4	4
Mathematics 131-2-3	3	3	3
English 101-2-3	3	3	3
*German or French 101-2-3 or 201-2-3	3	3	3
Chemistry 111-2-3	4	4	4
Air Science (M) 151-2-3	1	1	1
Physical Educ. (M) 11-12-13	1/3	1/3	1/3
Physical Educ. (W) 11-12-13	1 1/3	1 1/3	1 1/3
	18 1/3	18 1/3	18 1/3

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Bacteriology 214	4		
Botany 112-3		4	4
English 211-2-3	3	3	3
Chemistry 311-2-3	4	4	4
Sociology 211-2-3 or **History 201-2-3	3	3	3
German or French 201-2-3 or Electives	3	3	3
Air Science (M) 251-2-3	1	1	1
Physical Educ. (M) 21 to 49	1/3	1/3	1/3
Physical Educ. (W) 21 to 49	1 1/3	1 1/3	1 1/3
	18 1/3	18 1/3	18 1/3

Junior	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Biology 311	4		
Zoology 332-3		4	4
Physics 211-2-3	4	4	4
Psychology 221-2		3	3
Electives	5	4	4
Soc. 322 or Hist.	3		
	16	15	15

Senior Year	*Quarter Hours Credit*		
Zoology 401	4		
Zoology 432		4	
Zoology 423			4
Biology 450	3		
Electives	8	12	12
	15	16	16

*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 PRESERVICE TEACHER TRAINING

With a Major in Biology

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Biology 101-2-3	4	4	4
Mathematics 131-2-3	3	3	3
English 101-2-3	3	3	3
*German or French 101-2-3 or 201-2-3	3	3	3
Social Studies 111-2-3	3	3	3
Air Science (M) 151-2-3	1	1	1
Physical Education (M) 111-2-3	1/3	1/3	1/3
Physical Education (W) 11-12-13	1 1/3	1 1/3	1 1/3
	17 1/3	17 1/3	17 1/3

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Botany 111	4		
Zoology 202-3		4	4
English 211-2-3	3	3	3
*German or French 201-2-3 or Electives	3	3	3
Chemistry 111-2-3	4	4	4
Social Studies 114	3		
Health 211 or 212 or 213		3	
Education 201			3
Air Science (M) 251-2-3	1	1	1
Physical Education (M) 20 to 50	1/3	1/3	1/3
Physical Education (W) 20 to 50	1 1/3	1 1/3	1 1/3
	18 1/3	18 1/3	18 1/3

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 242-3		3	3
Education 301	3		
Psychology 312		3	
Education 387			3
Music 131	3		
Nutrition 212	3		
Art 133		3	
Education 371			3
	17	17	17

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Bacteriology 241	4		
Zoology 401	4		
Zoology 432		4	
Physics 211-2-3	4	4	4
Psychology 463	3		
Education 462		3	
Science Education 471		3	
Education 472			6
Education 414			3
**History 201-2-3 or Electives	3	3	3
Biology 450		(3)	
	18	17	16

*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.

COURSES IN BIOLOGY

Undergraduate

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. These courses must be taken in sequence. Three lectures and two laboratory periods. Laboratory fee $3.00 each quarter.

311. *Principles of Genetics.* (4) An introduction to genetics, including the laws of heredity, the role of heredity in developmental physiology, and the relation between heredity and evolution. Prerequisites: Biology 101-2-3 or equivalent. Three lectures and two laboratory periods. Laboratory fee $3.00.

**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 101-2-3, and 311. Three lectures and two laboratory periods. Laboratory fee $3.00.

**441. *Microtechnique.* (4) Theory and methods of preparing tissues for microscopical examinations: fixation, embedding, cutting, staining and mounting. Prerequisites: Biology 101-2-3 and Chemistry 111-2-3 or equivalents. One lecture and three laboratory periods. Laboratory fee $3.00.

450. *Senior Project.* (0 or 3) Required of all seniors. This project, preferably experimental research, is to be carried out under a project adviser. It is to begin in the Fall quarter of the senior year and to be completed by the end of the Winter quarter with a written report according to the form prescribed by the Department. Methods in the setting up of a scientific problem, the collection and analysis of data, and the use of the literature are emphasized.

Bacteriology

241. *General Bacteriology.* (4) Consideration of identification, culture, sterilization and disinfectant procedures employed in studying certain microorganisms. Open to majors in Home Economics. Prerequisite: Biology 101 or Chemistry 111. Three lectures and two laboratory periods. Laboratory fee $3.00.

**401. *Applied Bacteriology.* (4) The study of bacterial techniques in food, sanitation, soil and pathogenic bacteriology. Prerequisites: Bacteriology 241, Chemistry 361 or consent of instructor. Three lectures and two laboratory periods. Laboratory fee $3.00.

Botany

111. *Botany for Teachers.* (4) This course includes an introduction to the plant kingdom with emphasis placed on the structure and function of the seed plant. Three lectures and two laboratory periods. Laboratory fee $3.00.

112-3. *General Botany.* (8) Deals with a study of the anatomy, physiology and taxonomy of plants. Three lectures and two laboratory periods. Laboratory fee $3.00 each quarter.

Zoology

202-3. *Human Physiology.* (8) The fundamentals of the structure, function and organization of the organ-systems of man. These courses must be taken in sequence. Open to majors in Home Economics and Health and Physical Education. Prerequisite: Biology 101 or Chemistry 111. Three lectures and two laboratory periods. Laboratory fee $3.00 each quarter.

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 101-2-3 or equivalents. Three lectures and two laboratory periods. Laboratory fee $3.00 each quarter.

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 101-2-3 or equivalents. Three lectures and two laboratory periods. Laboratory fee $3.00.

423. *Vertebrate Histology.* (4) The origin and characteristics of the basic tissues and the microscopic anatomy of the organ systems. Also included are the fundamentals of histological technique. Prerequisites: Biology 101-2-3 or equivalents. Three lectures and two laboratory periods. Laboratory fee $3.00.

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. Laboratory fee $3.00.

433. Embryology. (4) A continuation of Zoology 432. The later development of birds and mammals with emphasis on histogenesis and morphogenesis in the chick and pig. Prerequisite: Zoology 432 or equivalent. Three lectures and two laboratory periods. Laboratory fee $3.00.

**461. *Endocrinology.* (3) The function of vertebrate hormones with emphasis on those concerned in the physiology of reproduction. Prerequisites: Zool. 202-3. Three lectures.

**463. *Problems in Endocrinology.* (3) Techniques and small animal surgery used in endocrine research with reports and conferences on recent trends. Limited registration. Prerequisite: Zoology 461 or concurrently and consent of the instructor. Three two-hour laboratory periods and outside work. Laboratory fee $3.00.

Graduate

Zoology

511-2. *Research in Biology.* (6) Provides for individual research under the supervision of an adviser. The student must present a general statement of proposed research and obtain approval of his Guidance Committee. Laboratory fee $3.00 each quarter.

514-5. *Special Problems.* (6) Provides for the graduate student desiring additional research related to problems in the field. Prerequisite: Consent of Guidance Committee. Laboratory fee $3.00 each quarter.

521-2-3. *General Experimental Physiology.* (12) Aims to study the nature and mechanism of living matter. Some comparative aspects also included. Prerequisite: Consent of instructor. Three lectures and two laboratory periods. Laboratory fee $3.00 each quarter.

531. *Experimental Embryology.* (4) The principles and mechanisms of developmental physiology. Student reports and research paper required. Prerequisite: Zoology 432 or equivalent or consent of the instructor. Three lectures or conferences and two laboratory periods. Laboratory fee $3.00.

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. Laboratory fee $3.00.

537. *Advanced Histology.* (4) Detailed studies of selected tissues and organs of vertebrates. Student reports and research paper required. Prerequisite: Zoology 423 or equivalent or consent of instructor. Three lectures or conferences and two laboratory periods. Laboratory fee $3.00.

541. *Helminthology.* (4) A study of parasitic worms, including collections, preservation, identification and morphologic studies. Prerequisite: Consent of instructor. Three two-hour periods and additional study-period assignments. Laboratory fee $3.00.

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542. *Protozoology.* (4) A study of protozoa with special emphasis on parasitic forms. Prerequisite: Consent of instructor. Three two-hour periods and additional study-period assignments. Laboratory fee $3.00.

543. *Medical Entomology.* (4) A study of insects and related forms as the causes and carriers of diseases. Prerequisite: Consent of instructor. Three two-hour periods and additional study-period assignments. Laboratory fee $3.00.

562. *Endocrinology Seminar.* (3) Detailed discussions of more advanced topics in endocrinology. Student reports. Prerequisite: Zool. 461 or equivalent. Three lectures or conferences.

564. *Physiological Actions of Vitamins.* (3) The chemistry and physiological action of vitamins with emphasis placed on their roles in biological systems. Student reports. Prerequisites: Chemistry 311-2-3 or equivalent or consent of instructor. Three lectures.

565. *Oxidative Enzymes.* (3) The nature and activities of cellular enzyme systems with emphasis on those concerned in respiration and their histochemical localization. Student reports. Prerequisites: One year of chemistry and of physiology. Three lectures or conferences. (For laboratory register for Zool. 514 or 515).

571. *Genetics of Microorganisms.* (4) The heredity of bacteria, molds, yeasts, algae and protozoa, emphasizing protozoan genetics. Applications to practical and theoretical genetics and methodology are also emphasized. Prerequisites: Biology 311 and 411 or equivalents. Three lectures and two laboratory periods. Laboratory fee $3.00.

581-2-3. *Advanced Entomology.* (12) Studies on the morphology, taxonomy, physiology and ecology of insects. Prerequisite: Consent of instructor. Three lectures and two laboratory periods. Laboratory fee $3.00 each quarter.

Zoology Seminar. No credit. Required of all graduate students in Zoology.

600. *Thesis Conference.* No credit. To be taken by the graduate students who have completed all course requirements for the Master's degree with the exception of the thesis which is in the process of completion.

DEPARTMENT OF CHEMISTRY

MYRON B. TOWNS, Ph.D., *Head*

The curriculum of the Department of Chemistry is designed (1) to offer a collegiate major in Chemistry which, qualitatively and quantitatively, satisfies the criteria generally adopted by the leading colleges and universities of the United States and by the American Chemical Society, (2) to offer meaningful and satisfactory service courses to other departments in the university; and, (3) to offer a graduate program of instruction and research leading to the Master of Science degree which will conform to the requirements of the Graduate School of the university.

Students who are taking a professional undergraduate major in Chemistry must begin their work in the freshman year and should take the courses shown in the program below entitled "Undergraduate Program for Professional Major."

Undergraduate Program for Professional Major

A professional undergraduate major consists of a minimum of 60 quarter hours of Chemistry, 36 of which must be in 300 and 400 level courses. These hours are accumulated through pursuing the following courses:

Chemistry 111-2-3 (General)	12 Quarter Hours
Chemistry 211-2-3 (Analytical)	12 Quarter Hours
Chemistry 311-2-3 (Organic)	12 Quarter Hours
Chemistry 404 (Chemical Bibliography)	3 Quarter Hours
Chemistry 481-2-3 (Physical)	12 Quarter Hours
Chemistry 401 (Senior Project)	3 Quarter Hours
Chemistry: Elective Advanced Course	6 Quarter Hours
Total Hours Chemistry	60 Quarter Hours

**Approved for graduate credit.

In addition, the major in Chemistry includes the following related and required courses:

Mathematics 161-2-3	15 Quarter Hours
Mathematics 261-2-3	15 Quarter Hours
Physics 221-2-3	12 Quarter Hours
Social Science Electives	18 Quarter Hours
Foreign Language (2 years)	18 Quarter Hours
English Composition 101-2-3	9 Quarter Hours
English Literature 211-2-3	9 Quarter Hours
Total Hours Related and Required Courses	96 Quarter Hours

In the total course of study, including all courses taken, at least 45 hours must be in 300 and 400 level courses.

CURRICULUM IN CHEMISTRY FOR A PROFESSIONAL MAJOR

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Chemistry 111-2-3	4	4	4
English 101-2-3	3	3	3
Mathematics 161-2-3	5	5	5
Physical Education 11-12-13 and Air Science for men	1 1/3	1 1/3	1 1/3
Foreign Language I	3	3	3
	16 1/3	16 1/3	16 1/3

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Chemistry 211-2-3	4	4	4
Foreign Language II	3	3	3
Mathematics 261-2-3	5	5	5
Physical Education 20's to 50's and Air Science for men	1 1/3	1 1/3	1 1/3
World Literature 211-212-213	3	3	3
	16 1/3	16 1/3	16 1/3

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 404	3		
Chemistry Elective		3	3
Chemistry 401 (Senior Project)		3	
Social Science Elective	3	3	3
Elective (Unrestricted)	6	3	6
	16	16	16

Students who wish to take a major in Chemistry and to obtain a Tennessee Teachers Provisional Certificate should take the courses shown below in the program entitled "Undergraduate Program for Non-Professional Major for Prospective Teachers":

Undergraduate Program for Non-Professional Majors for Prospective Teachers

An undergraduate program, with a major in Chemistry, for prospective teachers includes:

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 (Senior Project)	3 Quarter Hours

In addition the Tennessee State Board of Education requires:

Courses in General Education	48 Quarter Hours
Courses in Professional Education	36 Quarter Hours

The curriculum outlined below satisfies both the requirements of the Chemistry Department and of the Tennessee State Board of Education.

Curriculum in Chemistry for a Prospective Teacher

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Chemistry 111-2-3.	4	4	4
English 101-2-3 ...	3	3	3
Mathematics 161-2-3	5	5	5
Social Studies 111-2-3	3	3	3
Physical Education 11-12-13 and Air Science for men.	1 1/3	1 1/3	1 1/3
	16 1/3	16 1/3	16 1/3

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Chemistry 211-2-3.	4	4	4
English 211-2-3...	3	3	3
Education 201.....	3		
Psychology 242-3..		3	3
Health 151, 211...		3	3
Social Studies 114.	3		
Foreign Language (1st Year).....	3	3	3
Physical Education 20 to 50 and Air Science for men	1 1/3	1 1/3	1 1/3
	17 1/3	17 1/3	17 1/3

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
Education 301, 371, 387.	3	3	3
Psychology 312.....	3		
Philosophy 323.....		3	
Humanity Elective.....			3
Elective	3	3	3
	17	17	17

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Education 462	3		
Science Education 471...	3		
Education 472.....			6
Electives	9	12	9
Psychology 463		3	
	15	15	15

COURSES IN CHEMISTRY

UNDERGRADUATE

111-2-3. *General Chemistry.* (12) This course is an elementary study of the fundamental laws and theories of chemistry and of the descriptive chemistry of important elements and compounds. Two lectures, one recitation, and two two-hour laboratory periods per week. Required of majors in chemistry, biology, engineering, pre-medical, pre-dental, home economics, agriculture, health and nursing students. Laboratory fee: $4.00 per quarter.

201-2. *Qualitative Analysis.* (Inorganic). (8) Chemistry 111-2-3 are prerequisites. 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. Laboratory fee $4.00 per quarter.

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. Threee lectures and two three-hour laboratory periods per week. Laboratory fee: $4.00 per quarter.

311-2-3. *Organic Chemistry.* (12) Chemistry 111-2-3 are prerequisites. A systematic study of the source, physical properties, and chemical behavior of aliphatic, aromatic, and heterocyclic compounds of carbon. Three lectures and two three-hour laboratory periods. Laboratory fee: $4.00 per quarter.

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. Three lectures and two two-hour laboratory periods. Designed for majors in agriculture, home economics, and health. Laboratory fee: $4.00.

401. *Senior Project.* (3) Experimentation and writing. This course is required of prospective graduating seniors. Students should enroll in this course at least two quarters prior to expected date of graduation. Other regulations pertaining to this subject found elsewhere in this catalog, should be observed. Minimum of eight hours per week. Laboratory fee: $4.00.

404. *Chemical Bibligraphy.* (3) Chemistry 211-2-3 and 311-2-3 are prerequisites. A study of how to use the chemical journals, reference books, and other sources of chemical information. A systematic search in the chemical literature for information on several compounds and topics will be included. Two conferences a week.

422-3. *Analytical Chemistry.* (6) Chemistry 211-2-3, Chemistry 311-2-3, Chemistry 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, polarimeters, and Geiger Counters will be performed. Two lectures and two three-hour laboratory periods each week. Laboratory fee: $4.00 per quarter.

462-3. *Organic Qualitative Analysis.* (6) Chemistry 211-2-3, 311-2-3, and 404 are prerequisites. A systematic study of the solubility and class reactions of the principal classes or organic compounds. It includes also identification of pure organic compounds and mixtures. Two lectures and two three-hour laboratory periods. Laboratory fee: $4.00 per quarter.

481-2-3. *Physical Chemistry.* (12) Prerequisites: Chemistry 111-2-3 and 211-2-3, Mathematics 261-2-3, and Physics 221-2-3. Physics 221-2-3, and Chemistry 481-2-3 may be taken concurrently. This course is devoted to a study of the fundamental theories and laws governing both physical and chemical changes and covers the properties of gases, liquids, solids, thermodynamics, solutions, chemical equilibria, reaction rates, and electrochemistry. Three lectures and two three-hour laboratory periods. Laboratory fee: $4.00 per quarter.

Graduate Courses

504. *Glassblowing.* (3) Theory and practice in glass blowing. Laboratory fee: $4.00.

541-2-3. *Advanced Inorganic Chemistry.* (9) The chemical elements and their compounds are discussed as they appear on the several periodic arrangements. Special attention is given to the relationships between atomic structure and properties.

544-5. *Inorganic Preparations.* (6) Advanced experimentation leading to preparation of several selected inorganic compounds is included. Laboratory fee: $4.00 per quarter.

561-2-3. *Advanced Organic Chemistry.* (9) A survey of the more important classes of organic compounds and their reactions; a discussion of selected topics, including tautomerism, electronic interpretation of organic reactions, mechanisms, molecular rearrangements, and stereo-chemistry.

566-7. *Organic Preparations.* (6) Laboratory practice in the synthesis of organic compounds of complex structure. Laboratory fee: $4.00 per quarter.

571-2. *Quantitative Organic Micro Analysis.* (8) A discussion of and laboratory in micro techniques involved in use of micro balance, carbon and hydrogen combustion analysis, molecular weight determinations, methoxy group analysis, Dumas and Kjeldahl nitrogen determination, and sulfur and halogen analyses. Laboratory fee: $4.00 per quarter.

581-2-3. *Advanced Physical Chemistry.* (9) Thermodynamics, the electrochemistry of dilute solutions, surface chemistry and colloids, and kinetics.

584-5-6. *Advanced Physical Chemistry Laboratory.* (9) Experiments on selected topics. Laboratory fee: $4.00 per quarter.

537-8-9; 557-8-9; 577-8-9; 597-8-9. *Chemical Research.* (6 max.) Credit conditioned by quality and quantity of research required of candidates for the master of science degree. Laboratory fee: $4.00 per quarter.

Chemistry Seminar. No credit. Required of all candidates for advanced degree. Seminar meets twice each month.

DEPARTMENT OF ENGLISH

CRAWFORD B. LINDSAY, Ph.D., *Head*

The program of the Department of English is so arranged as to serve the needs of all the students of the University, as well as to give a thorough foundation to those who desire to become teachers or specialists in the field. The Department also gives assistance to those who look forward to careers in the field of journalism.

Work leading to the B.S. degree, as well as to the A.B. 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 A.B. degree must meet the requirements 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 A.B. degree). Candidates for the B.S. 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 B.S. degree and the A.B. 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 45 quarter hours of work in English must be completed above the 9 quarter hours of work in Freshman English. For a major, thirty-six of the required hours in English must be on the 300 and 400 level. This 45 quarter hour program in English does not include the 3 quarter hour course in English 471 (Methods of Teaching English), which carries certification credit in secondary education, although it is administered by the Department of English.

One desiring certification in English as a second teaching area must complete 36 quarter hours of work in English, including Freshman English, but excluding Methods of Teaching English.

Majors in English are required to complete the following courses: English 101-102-103 (Freshman English); English 211-212-213 (World Literature); English 222-223 (English Literature); English 361-362-363 (American Literature); and English 451 (English Language). Beginning in September, 1954, 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 working toward certification must complete 36 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; and 9 quarter hours of work in Health, Personal Development, and Home and Family Living.

Any student, whether an English major or not, may elect two full years (18 quarter hours) of work in journalism (English 301-302-303; 481-482-483).

Graduate students in English may qualify for the degree of Master of Arts only. A candidate for this degree must pass a foreign language examination administered by the Department of Modern Foreign Languages. A graduate student in English may take a graduate minor in education or in some other subject matter field, if he desires.

B.S. CURRICULUM IN ENGLISH

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 101-102-103	3	3	3
Foreign Language	3	3	3
Social Studies 111-112-113	3	3	3
Mathematics 111-112-113	3	3	3
Health 211-212	3	3	
Art 133 (Man and Materials)			3
P. E. (11-12-13 (Women)	1 1/3	1 1/3	1 1/3
P. E. (Men)	1/3	1/3	1/3
R. O. T. C. (Men)	1	1	1
	16 1/3	16 1/3	16 1/3

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 211-212-213 (World Lit)	3	3	3
English 222-223 (English Lit.)		3	3
Music 131 (Music Appreciation)	3		
Biology 101-102-103 or Chemistry 111-112-113 or Natural Science 121-122-123	4	4	4
Education 201 (Foundations of Ed.)	3		
Psy. 242 (Ed Psy I, Human Development)		3	
Social Studies 114			3
P. E. 21-22-23 (Women)	1 1/3	1 1/3	1 1/3
P. E. 21-22-23 (Men)	1/3	1/3	1/3
R. O. T. C. (Men)	1	1	1
History 201-202-203	3	3	3
	17 1/3	17 1/3	17 1/3

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 361-362-363 (American Lit.)	3	3	3
Education 301 (School Organization, Administration, and Management)	3		
Psy. 243 (Ed Psy. II, Psy of Learning)	3		
Psy. 312 (Measurement and Evaluation)		3	
English 323 (Expository Writing)			3
English 311-312-313 or English 331-332-333	3	3	3
Electives	6	9	9
	18	18	18

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 411-412-393 or English 421-422-423	3	3	3
Psy. 463 (Classroom Guidance)	3		
English 451-471-450	3	3	3
Ed 387 (Curriculum Construction)		3	
Ed 371 (Secondary School Methods)	3		
Ed 472 (Practice Teaching)			6
Ed 414 (Principles of Teaching)			3
Ed 462 (Community Relations)	3		
Electives	3	9	
	18	18	15

A.B. CURRICULUM IN ENGLISH

Freshman Year	Quarter Hours Credit		
Name of Course	*I*	*II*	*III*
English 101-102-103	3	3	3
Foreign Language	3	3	3
Social Studies 111-112-113	3	3	3
Mathematics 111-112-113	3	3	3
Health 211-212	3	3	
Art 133 (Man and Materials)			3
P. E. (Women)	1 1/3	1 1/3	1 1/3
P. E. (Men)	1/3	1/3	1/3
R. O. T. C. (Men)	1	1	1
	16 1/3	16 1/3	16 1/3

Sophomore Year	Quarter Hours Credit		
Name of Course	*I*	*II*	*III*
English 211-212-213 (World Lit.)	3	3	3
English 222-223 (English Lit.)		3	3
Music 131 (Exploring Music)	3		
Biology 101-102-103 or Chemistry 111-112-113 or Natural Science 121-122-123	4	4	4
Ed 201 (Foundations of Ed)	3		
Psy 242 (Ed. Psy. I, Human Development)		3	
Social Studies 114			3
P. E. (Women)	1 1/3	1 1/3	1 1/3
P. E. (Men)	1/3	1/3	1/3
R. O. T. C.	1	1	1
Foreign Language	3	3	3
	17 1/3	17 1/3	17 1/3

Junior Year	Quarter Hours Credit		
Name of Course	*I*	*II*	*III*
English 361-362-363 (American Lit.)	3	3	3
Foreign Language	3	3	3
Ed 301 (School Organization, Administration and Management)	3		
Psy. 312 (Measurement and Evaluation)		3	
English 323 (Expository Writing)			3
English 311-312-313 or English 331-332-333	3	3	3
Psy. 243 (Ed. Psy. II, Psy. of Learning)	3		
Electives	3	6	6
	18	18	18

Senior Year	Quarter Hours Credit		
Name of Course	*I*	*II*	*III*
English 411-412-393 or English 421-422-423	3	3	3
English 450-451-471	3	3	3
History 491 or 492	3		
Psy. 463 (Classroom Guidance)			3
History 201 or 202 or 203		3	
Ed. 387 (Curriculum Construction)		3	
Ed. 371 (Secondary School Methods)	3		
Ed. 472 (Practice Teaching)			6
Community Relations (Ed. 462)	3		
Electives	3	6	
	18	18	15

UNDERGRADUATE COURSES

100. *English Fundamentals.* A non-credit course designed for students who give evidence by entrance examination of their inability to meet the standards of English 101.

101-102-103. *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.

211-212-213. *World Literature.* (9) (Three credit hours each quarter). Fall, Winter, Spring, respectively. A course embracing the study of the principal works, by types, of world literature from the ancients to the contemporary American, British, French, German, Spanish, and Italian writers. Special attention given to religious and philosophical theories in these writings and their applications to modern life and thought.

222-223. *Survey of English Literature.* (6) (Three credit hours each quarter). Winter and Spring, respectively. Lectures, reports, readings, and classroom discussion of major English works from the Anglo-Saxon Period to the Twentieth Century. (Three courses were offered as English 202-203 during 1950-51, as English 201-202 prior to September, 1949, and as English 212-213 during 1950-51.) Philosophical and religious implications in these selections given consideration as they contribute to the prospective English teacher and the life of the community in which he resides.

261-262. *Children's Literature.* (6) (Three Credit hours each quarter). Winter and Spring, respectively. (Offered also as Education.) Offers prospective teachers of the primary grades an opportunity to become familiar with the field of literature suited to the tastes of children. Principles that underlie selection of children's literature considered.

272. *Advanced Composition.* (3) Winter and Spring. Open to students beyond the freshman year who desire additional training in written communication.

301-302-303. *Elementary Journalism.* (9) (Three credit hours each quarter.) Fall, Winter, Spring, respectively. A practical course in English composition, with emphasis upon the construction and function of daily and weekly newspapers, community publicity, school publications, and news stories.

311. *Literature of the Romantic Movement.* (3) Fall. Study of representative British selections from 1798 to 1832. Attention given to both poetry and prose.

312. *The Victorian Era.* (3) Winter. Study of selections from the chief representative of the Victorian period in Great Britain, with emphasis upon the relation of the literature to the time in which it was written.

321-322. *Business English.* (6) Fall and Winter. A course in business correspondence and advertising. English 272 or 321 a pre-requisite for English 322.

323. *Expository Writing.* (3) Spring. 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) Fall. Study of representative British selections from 1500 to 1600. A consideration of the non-dramatic literature ofthe century; Lyly, Peele, Greene, Linacre, More, Colet, and others. The poetic types included. Philosophical and religious phases in the lives and works of the authors so concerned stressed in relation to the future teacher of English and his clientele.

*332. *Literature of the Seventeenth Century.* (3) Winter. 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) Spring. Study of representative British selections from the ages of Pope (1700-1744) and Johnson (1744-1788.)

341. *Introduction to Drama.* (3) Fall. Study of drama as a literary form. Selections studied will be some of the representative classical and modern plays.

342. *Modern Drama.* (3) Winter. Extensive study of selections from modern European drama, chiefly British. Readings and reports.

343. *American Drama.* (3) Spring. Continuation of English 342, using selections from chief American playwrights.

*361-362-363. *Survey of American Literature.* (9) (Three credit hours each quarter.) Fall, Winter, Spring respectively. Fall Quarter: American Literature from Colonial times to the Civil War; Winter Quarter: American Literature from the Civil War till 1900: Spring Quarter: American Literature of the twentieth century. Required of all majors in the Junior year.

*393. *Literature of Negro Life.* (3) Spring. A study of American literature dealing primarily with Negro life.

*401. *The Metaphysicals.* (3) A study of the works of John Donne, George Herbert, Richard Crenshaw, Henry Vaughn and other followers of the Donnesque school. Special attention given to religious doctrines and philosophies advanced by these writers, and their implications to future teachers of English and their communities.

*411. *Shakespeare.* (3) Fall. Study of the principal plays of Shakespeare.

*412. *Shakespeare.* (3) Winter. A continuation of the study of Shakespeare, with emphasis upon the cultural background of the Elizabethan Period.

*421. *The English Novel.* (3) A study of selected English novels, with attention to the social background ni which they were written.

*422. *The American Novel.* (3) Winter. A study of selected American novels, with attention to the social background in which they were written.

*423. *The Continental Novel.* (3) Spring. A study of selected Continental novels with attention to the social background in which they were written.

*431. *Milton and Bunyan.* (3) Fall. Study of Milton's *Paradise Lost, Samson Agonistes, Paradise Regained,* the minor poems, and the more important prose tracts; and of Bunyan's *Pilgrim's Progress.* The philosophy and religion in the works of Milton and Bunyan will be carefully treated to gain maximum perspective in the thinking of the prospective teacher of English.

*451. *History of the English Language.* (3) Fall and Spring. 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. Pre-requisite: Eighteen hours of English.

453. *Current English.* (3) Spring. Advanced grammar and modern usage. Some attention is given to semantics. Pre-requisite: Eighteen hours of English.

471. *Methods of Teaching High School English.* (3) Winter and Spring. (Offered as Education.) A methods course in secondary school English. Required of majors. Pre-requisites: Thirty-six hours of English. Must be taken during residence at this University.

481-482-483. *Advanced Journalism.* (9) (Three credit hours each quarter.) Reporting: newsgathering methods, practice, and writing. Newspaper editing: preparation of copy for publication, headlines, make-up. Interpretive writing: editorials, columns, reviews, magazine articles. Pre-requisite: English 301-302-303 (Elementary Journalism.)

*Accepted for graduate credit.

GRADUATE

Although it will be impossible to offer all of these courses each year, any of them may be offered and an instructor and a classroom assigned, where there is demand.

501. *Old English.* (3) Fall. A study of Anglo-Saxon grammar and readings. Pre-requisite: Thirty-six hours of English.

502. *Old English.* (3) Winter. Continuation of English 501. Prerequisite: English 501.

503. *Beowulf.* (3) Spring. A reading of *Beowulf* in Old English and an inquiry into some of the scholarly problems with the poem. Prerequisites: English 501 and 502.

511-512. *The English Seminar.* (6) (Three credit hours each quarter.) English 511 will be a course in methods and materials for the study of English language and literature. English 512 will be the writing of the thesis itself.

521-522-523. *Studies in Nineteenth and Twentieth Century English Literature.* (9) (Three credit hours each quarter.) Fall and Winter. A few of the British authors of the periods covered will be studied. Each student will be required to complete one or more papers of a scholarly nature.

531-532-533. *Studies in the Development of the Novel in the United States.* (9) (Three credit hours each quarter.) Research in some of the principal works of fiction of the United States.

541. *The English Drama I.* (3) Fall. The English Drama from its origin to 1642.

542. *The English Drama II.* (3) Winter. The English Drama from 1660 to 1800.

543. *The English Drama III.* (3) Spring. The English Drama from 1800 to the present.

551-552-553. *Studies in Language and Current Usage.* (9) (Three credit hours each quarter.)

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

581-582-583. *Studies in American Literature..* (9) (Three credit hours each quarter.) Topics vary according to student interest.

DEPARTMENT OF HOME ECONOMICS

MIRIAM L. MCTEER, Ph.D., *Head*

General Information

The Department of Home Economics aims to guide students in developing a sound and satisfying philosophy of life, using intelligence in solving personal and family problems, preparing for vocations, developing wholesome social relationships and enriching their general and cultural education.

The Home Economics Department is located in the Women's Building and includes the following curricula: Clothing and Textiles, Foods and Nutritiion and Home Economics Education.

Students who transfer from other institutions to complete requirements for the Bachelor of Science Degree with a major in any of the curricula of Home Economics must complete at this institution a minimum of one academic year and earn a minimum of 48 hours of credit.

Home Economics Club

The A and I State University Home Economics Club is affiliated with the American Home Economics Association. Home Economics majors who are interested in professional home economics and in homemaking are encouraged to become members of the organization. Home Economics Education majors are required to participate as an integral part of their training to become advisers of the New Homemakers of America.

The major purpose of the American Home Economics Association College Club is to improve education for the profession of home economics.

The club gives a cash award annually to the member in each of the four college classes who has maintained the highest scholastic average above 3.0 for that year.

GRADUATE STUDY IN HOME ECONOMICS

Graduate study programs leading to the Master of Science degree are available with a major in Home Economics Education and a minor in Clothing and Textiles or Foods and Nutrition, or without a minor.

For admission to graduate study, the student must have completed the undergraduate curriculum in Home Economics Education at Tennessee A and I State University or the equivalent.

A maximum of six years is allowed for completion of a graduate program.

For further information, see Graduate Bulletin.

CURRICULUM IN CLOTHING AND TEXTILES

GERALDINE B. FORT, *Co-ordinator*

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

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

A Bachelor of Science degree is offered in undergraduate work. A student may minor in Clothing and Textiles while pursuing graduate work. One hundred and ninety-two (192) quarter hours are required for an undergraduate major, 48 of which must be in Clothing and Textiles, (including Related Art and Home Furnishings). At least 70 hours must be on 300-400 level. 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
Clothing 111-12-13	3	3	3
Home Economics 101-2-3 or 201	1	1	1
Foods 111-112	3	3	
Nutrition 211			3
Chemistry 111-12-13	4	4	4
Physical Education 11-12-13	1 1/3	1 1/3	1 1/3
	15 1/3	15 1/3	15 1/3

Sophomore	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 211-12-13	3	3	3
Clothing 211-12	3	3	
Mathematics 101-2-3	3	3	3
History 201-2-3	3	3	3
Related Art 201-2-3	3	3	3
Physical Education 20's-50's	1 1/3	1 1/3	1 1/3
General Elective			3
	16 1/3	16 1/3	16 1/3

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Speech 201-2	3	3	
Chemistry 361	4		
Economics 211-12	3	3	
French 101-2-3	3	3	3
Psychology 221-253		3	3
Child Development 351			3
Sociology 322-23		3	3
Clothing 313-320-21	3	3	3
	16	18	15

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Clothing and Textiles 323	3		
Senior Project Writing 450	3		
Home Management 433			3
Home Furnishing 400		3	
Art Electives	6	3	3
Clothing Electives	3	3	
General Electives	3	6	9
	18	15	15

COURSES IN CLOTHING AND TEXTILES

Undergraduate

111. *Textiles.* (3) A practical consumer study of fabrics used for clothing and house furnishings including selection, use, and care. One lecture and two laboratory periods. Fee $1.00.

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. Fee $1.00.

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. Fee $1.00.

201. *Clothing of the Family.* (2) Based on the needs of students interested in child development, family relationships, teaching or social work. The study of family clothing problems from the standpoint of income, occupation, and health as well as aesthetic and psychological factors. Construction is included. Open to all students. 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. Fee $1.00.

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. Fee $1.00.

300. *Clothing for Elementary Teachers.* (3) A course designed for majors in Elementary Education. Costume study and construction, handwork including crochet, embroidery, weaving, rug making and crayon work are included. One lecture and two laboratory periods. Fee $1.00.

301. *History of Costume.** (3) The history of costume from ancient times to the present and the influence of social and economic conditions upon costume. Open to all students. One lecture and two laboratory periods. Fee $1.00.

313. *Renovation.* (3) Includes restyling, reconstruction, reclaiming, and repairing outmoded and discarded clothing and accessories. Open to all students. One lecture and two laboratory periods.

320. *Needle Craft.* (3) A study of the fundamental techniques of knitting, crocheting, embroidery and lacemaking. Open to all students. One lecture and two laboratory periods.

321. *Advanced Clothing.** (3) Deals with advanced construction methods. Emphasis placed on selection, construction and care of woolen garments. Prerequisite: Examination in construction skills. Juniors and seniors only. One lecture and two laboratory periods. Fee $1.00.

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

401. *Problems in Clothing and Textiles.** (3) Special problems in the details of clothing construction, selection and textiles selected and solved by the students. Also problems met in student teaching reviewed. Newer trends in clothing construction emphasized. Prerequisites: Clothing 211, 212. One lecture and two laboratory periods.

413. *Dress Design and Draping.** A course in dress design with emphasis on originality and draping. Opportunity given to investigate sources of design and to practice various methods of designing. Prerequisites: Clothing 321. One lecture and two laboratory periods. Fee $1.00.

450. *Senior Project Writing.* (3) (With or without credit.)

Graduate

503. *Methods of Clothing Construction for Teachers.* (3) A study of construction problems met by the clothing teacher. Emphasis placed on developing methods of construction which uphold high standards and require a minimum amount of time. Three laboratory periods. Fee $1.00.

511. *Demonstration Techniques in Clothing and Textiles.* (3) Provides for the study and practice of demonstration techniques. Experience gained in planning, securing and setting up display materials for bulletin boards, show cases, fairs and other exhibits. One lecture and two laboratory periods. Fee $1.00.

*Approved for graduate credit.

514. *Historic Textile Design.* (3) Deals with the origin of textile designs and their development throughout the great art periods of history. Practical application made using some form of applied textile design. Prerequisite: History of Costume. One lecture and two laboratory periods. Fee $1.00.

521. *Draping.* (3) Provides the opportunity to design and drape dresses with emphasis upon creativeness. Designs are draped in muslin and completed in suitable fabric. Prerequisite: Costume Design. Three laboratory periods. Fee $2.00.

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

CURRICULUM IN FOODS AND NUTRITION

MIRIAM L. MCTEER, *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 204 quarter hours, 67 of which are courses in the 300 and 400 series. A minimum of 39 quarter hours must be taken in Foods and Nutrition, 15 of which must be taken in the 300-400 series.

Foods and Institutional Management	21 hours	Chemistry	16 hours
Nutrition	18 hours	Inorganic 12	
Clothing	9 hours	Organic 4	
Home Management	7 hours	Human Physiology	8 hours
Child Development	3 hours	Biochemistry (Physiological)	5 hours
		Mathematics	9 hours
		Bacteriology	4 hours

Students desiring the degree of Bachelor of Arts must elect to take the required years of a modern foreign language as specified under requirements for the Bachelor of Arts Degree.

The curriculum below meets the requirements of the American Dietetic Association for entrance into an approved dietetic internship. It also meets the requirements of the Liberal Education Core for students majoring in non-teaching fields as set up by the School of Arts and Sciences.

Freshman Year	*Quarter Credit Hours*		
Name of Course	*I*	*II*	*III*
English 101-2-3	3	3	3
Home Economics 101-2-3 or 201	1	1	1
Clothing 111			3
Foods 111-12	3	3	
Chemistry 111-12-12	4	4	4
Mathematics 101-2-3	3	3	3
Physical Education 11-12-13	1⅓	1⅓	1⅓
	15⅓	15⅓	15⅓

Sophomore Year	*Quarter Credit Hours*		
Name of Course	*I*	*II*	*III*
English 211-12-13	3	3	3
Biology 202-203		4	4
Clothing 112	3		
Clothing 211			3
Biology 241	4		
Psychology 221-43-53	3	3	3
Nutrition 211			3
Foods 223	3		
Chemistry 361		4	
History 201*		3	
Physical Education 20's - 50's	1⅓	1⅓	1⅓
	17⅓	18⅓	17⅓

Junior Year	*Quarter Credit Hours*		
Name of Course	*I*	*II*	*III*
Related Art 201-3		3	3
Speech 201-2	3	3	
Education 341	3		
Foods 311	3		
Foods 321	3		
Nutrition 311		3	
Foods 312		3	
Biochemistry 313			5
Child Development 351			3
Accounting 211		3	
Foods 352			3
Home Economics Education 311-12	3	3	
Economics 211-12	3		3
	18	18	17

Senior Year	*Quarter Credit Hours*		
Name of Course	*I*	*II*	*III*
Nutrition 411	3		
Sociology 322	3		
Foods 412		3	
Foods 452			3
Foods 313	3		
Nutrition 453		3	
Nutrition 433		3	
Nutrition 432		3	
Nutrition 450			3
Home Management 421	3		
Home Management 423	4		
Electives		6	12
	16	18	18

COURSES IN FOODS AND NUTRITION

Undergraduate

Foods

111-12. *Food Buying and Preparation.* (6) This course is the study of foods, including standards for selection, purchasing, preparing and serving foods for high nutritive value and analyses of simple principles involved in food cookery. One lecture and laboratory periods. To be taken in sequence. Fee $5.00.

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

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

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

313. *Institutional Equipment.* (3) This course 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.

352. *Food Demonstration.* (3) A study is made of the principles and techniques involved in foods, nutrition and equipment as applied to the needs of extension, business, classroom and community teaching. One lecture and two laboratory periods. Fee $5.00.

412. *Quantity Cookery.* (3) This course 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.

321. *Food Preservation.* (3) In this course a study is made of the planning and preserving of an adequate food supply for the year for the urban and the farm family. Laboratory work is done in various methods of food preservation. One lecture and two laboratory periods. Prerequisites: Foods 111-112. Fee $5.00.

*Students not having had one unit of American History in high school must take History 202-203 in addition to 201.

431. *School Lunch.* (3) This course is 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) This course includes a study of institutional food departments, professional ethics and qualifications for managers, employment procedures, personnel schedules and financial records. It also includes menu analyses, the development of standardized recipes, schedules and standardized work procedures. One lecture and two laboratory periods.

Nutrition

211. *Elementary Nutrition.* (3) This course includes the fundamentals of nutrition for health, a study of the essentials of an adequate diet, the food needs of persons of different ages and occupations and the nutritive values of common foods, with special emphasis on the relation of health to such knowledge.

212. *Nutrition for Elementary and Secondary Teachers.* (3) This is a general course in elementary nutrition and includes problems related to gross signs of good and poor nutrition, optimum diets for growing children, school luncheons to promote good growth and health, and methds and materials used in teaching children good food habits. Open to majors in other fields requiring instruction in the fundamentals of nutrition.

311. *Applied Dietetics.* (3) This is a course in the fundamental principles of human nutrition as related to the construction of practical dietaries and in the application of these principles to the feeding of individuals, families and groups. Prerequisites: Chemistry 361 or equivalent, Human Physiology, Nutrition 211.

411. *Advanced Nutrition.* (3) A critical study is made 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.

432. *Community Nutrition.* (3) Programs are developed and analyzed which deal with community problems in nutrition and various agencies through which field work can be promoted. Prerequisite: Nutrition 411, Sociology. Fee $3.00.

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) This course 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.

452. *Special Problems in Foods and Nutrition.* (3) Each student is assigned problems in the fields of foods and nutrition for independent and group solution. Fee $3.00.

453. *Nutrition and Diet Therapy.* (3) This course is designed to study the modifications of the normal diet in the treatment of disorders of digestion, metabolic disturbances and other pathological conditions of the body. Prerequisite: Nutrition 311. Two lectures and one laboratory period.

Graduate

503. *Food Service and Entertainment.* (3) This course is designed to offer instruction in preparation and service of food for various types of social occasions. Attention is given to table appointments, settings and decorations suitable for any type of entertainment. One lecture and two laboratory periods. Fee $5.00.

521. *Advanced Nutrition.* (3) This course includes an extensive review of the principles of human nutrition and metabolism. Prerequisite: Nutrition 411 or equivalent.

531. *Community Nutrition.* (3) A study of nutritional habits of individuals and methods of improving nutritional practices in a community. Opportunity is provided for the development of techniques used in community nutrition programs.

533. *Review of Literature in Foods and Nutrition.* (3) This course is designed to give the student the opportunity to become acquainted with the related literature in the fields of foods and nutrition.

543. *Research Methods in Foods and Nutrition.* (3) This course will review the various methods of conducting experimentation in foods and nutrition.

CURRICULUM IN HOME ECONOMICS EDUCATION

MATTYE C. FLOWERS, *Co-ordinator*

The curriculum in home economics education is designed to prepare students to attain the qualifications required to teach Vocational Home Economics in the secondary schools of Tennessee. Graduates also qualify for Home Demonstration Agents.

The undergraduate major consists of 204 quarter hours, 86 of which are on the 300 and 400 levels. A minimum of 100 qtr. hrs. must be taken in Home Economics Education, 70 of which are on the 300 and 400 levels.

The curriculum below applies to all students entering the freshman year since September 1, 1953 ,and is in accordance with the new certification regulations.

Students who began training prior to September 1953 will follow the curriculum which was in effect at the time of their registration.

Freshman Year	*Quarter Credit Hours*		
Name of Course	*I*	*II*	*III*
English 101-2-3	3	3	3
Clothing 111-112	3		3
Related Art 201-3		3	3
American History 201		3	3
Foods 111-12	3	3	
Chemistry 111-12	4	4	4
Home Economics 101-2-3 or 201	1	1	1
Mathematics 101 or elective			3
Physical Education 11-12-13	1⅓	1⅓	1⅓
	15⅓	15⅓	17⅓

Sophomore Year	*Quarter Credit Hours*		
Name of Course	*I*	*II*	*III*
English 211-2-3	3	3	3
Clothing 211	3		
Zoology 202-3		4	4
Biology 241			4
Psychology 221-243-253	3	3	3
Economics 211-12	3	3	
Nutrition 211	3		
Foods 223			3
Clothing 212		3	
Physical Education 20's-50's	1⅓	1⅓	1⅓
	16⅓	17⅓	18⅓

Junior Year	*Quarter Credit Hours*		
Name of Course	*I*	*II*	*III*
Education 341	3		
Psychology 263		3	
Clothing 321	3		
Child Development 351		3	
Home Management 223-320-422	3	3	3
Chemistry 361	4		
Home Economics Education 311-12	3		3
Nutrition 311		3	
Agriculture 303			3
Political Science 313		3	
Sociology 322			3
Electives*		3	6
	16	18	18

Senior Year	*Quarter Credit Hours*		
Name of Course	*I*	*II*	*III*
Child Development 452-463	3	3	
Home Management 423	4		
Home Economics Education 431		3	
Home Economics Education 442		3	
Home Economics Education 433		6	
Home Art and Mechanics 400			3
Home Economics Education 450	3		
Related Art 421	3		
Electives*	3	3	15
	16	18	18

* Six hours in the Humanities and 18 hours of 300 and 400 Home Economics courses must be elected.

COURSES IN HOME ECONOMICS EDUCATION

Undergraduate

H. E. 101-2-3. *Orientation.* (3) A course required of all freshmen registered in the Area of Home Economics; designed to orient the student into the entire field of Home Economics and to the life of the university. One lecture. One hour credit per quarter.

H. E. 201. *Guidance.* (3) A guidance course required of all transfer students offering three or more quarters of college work. The course is designed to acquaint students with professional opportunities, courses and requirements in the various fields of activity for which the Department of Home Economics offers curricula.

311. *Methods of Teaching Home Economics.* (3) Deals with a critical study of instruction methods, principles of teaching and philosophies of Home Economics. Emphasis is placed on the selection, organization and presentation of courses and lessons in the field of Home Economics. Prerequisites: Education 341 and Child Development 351. Three lectures.

312. *Materials and Teaching Aids.* (3) Designed for students preparing to teach home economics in the public schools. Opportunity is provided for experimentation and operation of different teaching aids and procedures. Special attention is given to the use of films, recordings, bulletin board and radio. Consideration is also given to the place of demonstration, discussion, field trips, home experiences and club work in the teaching of home economics. Three lectures.

431. *Problems of Curriculum and Teaching.* (3) A study of practical methods of organizing the curriculum and adapting its contents to pupil and community needs. Consideration is given to the part the curriculum plays in vitalizing the community and to the underlying principles involved. Three lectures.

433. *Supervised Teaching in Home Economics.* (6) Supervised observation and teaching in Home Economics in the public schools of Tennessee is provided. Problems of organization and supervision basic to induction of teachers into their profession will be stressed. This course is open to seniors who have completed required work in the technical courses of Home Economics. Supervised teaching is done in off-campus teaching centers for a minimum of six weeks. Room and board while in the center will be paid by students.

442. *Adult Education Methods in Home Economics.* (3) Deals with a survey of the organization, administration and recent development in adult education with special emphasis upon the field of homemaking education. A study is made of teaching techniques and materials for adult classes in home-making. Three lectures. Laboratory practice will be arranged.

450. *Senior Project Writing.* (3) Designed to give students opportunity to select and develop problems of their choice in the area of home economics. All seniors are required to write senior projects.

Graduate

512. *Thesis Writing.* (3)

521. *Curriculum Development.* (3) This is a study of the high school Home Economics Curriculum. Individual and group work on curriculum revision and building, and program planning will be provided. Three lectures.

522. *Supervision of Student Teaching in Home Economics.* (3) Conferences, objectives, techniques and organization of supervised programs of Home Economics in secondary schools will be stressed. Attention will be given to practical teaching materials and devices for class work and to the introduction of students into teaching responsiblities. Three lectures.

531. *Home Experiences and Community Programs.* (3) Theory of home projects, guidance and evaluation in Home Economics community programs will be stressed. Three lectures.

533. *Newer Trends in Home Economics.* (3) This course is planned for teachers who have had experience in teaching Home Economics. Emphasis is placed on the analysis of course offerings, techniques, procedures and materials in programs for home and family living. Three lectures.

534. *Evaluation in Home Economics.* (3) This course deals with the selection and construction of evaluation devices. Various devices used in evaluation will be reviewed. Their use and interpretation is stressed. Three lectures.

561. *Special Problems in Home Economics Education.* (3) A study of teaching methods for special groups such as civic and business organizations and social service centers. Special emphasis is given to demonstration methods and use of illustrative materials. Three lectures.

562. *Seminar in Home Economics.* (3) Designed for an intensive study of selected problems in home and family living. Emphasis is placed on studies which emphasize new trends and creative contributions to the field. Recent literature in the field of Home Economics will be reviewed. Three lectures.

COURSES IN CHILD DEVELOPMENT AND FAMILY RELATIONSHIPS

Undergraduate

321. *The Child's Play Environment.* (3) A study of the role of play in the young child's development. Emphasis placed on the selection, care and use of play materials and equipment for young children. Students are able to plan play activities and to construct toys. One lecture and two laboratory periods.

322. *Courtship and Marriage.* (3) A study of dating, courtship and engagement—problems envolved before marriage and their effect on the ultimate success or failure in or out of marriage. Three lectures.

332. *Creative Arts for Young Children.* (3) Observation and analysis of the young child's use of plastic materials such as clay, paint, paper, wood, sand, etc. Students use these materials as well as study their selection, use and care. Open to freshmen, sophomores and non majors.

351. *The Young Child and His Family.* (3) Emphasis placed upon the individual development of various family members. Consideration of family relations basic to an intelligent understanding of attitudes and behavior of children and young people. Observation of training procedures in the Nursery School. Prerequisite Psychology 253. Two lectures and two laboratory periods.

452. *Child Practicum.* (3) Observation and participation in the directing and guiding of young children in the nursery school. In the home and other situations. Prerequisites: Child Psychology 253, CD and FR 351. One conference and four hours in Nursery School.

461. *The Growth of Children as Related to Guidance.** (3) A study of physical growth of children. Interpretation of growth norms. Factors influencing growth, such as nutrition, health, and housing are included. Prerequisites: Psychology 221 and 253. Two lectures and one laboratory period.

463. *Personality Development and Family Relationships.** (3) Problems in family life. A study of modern life giving special emphasis to the activities of the home as they relate to the development of the family and its individual members. Prerequisites: CD. and FR. 322, and Home Management 422 or Sociology 322. Three lectures.

464. *Later Periods of Childhood.** (3) A study of the development of the child from later preschool age through adolescence. Open to men and women of all schools. Prerequisites: CD. and FR. 351, or Child Psychology 253.

465. *Survey of Development Throughout Adulthood.** (3) Interrelation of physical, psychological, and social development from early adulthood through maturity and old age; characteristic adjustment problems in these periods of life. Prerequisites: 3 credit hours in child development and family relationships, psychology, or sociology.

466. *Internship or Fieldwork.* (3-6) Opportunity is given students to do practice work in nursery schools in the community and other agencies caring for children as well as the campus practice laboratory. Taken with approval of instructor.

*Approved for Graduate Credit.

COURSES IN FAMILY ECONOMICS AND HOME MANAGEMENT

Undergraduate

111. *Health and Safety in the Home ond Community.*. (3) A course designed to contribute to the understanding of health and safety measures which should be set up in the home and community. Three lectures.

213. *Social and Economic Problems of the Family.* (3) This course deals with role of women, men, boys and girls in the home; the attitude toward homemaking as a job and the employment of women outside the home. Problems pertaining to conserving family values are discussed. Two lectures and one Lab. period.

223. *Home Nursing.* (3) Special problems in the promotion of health of the family and home care of the sick. Two lectures, one laboratory period.

320. *Household Equipment.* (3) This course deals with the various types of household equipment, standard brands, their selection and care and the study of problems concerned with the manufacturing, marketing and servicing of the equipment of the household. Two lectures, one laboratory period.

323. *Financial Planning for the Individual and Family.* (3) A course which introduces the case method in financial planning. The student learns to interpret figures and to apply them in managing the income. Three lectures.

412. *Home Use of Electricity.* (3) This course deals with the selection, correct use and care of electrical equipment for the household. A comparative study is made of old models of electrical equipment and recent models; purchase and operating costs and expenses for repair. Two lectures and one Laboratory period.

421. *Problems in Home Management.* (3) This course is required parallel with Home Management 423. Two lectures and two laboratory periods.

422. *Economic Problems of the Household.* (3) A course which introduces the student to the major social and economic problems that confront families. Three lectures.

423. *Home Management Residence.* (4) A course designed to study the principles of practical and effective management of the home. It provides experience in family living with its attendant responsibilities in various phases of homemaking. Admission to residence is made on the basis of senior standing.

433. *Consumer Education.* (3) This course 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) A course which deals with advanced study of marketing problems and consumer credit. Individual problems which concern the technology of buying particular types of consumer goods are studied and surveys are made of current legislation and consumer literature. Three lectures.

444. *Selection and Purchasing of Materials and Supplies for the Home.* (3) The purpose of this course is to study basic principles of selecting and buying related to family needs of food, furnishings, textiles and equipment. Two lectures and one laboratory period.

COURSES IN HOME ART AND MECHANICS

301. *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.

302. *Intermediate Home Furnishings and Interior Decoration.* (3) Continuation of Home Art and Mechanics 301 with more advanced theory and broader experiences with the decorative materials.

303. *Problems in Room Decoration.* (3) Practical experiences in selecting and arranging furnishings in relation to a problem; includes work with draperies, bedspreads, slipcovers and other activities pertinent to the selected problem; scale drawing of floor plans and furniture; setting up model room.

*Approved for Graduate Credit.

311. *Color Theory and Harmony.* (3) Application of principles of color theory and harmony approached from the decorator's point of view. Principles of water color painting and color harmony development; experimenting with paints and fabrics.

400. *General Home Furnishings and Interior Decoration.* (3) A general course in home furnishing and decorating designed to give basic principles and show how to use these principles in achieving results that are functional, beautiful, individual and personally satisfying. It provides opportunities for understanding the influences which housing has on the emotional and social development of family members and family life. The subject matter and laboratory activities are presented in the natural sequence for decorating a home, starting with color and continuing with furniture, fabric, accessories and arrangement.

401. *Advanced Home Furnishings and Interior Decoration.** (3) A continuation of Home Arts and Mechanics 400 with a detailed study of a given problem. Color harmony planning, furniture selection and arrangement, fabric selection and construction of fabric furnishings, and accessory selection or construction. A campus interior is to be used in executing this problem.

403. *Wood Crafts.* (3) A study of basic procedure in making interesting and useful household items; techniques of sewing, nailing and fastening with screws; designing plywood items; assembling ready-cut items.

411. *Art Crafts.* (3) Includes color harmony; copying or designing stencils; cutting and applying stencils, brush-stroke painting; striping, varnishing and antiqueing; painting tin, glass and fabrics.

DEPARTMENT OF MODERN FOREIGN LANGUAGES

ALMA T. WATKINS, Ph.D., *Head*

The Department of Modern Foreign Languages offers the Bachelor of Arts degree. A minimum of 192 quarter hours with an average grade of "C" or above is required for graduation.

Students who elect a major in romance languages, French and Spanish, shall present twenty-seven quarter hours of course work in one romance language and not less than eighteen quarter hours in an additional romance language, these courses to be based upon two or more units of high school credit in the major language elected. Otherwise the student shall offer thirty-six quarter hours in one romance language with not less than twenty-seven quarter hours in courses numbered above 300, and twenty-seven quarter hours in an additional language with not less than eighteen quarter hours in courses numbered above 300. The twenty-seven quarter hours must include nine quarter hours of literature from the 300 series, three quarter hours of phonetics (French or Spanish 421), six quarter hours of advanced oral and written composition (French or Spanish 422 and 423), and nine additional quarter hours from the 400 series. The eighteen quarter hours elected from the additional language must include nine quarter hours of literature from the 300 series, three quarter hours of phonetics (course number 421), and six quarter hours of advanced oral and written composition (courses number 422 and 423). Courses will be chosen by the student in consultation with his adviser.

Students who elect a minor in romance languages must present eighteen quarter hours of course work including nine quarter hours of literature in the 300 series, three quarter hours of phonetics (course number 421), and six quarter hours of advanced oral and written composition (courses number 422 and 423) in the two languages elected.

Students who elect a major in French shall present thirty-six quarter hours based upon two or more units of high school credit; otherwise forty-five quarter hours will be required with not less than twenty-seven quarter hours in courses numbered above 300. These courses must include nine quarter hours of literature in the 300 series, three quarter hours in phonetics (French 421), six quarter hours in advanced oral and written composition (French 422 and 423), and nine additional quarter hours in courses in the 400 series. Courses will be chosen by the student in consultation with his adviser.

A student who elects a minor in French must present eighteen quarter hours of course work, including nine quarter hours of literature from courses in the 300 series, three quarter hours of phonetics (French 421), and six quarter hours in advanced oral and written composition (French 422 and 423).

Students who elect a major in German shall present thirty-six quarter hours based upon two or more units of high school credit; otherwise forty-five quarter hours will be required with not less than twenty-seven quarter hours in courses numbered above 300. These courses must include nine quarter hours of literature in the 300 series, three quarter hours in phonetics (German 421), six quarter hours in advanced oral and written composition (German 422 and 423), and nine additional quarter hours in courses in the 400 series. Courses will be chosen by the student in consultation with his adviser.

A student who elects a minor in German must present eighteen quarter hours of course work, including nine quarter hours of literature from courses in the 300 series, three quarter hours of phonetics (German 421), and six quarter hours in advanced oral and written composition (German 422 and 423).

Students who elect a major in Spanish shall present thirty-six quarter hours based upon two or more units of high school credit; otherwise forty-five quarter hours will be required with not less than twenty-seven quarter hours in courses numbered above 300. These courses must include nine quarter hours of literature in the 300 series, three quarter hours in phonetics (Spanish 421), six quarter hours in advanced oral and written composition (Spanish 422 and 423), and nine additiional quarter hours in courses in the 400 series. Courses will be chosen by the student in consultation with his adviser.

A student who elects a minor in Spanish must present eighteen quarter hours of course work, including nine quarter hours of literature from courses in the 300 series, three quarter hours of phonetics (Spanish 421), and six quarter hours in advanced oral and written composition (Spanish 422 and 423).

All majors in the department are required to write a senior project.

Students who enter with advanced credits must take the proficiency examination in the language elected for proper placement.

REQUIREMENTS FOR CERTIFICATION OF TEACHERS OF FOREIGN LANGUAGES

The requirements listed here for certification of teachers of foreign languages became effective in September, 1953.

Students who do not desire to be certified as teachers of foreign languages may elect the Liberal Education Core instead of the General Education Core.

The Department of Modern Foreign Languages offers the Master of Arts degree in French and Spanish under Plans One and Two of the Graduate School. For further information see the Graduate School requirements.

CURRICULUM IN GERMAN

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
German 101-2-3	3	3	3
English 101-2-3	3	3	3
Biology, Zoology or Chemistry 101-2-3	4	4	4
Social Studies 111-2-3	3	3	3
Health 151	3		
Music 131		3	
Education 201			3
Physical Education 11-2-3 (M)	1/3	1/3	1/3
Physical Education 11-2-3 (W)	1 1/3	1 1/3	1 1/3
Air Science I (M)	1	1	1
	17 1/3	17 1/3	17 1/3

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
German 201-2-3	3	3	3
English 211-2-3	3	3	3
Minor	3	3	3
Social Studies 114	3		
Psychology 242-3		3	3
History 201-2-3	3	3	3
Physical Education 20's to 50's (M)	1/3	1/3	1/3
Physical Education 20's to 50's (W)	1 1/3	1 1/3	1 1/3
Air Science II (M)	1	1	1
	16 1/3	16 1/3	16 1/3

Junior Year	*Quarter Credit Hours*		
Name of Course	*I*	*II*	*III*
German 311-2-3	3	3	3
English 411	3		
English 423		3	
Education 301			3
Minor	3	3	3
Math 111-2-3	3	3	3
Psychology 312	3		
Education 371			3
Nutrition 212	3		
Education 387		3	
Philosophy 323			3
Psychology 462		3	
	18	18	18

Senior Year	*Quarter Credit Hours*		
Name of Course	*I*	*II*	*III*
German 421-2-3	3	3	3
Meth. of Teaching Gr., 424 (Edu. 471)	3		
Minor	3	3	3
German 441-2-3	3	3	3
Major or Electives	3		3
Psychology 463	3		
Minor			3
Education 472		6	
Health 211 or 212			3
	18	15	18

CURRICULUM IN ROMANCE LANGUAGES

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
French or Spanish 101-2-3	3	3	3
English 101-2-3	3	3	3
Biology, Zoology or Chemistry 101-2-3	4	4	4
Social Studies 111-2-3	3	3	3
Health 151	3		
Music 131		3	
Education 201			3
Physical Education 11-2-3 (M)	1/3	1/3	1/3
Physical Education 11-2-3 (W)	1 1/3	1 1/3	1 1/3
Air Science I (M)	1	1	1
	17 1/3	17 1/3	17 1/3

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
French or Spanish 201-2-3	3	3	3
English 211-2-3	3	3	3
Minor	3	3	3
Social Studies 114	3		
Psychology 242-3		3	3
History 201-2-3	3	3	3
Physical Education 20's to 50's (M)	1/3	1/3	1/3
Physical Education 20's to 50's (W)	1 1/3	1 1/3	1 1/3
Air Science II (M)	1	1	1
	16 1/3	16 1/3	16 1/3

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
French or Spanish 311-2-3	3	3	3
English 411	3		
English 423			3
Education 301	3		
Minor	3	3	3
Math. 111-2-3	3	3	3
Psychology 312		3	
Education 371			3
Nutrition 212	3		
Education 387		3	
Philosophy 323			3
Psychology 462		3	
	18	18	18

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
French or Spanish 421-2-3	3	3	3
Meth. of Teaching Fr., or Span. 424 (Edu. 471)	3		
French, Spanish 441-2-3	3	3	3
Minor	3	3	3
Major or Electives	3		3
Psychology 463			3
Minor	3		
Education 472		6	
Health 211 or 212			3
	18	15	18

CURRICULUM IN FRENCH

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
French 101-2-3	3	3	3
English 101-2-3	3	3	3
Biology, Zoology or Chemistry 101-2-3	4	4	4
Social Studies 111-2-3	3	3	3
Health 151	3		
Music 131		3	
Education 201			3
Physical Education 11-2-3 (M)	1/3	1/3	1/3
Physical Education 11-2-3 (W)	1 1/3	1 1/3	1 1/3
Air Science I (M)	1	1	1
	17 1/3	17 1/3	17 1/3

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
French 201-2-3	3	3	3
English 211-2-3	3	3	3
Minor	3	3	3
Social Studies 114	3		
Psychology 242-3		3	3
History 201-2-3	3	3	3
Physical Education 20's to 50's (M)	1/3	1/3	1/3
Physical Education 20's to 50's (W)	1 1/3	1 1/3	1 1/3
Air Science II (M)	1	1	1
	16 1/3	16 1/3	16 1/3

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
French 311-2-3	3	3	3
English 411	3		
English 423		3	
Education 301			3
Minor	3	3	3
Math 111-2-3	3	3	3
Psychology 312	3		
Education 371			3
Nutrition 212	3		
Education 387		3	
Philosophy 323			3
Psychology 462		3	
	18	18	18

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
French 421-2-3	3	3	3
Meth. of Teaching Fr., 424 (Edu. 471)	3		
Minor	3	3	3
French 441-2-3	3	3	3
Major or Electives	3		3
Psychology 463	3		
Minor			3
Education 472		6	
Health 211 or 212			3
	18	15	18

CURRICULUM IN SPANISH

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Spanish 101-2-3	3	3	3
English 101-2-3	3	3	3
Biology, Zoology or Chemistry 101-2-3	4	4	4
Social Studies 111-2-3	3	3	3
Health 151	3		
Music 131		3	
Education 201			3
Physical Education 11-2-3 (M)	1/3	1/3	1/3
Physical Education 11-2-3 (W)	1 1/3	1 1/3	1 1/3
Air Science I (M)	1	1	1
	17 1/3	17 1/3	17 1/3

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Spanish 201-2-3	3	3	3
English 211-2-3	3	3	3
Minor	3	3	3
Social Studies 114	3		
Psychology 242-3		3	3
History 201-2-3	3	3	3
Physical Education 20's to 50's (50)	1/3	1/3	1/3
Physical Education 20's to 50's (W)	1 1/3	1 1/3	1 1/3
Air Science II (M)	1	1	1
	16 1/3	16 1/3	16 1/3

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Spanish 311-2-3	3	3	3
English 411	3		
English 423		3	
Education 301			3
Minor	3	3	3
Math 111-2-3	3	3	3
Psychology 312	3		
Education 371			3
Nutrition 212	3		
Education 387		3	
Philosophy 323			3
Psychology 462		3	
	18	18	18

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Spanish 421-2-3	3	3	3
Meth. of Teaching Span. 424 (Edu. 471)	3		
Minor	3	3	3
Spanish 441-2-3	3	3	3
Major or Electives	3		3
Psychology 463	3		
Minor			3
Education 472		6	
Health 211 or 212			3
	18	15	18

GERMANIC LANGUAGES

Courses in German

Undergraduate

101-2-3. *Elementary German.* (9) Aims to develop the ability to write, read and understand simple German. A functional vocabulary is built up, and the essentials of grammar are stressed. Supplemented with graded reading.

201-2-3. *Intermediate German.* (9) Consists of intensive and extensive reading of graded German works (literary and scientific.) Fluency and accuracy of comprehension are the primary objectives.

311-2-3. *Introduction to German Literature.* (9) Consists of selected readings to give the student an acquaintance with outstanding writers, ideas and movements in German literature from the beginning of the German language and literature to the contemporary period.

341-2-3. *Recent German Literature.* (9) A study of the trends in recent German literature including selected readings from modern German authors. Offered every other year.

411-2-3. *The Classical Period of German Literature and Thought.* (9) The selected readings from the prose, poetry, and drama of the classical authors will vary from year to year.

421. *Phonetics.* (3) Consists of an analysis of the sounds of German and of the operation of phonetic laws in the development of the German language.

422-3. *Advanced Grammar, Oral and Written Composition.* (6) Stresses accuracy in grammar and diction and gives the student opportunity to express his ideas intelligently in German.

424. *The Teaching of German.* (3) A basic course in modern language teaching. It acquaints the student with the recent developments in methods, materials, and texts. Required of those wishing to be certified as teachers of German.

441-2-3. *Culture and Civilization of the German People.* (9) This course is concerned with a comprehensive study of the contributions of the German people in the fields of science, thought, literature and art.

451-2-3. *The Romantic School in Germany.* (9) A study of the lives and works of the chief romantic poets and prose writers in relation to the spirit of the age. Offered every other year.

ROMANCE LANGUAGES

Courses in French

Undergraduate

101-2-3. *Elementary French.* (9) A course for beginners which consists of pronunciation, grammar and graded reading.

201-2-3. *Intermediate French.* (9) A continuation of French 101-2-3 consisting of a systematic review of grammar, dictation, conversation, and reading. Stress is placed on ability to read and easy conversation.

311-2-3. *Aspects of French Literature.* (9) An introductory course based on readings selected to give the students an acquaintance with some of the more important personalities, movements, and ideas of French literature with emphasis placed on the 17th, 18th, and 19th Centuries.

381-2-3. *Survey of French Literature.* (9) This course begins with the Middle Ages and emphasizes the works of the best authors to the present.

411-2. *The Classical Age of French Literature.* (6) Stresses the origins and foundations of French Classicism and its main representatives. Offered every other year.

413. *Main Ideas of the Eighteenth Century.* (3) Emphasizes the theories and philosophy of the works of the best authors of the century.

421. *Phonetics.* (3) Consists of an analysis of the sounds of French and of the operation of phonetic laws in the development of the French language.

422-3. *Advanced Grammar, Oral and Written Composition.* (6) A grammatical analysis of selected prose works; and oral and written composition. Required of those wishing to be certified as teachers of French.

424. *The Teaching of French.* (3) A basic course in modern language teaching. It acquaints the student with the recent developments in methods, materials and texts. Required of those wishing to be certified as teachers of French.

441-2-3. *French Civilization.* (9) A course in the history of French civilization and culture, the arts, sciences, and institutions of France to the present.

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 contents of the course: Romanticism; Realism; the Parnassian reaction in poetry; Naturalism and Symbolism. Offered every other year.

*471-2-3. *French Literature of the Twentieth Century.* (9) Alternates with French 451-2-3. Consists of critical studies in the works of leading figures in the novel, drama, and poetry and stresses the philosophy and theories of selected contemporary writers.

Graduate Courses in French

501-2-3. *Old French.* (9) An introductory course to medieval French. The course includes readings, phonology and morphology of old texts in prose and poetry.

511-2. *Research in Thesis Writing and the Thesis.* (6) Required of all candidates for the master's degree in French.

521-2-3. *French Literature of the Sixteenth Century.* (9) An intensive study of the Classical Age of French Literature with emphasis on the Pleiade, Rabelais and Montaigne.

541-2-3. *The French Novel.* (9) Consists of the origins and development of the French novel from the mid-eighteenth century to 1914.

551-2-3. *The French Drama.* (9) Consists of the development of the French Drama from Corneille to 1914.

561-2-3. *Readings in French Literature.* (9) Supervised readings and research arranged according to the individual needs of the students; conferences and reports.

571-2-3. *History of the French Language.* (9) The development of French from Latin and Proto-Romance to the Medieval language; the Renaissance and Modern Language. Includes the analyses of changes in sounds and forms, lectures, discussions, readings and analyses of texts.

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*Approved for graduate credit.

COURSES IN SPANISH

Undergraduate

101-2-3. *Elementary Spanish.* (9) A Course for beginners which consists of pronunciation, grammar, and graded reading.

201-2-3. *Intermediate Spanish.* (9) A continuation of Spanish 101-2-3 consisting of a systematic review of grammar, dictation, conversation and reading. Stress is placed on ability to read and easy conversation.

311-2-3. *Aspects of Spanish Literature.* (9) An introductory course based on readings selected to give the students an acquaintance with some of the more important personalities, movements, and ideas of Spanish Literature with emphasis placed on the 17th, 18th, and 19th Centuries.

321-2-3. *Spanish American Literature.* (9) Consists of selected readings to give the student an acquaintance with the important ideas, personalities, and types of literature of the Colonial Period, the Gaucho Literature and Modernism. Offered every other year.

381-2-3. *Survey of Spanish Literature.* (9) Begins with the Cid and emphasizes the works of the best authors to the present.

411-2-3. *Spanish Prose and Poetry of the Golden Age.* (9) Consists of a study of the Picaresque Novel, Cervantes and the Comedia. Offered every other year.

421. *Phonetics.* (3) Consists of an analysis of the sounds of Spanish and of the operation of phonetic laws in the development of the Spanish language.

422-3. *Advanced Grammar, Oral and Written Composition.* (6) A grammatical analysis of selected prose works; oral and written composition. Required of those wishing to be certified as teachers of Spanish.

424. *The Teaching of Spanish.* (3) A basic course in Modern Language teaching. It acquaints the students with the recent developments in methods, materials, and texts. Required of those wishing to be certified as teachers of Spanish.

441-2-3. *Spanish and Spanish American Civilization.* (9) The history of Spanish and Spanish American Civilization, Culture, and Institutions.

*451-2-3. *Modern Spanish Literature.* (9) Survey of the 19th Century Novel, Drama and Poetry stressing the following aspects: Romanticism, Realism, Regionalism and Modernism.

Graduate Courses in Spanish

501-2-3. *Old Spanish.* (9) A study of Old Spanish language and literature. The course includes readings, phonology and morphology of old texts in prose and poetry.

511-2. *Research in Thesis Writing and the Thesis.* (6) Required of all candidates for the Master's degree in Spanish.

521-2-3. *Origins and Development of the Spanish Novel.* (9) First Quarter: The Celestina—authorship, sources and influences. Second Quarter: The Quixote, Third Quarter: The Picaresque Novel.

531-2-3. *The Modern Spanish Novel.* (9) An intensive study of the modern novel beginning with Fernan Caballero.

551-2-3. *The Spanish Drama from Its Origin to the Present.* (9) Research in the drama from the Medieval period to the present.

561-2-3. *Readings in Spanish and Spanish American Literature.* (9) Supervised readings and research arranged to the individual needs of the student; conferences, and reports.

571-2-3. *History of the Spanish Language.* (9) The development of Spanish from Latin and Proto-Romance to the medieval language. The rise of the standard language; the Renaissance and Modern Language. The course consists of the analyses of changes in sounds and forms, lectures, discussions, reading and analyses of texts.

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*Approved for graduate credit.

DEPARTMENT OF PHYSICS AND MATHEMATICS

The department of physics and mathematics offers courses of study at the undergraduate and graduate levels leading to the bachelor and master degrees in physics and in mathematics.

CURRICULUM IN PHYSICS

The courses in physics have been designed to serve the needs of the following types of students: (1) those who wish to pursue the study of physics as a major; (2) those who require physics as a part of their pre-professional training; (3) those students majoring in the sciences or mathematics to whom the knowledge and techniques of physics are desirable adjuncts.

The physics curriculum requires a minimum of 200 quarter hours for graduation. Of this number, 48 quarter hours of courses in physics are required to satisfy the requirements for a major in physics with at least 24 quarter hours chosen from courses on the 300 level and 12 quarter hours chosen from courses on the 400 level. Of the total number of quarter hours required for graduation, 66 quarter hours should be completed on th e300 and 400 levels.

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

CURRICULUM FOR A MAJOR IN PHYSICS

Freshman Year	*Quarter Hours Credit*		
English 101-2-3	3	3	3
Mathematics 161-2-3	5	5	5
Physical Ed. 11-12-13 (Men	1/3	1/3	1/3
(Women)	1 1/3	1 1/3	1 1/3
Chemistry 111-2-3	4	4	4
German or French	3	3	3
Air Science 151-2-3 (Men)	1	1	1
	16 1/3	16 1/3	16 1/3

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Physics 221-2-3	4	4	4
Mathematics 261-2-3	5	5	5
German or French	3	3	3
Physical Ed. 20's to 50's (Men)	1/3	1/3	1/3
(Women)	1 1/3	1 1/3	1 1/3
English 211-12-13	3	3	3
Air Science (251-2-3) (Men)	1	1	1
	16 1/3	16 1/3	16 1/3

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
Math. 462-3	3	3	
Math. 421			3
American History and/or Electives	6	6	6
	17	17	17

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Physics 412-3	3	3	
Physics 414			3
Physics 450	1	1	1
Economic Principles and/or Electives	15	15	15
	19	19	19

*Twenty-one quarter hours to be chosen from 300 and 400 level courses.

COURSES IN PHYSICS

Undergraduate

211-2-3. *College Physics.* (12) 211, Mechanics; 212, Heat, Sound, and Light; 213, Electricity and Magnetism. A course in which the basic principles are presented. Emphasis is placed upon biological applications. Required in biological and pre-medical curricula. Prerequisite: Mathematics 131-2-3. Three lectures and one laboratory period per week. Laboratory fee $3.00 per quarter.

221-2-3. *General Physics.* (12) 221, Mechanics; 222, Heat, Sound, and Light; 223, Electricity and Magnetism. This course is intended for engineers and students majoring in the physical sciences. Prerequisite: Mathematics 161-2-3. Three lectures and one laboratory period per week. Laboratory fee $3.00 per quarter.

Advanced Undergraduate Courses

311-2-3. *Electricity and Magnetism.* (9) This course presents the fundamentals of theoretical electricity and magnetism. Considerable emphasis is placed upon the solution of problems. Prerequisites: Calculus, Physics 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 spectoscopy. Prerequisite: Phys. 311-2-3. Three lectures and one laboratory period per week. Laboratory fee $3.00.

321-2-3. *Mechanics.* (9) Statics and dynamics of particles and rigid bodies. Lagrange's and Hamilton's equations: fluid statics, and vibrations. Prerequisites: Physics 221-2-3; Mathematics 261-2-3. Three lectures per week.

324. *Heat and Thermodynamics.** (3) This course presents the fundamentals of heat and provides an introduction to thermodynamics with applications to chemistry. Prerequisites: Physics 221-2-3; Mathematics 261-2-3. Three lectures per week.

331-2-3. *Electrical Measurements.** (6) In this course the theory of electrical circuits is studied and discussed. The laboratory work is intended to give experience and facility in the handling of electrical measuring instruments. A comprehensive list of experiments is required, covering modern methods of measuring current, resistance, electromotive force and power, and the calibration of instruments employed, together with measurements of capacity, inductance, and ferro-magnetism. Prerequisites: Physics 221-2-3 or Physics 211-2-3; Mathematics 261-2-3. Two laboratory periods per week. Laboratory fee $3.00.

412-3. *Atomic and Molecular Structure.** (6) The classical and modern concepts of the atom and radiation are developed; introduction to molecular structure and the chemical bond. Prerequisites: Physics 221-2-3 or Physics 211-2-3; Mathematics 261-2-3. Three lectures.

414. *Radioactivity and Nuclear Physics.** (3) An extensive survey of the phenomena and methods of nuclear physics; fission; isotopic tracers; medical radiology; cosmic rays. Prerequisites: Physics 221-2-3 or Physics 211-2-3; Mathematics 261-2-3. Three lectures.

450. *Senior Project.* (3)

Graduate Courses

501-2-3. *Introduction to Theoretical Physics.* (15) A broad survey of the entire field of theoretical physics including application of methods of mathematical physics to special problems; Fourier series; potential theory; vector analysis; Laplace transforms; linear algebraic equations; spherical harmonics; Bessel functions. Prerequisites: Physics 311-2-3, Mathematics 421, 462-3. Five lectures.

521-2-3. *Advanced Laboratory.* (9) Required of all graduate students. The purpose of this course is to prepare the student to undertake independent investigations. Experiments are chosen from spectroscopy, electronics, modern experimental physics, optics, X-rays, and radioactivity. Prerequisites: Physics 311-2-3, Physics 412-3-4. Three laboratory periods per week. Laboratory fee $3.00 per quarter.

*Approved for graduate credit.

511. *Methods of Research.* (3)

512. *Research for Master's Thesis.* (3) Laboratory fee $6.00.

531-2-3. *Infrared Spectroscopy and Molecular Structure.* (9) Laboratory fee $6.00 per quarter.

571-2-3. *Physics Seminar.* (3) Weekly meetings to review current literature in physics. Reports on selected topics.

CURRICULUM IN MATHEMATICS

SADIE C. GASAWAY, *Co-ordinator*

The purposes of the curriculum in mathematics are (1) to provide programs of study for those who desire to pursue an undergraduate or graduate major or minor in mathematics, and (2) to provide courses designed to satisfy the mathematics requirements of the other departments of the several schools and divisions of the University.

The curriculum offers programs of study leading toward two undergraduate degrees, namely: Bachelor of Arts and Bachelor of Science; and two graduate degrees, namely: Master of Arts and Master of Science. The curriculum leading toward the Bachelor of Science degree in mathematics is a Teacher Education Certification Curriculum; and, is designed for prospective teachers of mathematics in the secondary schools in the State of Tennessee.

Students who desire either of the two undergraduate degrees with a major in mathematics must complete a minimum of 194 quarter hours of work with a minimum of sixty-six (66) quarter hours from courses numbered above 300 and a minimum of forty-eight (48) quarter hours of prescribed courses in mathematics with a minimum of eighteen (18) quarter hours from courses numbered above 300. An undergraduate minor in mathematics consists of a minimum of thirty-six (36) quarter hours with a minimum of fifteen (15) quarter hours from courses numbered above 300.

Students who wish to qualify for the Master of Arts degree in mathematics must complete a minimum of forty-five quarter hours of mathematics. Students who wish to qualify for the Master of Science degree with a major in mathematics must complete a minimum of twenty-seven quarter hours of mathematics and a minimum of eighteen quarter hours in some other field as a minor.

A student offering mathematics as a minor for the master's degree is required to complete a minimum of eighteen quarter hours of resident graduate credit in Mathematics.

Curriculum for Bachelor of Arts Degree with a Major in Mathematics

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 101-2-3	3	3	3
Mathematics 161-2-3	5	5	5
Biology 101-2-3 or Chemistry 111-2-3	4	4	4
History 121-2-3	3	3	3
Physical Education 11-12-13 (Women)	1 1/3	1 1/3	1 1/3
(For Men)	1/3	1/3	1/3
Air Science I (M)	1	1	1
	16 1/3	16 1/3	16 1/3

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 211-2-3	3	3	3
Mathematics 261-2-3	5	5	5
Physics 221-2-3	4	4	4
American History 201-2-3 or French 101-2-3 or German 101-2-3	3	3	3
Phys. Educ. (Women)	1 1/3	1 1/3	1 1/3
(Men)	1/3	1/3	1/3
Air Science II (Men)	1	1	1
	16 1/3	16 1/3	16 1/3

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Mathematics 371-2-3	3	3	3
Geography 171-2	3	3	
Pol. Science 221-2		3	3
Sociology 322-3		3	3
French 101-2-3 or German 101-2-3 or French 201-2-3 or German 201-2-3	3	3	3
Health 151	3		
*Electives	6	3	3
	18	18	15

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Mathematics (Electives)	3	3	3
Mathematics 322		3	
Mathematics 450		3	
History 491-2		3	3
French 201-2-3 or German 201-2-3 or French 311-2-3 or German 311-2-3	3	3	3
Science Educ. 427	3		
*Electives	6		6
	15	15	15

*All electives must be numbered above 300.

CURRICULUM FOR BACHELOR OF SCIENCE DEGREE WITH A MAJOR IN MATHEMATICS

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 101-2-3	3	3	3
Mathematics 161-2-3	5	5	5
Science 121-2-3	4	4	4
Soc. Studies 111-12-13	3	3	3
Phys. Ed. 11-12-13 (Women)	1⅓	1⅓	1⅓
(Men)	⅓	⅓	⅓
Air Science I (Men)	1	1	1
	16⅓	16⅓	16⅓

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 211-12-13	3	3	3
Mathematics 261-2-3	5	5	5
Biology 101-2-3 or Chemistry 111-12-13	4	4	4
Soc. Studies 114	3		
Education 201		3	
Art 133			3
Physical Ed. 20's (Women)	1⅓	1⅓	1⅓
(Men)	⅓	⅓	⅓
Air Science II (Men)	1	1	1
Total (Women)	16⅓	16⅓	16⅓

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Mathematics 371-2-3	3	3	3
Mathematics 471		3	
Education 371		3	
Psychology 242-3	3	3	
Education 301	3		
Education 387			
Psychology 312			
Physics 221-2-3	4	4	4
Biology 311 or Chemistry 311 or History 201-2	(3 or 4)	3	
Health 151			3
*Elective			3
	16 or 17	18	19

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Mathematics 322	3		
*Mathematics (Elect.)		3	3
Mathematics 450		3	
Education 462		3	
Psychology 463			
Health 212	3		
History 491		3	
Zoology 332-3 or Chemistry 312-13		4	4
Education 472	6		
Philosophy 323			3
*Elective			3
	12	16	16

*All electives must be numbered above 300.

COURSES IN MATHEMATICS

Undergraduate

100. *Fundamentals of Arithmetic and Algebra.* (0) A non-credit course designed especially for students who desire to pursue courses offered by the department but whose score on the Placement Test indicates probable failure in the regular courses. Students wishing to enroll in Mathematics 161 or Mathematics 131 must first pass the Placement Test given during Freshman Week or pass this course. Five lectures.

101. *Arithmetic.* (3) Designed primarily for prospective teachers in the elementary schools. Study of number and its symbols, fundamental operations with whole numbers, fractions, decimals, denominate numbers, percentage, with problem solving. Will not be counted toward a major or minor in mathematics. Three lectures.

102. *Arithmetic.* (3) A continuation of Mathematics 101 with numerous everyday applications of the topics discussed. Will not be counted toward a major or minor in mathematics. Prerequisite: Mathematics 101. Three lectures.

103. *Arithmetic.* (3) Designed to develop the fundamental concepts of the symbols and the processes of arithmetic; to promote an understanding of the nature of the fundamental operations; and to acquire the power to use these operations in new situations. Will not be counted toward a major or minor in mathematics. Prerequisite: Mathematics 101 and 102. Three lectures.

111-12-13. *Introduction to College Mathematics.* (9) Designed for the prospective teacher; and, provides experiences that will offer him or her maximum opportunity to achieve functional competence in the elementary notions of college mathematics. The major concepts of number, measurement, function, and proof are the mathematical media through which this achievement is sought. (Will not be counted toward a major or minor in Mathematics.) Three lectures.

131. *Algebra.* (3) Review of elementary operations, factoring, fractions, linear equations, graphs, ratio, proportion, variation, exponents, and radicals. Prerequisite: Passing of the Placement Test or of Mathematics 100. Three lectures.

132. *Algebra.* (3) A continuation of 131. Quadratic equations, graphs, binomial theorem, progressions, permutations and combinations. Prerequisite: Mathematics 131. Three lectures.

133. *Plane Trigonometry.* (3) Functions of angles, identities, equations, logarithms, solution of right and oblique triangles with application, graphs of functions. Prerequisite: Mathematics 132. Three lectures.

141. *Agricultural Mathematics I.* (3) Review of the fundamental processes with whole numbers, common fractions and decimal fractions. Percentage, interest, practical applications. For students of agriculture. Three lectures.

142. *Agricultural Mathematics II.* (3) Elementary algebraic operations, linear equations, formulae, lengths, areas, volumes, ratio, proportion, practical applications. For students of agriculture. Prerequisite: Mathematics 141. Three lectures.

143. *Agricultural Mathematics III.* (3) Functions of the acute angle, averages, graphs, practical applications. For students of agriculture. Prerequisite: Mathematics 142. Three lectures.

161. *Algebra.* (5) Discussion of topics in simple and quadratic equations, binomial theorem, progressions, theory of equations, partial fractions. Prerequisite: Passing of the Placement Test or of Mathematics 100. Five lectures.

162. *Trigonometry.* (5) Functions of the general angle, identities, equations, logarithms, the general triangle, and functions of two angles. Prerequisite: Mathematics 161. Five lectures.

163. *Analytic Geometry.* (5) Properties of the straight line, the conic sections in the plane, transformation of coordinates, polar equations of the conics, higher plane curves. Prerequisites: Mathematics 162. Five lectures.

171. *Mathematics of Business.* (3) Review of the fundamental processes in simple arithmetic and algebraic operations. Three lectures.

172. *Mathematics of Business.* (3) Application of these operations to percentage, simple interest discount, partial payments. Prerequisite: Mathematics 171. Three lectures.

173. *Mathematics of Business.* (3) Exponents, radicals, logarithms, progressions, binomial theorem, compound interest, annuities and their applications to problems of business and finance. Prerequisite: Mathematics 172.

200. *Fundamental Concepts of Mathematics.* (3) Designed for the prospective teacher; and, aims to assist him or her in achieving a better understanding of the nature and development of critical thought and quantitative thinking. Emphasis is placed upon the major concepts of number, measurement, function, and proof. Three lectures.

261-2-3. *Calculus.* (15) Differential and integral calculus. Derivative of algebraic, trigonometric, exponential, and logarithmic functions with application to problems rising in engineering and the physical sciences; the indefinite and definite integral with applications; infinite series, approximate computation. Prerequisite: Mathematics 163. Five lectures.

311. *Fundamentals of Statistics.* (3) A basic course in general statistics, including tabulation of data, charts, a study of frequency distributions, measures of central tendency and dispersion, graphs, normal curve, linear correlation. It is advisable that a student take algebra before enrolling in this course. Three lectures.

322. *History of Mathematics.* (3) Great names in the development of mathematics, tracing the development of each of the subject matter fields. For prospective teachers of mathematics. Three lectures.

331-2. *College Geometry.* (6) A study of the concepts of Euclidean Geometry with special emphasis on the nature of proof and of the nature of a logical or mathematical system. Three lectures.

371. *Advanced Algebra.* (3) A continuation of College Algebra. Aimed at broadening the concepts of algebra for students intending to study higher mathematics or to teach mathematics on the secondary level. Prerequisite: Mathematics 161. Three lectures.

*372-3. *Theory of Equations.* (6) Properties of polynomials, transformation of equations, elementary theorems on the roots of an equation, solution of equations by graphs, trigonometric solution of the cubic equation, Descartes' rules, Sturm's theorem, solutions of numerical equations, determinants, symmetric functions of the roots, ruler and compass constructions. Prerequisites: Mathematics 371 and Calculus, or the approval of the department. Three lectures.

*421. *Advanced Calculus.* (3) Partial differentiations, multiple integrals; line, surface and volume integrals; infinite series. Prerequisite: Mathematics 263. Three lectures.

422-3. *Analytic Geometry of Space.* (6) Planes and lines in space; polar, spherical, and cylindrical coordinates; forms, classification, and properties of quadric surfaces; quadric surfaces in tetrahedral coordinates; transformation of space. Prerequisite: Consent of the Department. Three lectures.

450. *Senior Project Writing.* (3) Individual student research, study, compilation, and presentation of special mathematical topics and related problems selected by the student and approved by the Department. Required of all prospective graduating seniors in the department. Prerequisite: Senior standing. Conference hours arranged.

*451-2-3. *Introduction to Analysis.* (9) Basic properties of the real number system; theory of limits, continuous functions, uniform continuity, and convergence; integration, differentiation, function of several real variables, implicit function theory. Prerequisite: Mathematics 263. Three lectures.

*461. *Elementary Theory of Numbers.* (3) Number systems, divisibility, congruences, theorems of Fermat and Wilson, primitive roots, indices, quadratic reciprocity. Prerequisite: Consent of the department. Three lectures.

*462-463. *Differential Equations.* (6) Classification and solution of common types of elementary differential equations; application of ordinary differential equations to problems arising i nengineering and the physical sciences; introduction to partial differential equations. Prerequisite: Mathematics 263. Three lectures.

471. *The Teaching of Mathematics in the Secondary Schools.* (3) Lectures, discussions and reports on problems connected with the content and methods of mathematical instruction in the junior and senior high schools. Emphasis is on effective techniques of developing basic concepts in mathematics. Prerequisite: Calculus and/or approval of the Department. Three lectures.

Graduate

501-2-3. *Functions of a Complex Variable.* (9) The algebra of complex numbers and their geometric representation, conformal mapping, power series, properties of analytic series. Cauchy's theorem; Taylor's series; Riemann surfaces. Prerequisite: Mathematics 451-2 or 421. Three lectures.

511. *Thesis Writing.* (3)

512. *Thesis.* (3)

521. *The Teaching of Algebra.* (3) Designed for teachers of algebra. Includes lectures, discussions, and reports on the following topics: the objectives of algebraic instruction, fundamental concepts in algebra, methods of presenting the subject, multi-sensory aids, relationship between algebra and other fields of knowledge, and topics in advanced algebra useful to teachers. Prerequisite: Consent of the department. Three lectures.

522. *The Teaching of Geometry.* (3) Designed for teachers of geometry. Includes lectures, discussions and reports on the following topics: the objectives of instruction in geometry, the nature and types of geometric reasoning and its relations to reasoning in other fields, current trends in the teaching of geometry. Prerequisite: Consent of the department. Three lectures.

Mathematics 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.

531-2. *Intrduction to Advanced Geometry.* (6) An elementary and essentially synthetic treatment of the fundamentals of projective geometry covering projectivity and perspectivity, homogeneous coordinates, cross ratios ,and collineations. Prerequisite: Consent of the department. Three lectures.

541-2. *Mathematical Statistics* (6) The mathematical foundations of elementary statistical methods and their applications. Discrete and continuous distributions; probability; correlations, regression and statistical independence; foundations of sampling theory; significance tests. Prerequisite: Consent of the department. Three lectures.

551-2. *Introduction to Higher Algebra.* (6) A study of the fundamental concepts of modern algebra, symmetric functions, linear dependence, invariants, groups, rings, integral domains, fields. Prerequisite: Mathematics 371. Three lectures.

561. *Vector Analysis.* (3) The algebra and calculus of vectors; the integral theorems of Gauss, Green and Stokes; partial differential operators. Applications. Prerequisite: Mathematics 462-3. Three lectures.

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*Approved for graduate credit.

DEPARTMENT OF SCIENCE EDUCATION

WILLIAM N. JACKSON, Ph.D., *Head*

The department's program is designed to meet the needs of three groups of students: 1. Those who wish to qualify for secondary school science teaching with certification in several science fields. 2. Those who desire a four-year general curriculum built around a core of natural science, which might be used to fulfill the entrance requirements of schools which prepare technicians for the several areas of medicine, health, earth sciences, and allied professions, and the scientific branches of government service; and 3. 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 following degrees: Bachelor of Science with a major in science education and Bachelor of Arts with a major in geography. The curricula leading to the Bachelor of Science degree are designed for prospective teachers of science while that leading to the Bachelor of Arts degree is planned for those persons who do not intend to teach. A graduate program culminating in the Master of Science degree in science education is offered for science teachers.

There are two programs designed for undergraduate majors in science education. The first program, designated as the "Mathematics and Physical Science" curriculum, provides training for a student who desires teacher certification 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 for such certification.

Of the 107 quarter hours required in the major area (mathematics, physics, chemistry, earth sciences and science education), 38 hours must be in courses at the junior and senior level. The total program requiring 196 quarter hours, must include a minimum of 71 quarter hours of courses at the 300-400 level.

The second program, designated as the "Science" curriculum, provides training for a student who desires teacher certification 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 for certification: biology, chemistry, geology and physics. The student may include integrated science courses for credit toward certification.

Of the 88 quarter hours required in the major area (natural sciences and science education), 32 hours must be in courses on the junior and senior levels. The total program requiring 198 quarter hours, must include a minimum of 68 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.

The graduate program in science education is designed to lead to the Master of Science degree and 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.

In general, this program will include graduate work in a natural science, advanced courses in education and the teaching of science, and a research project. It is assumed that all participants 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 or minor in a natural science with an average of B or better.

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. (women)	1 1/3	1 1/3	1 1/3
Phy. Educ. (Men) 11-2-3	1/3	1/3	1/3
Air Science 151-2-3 (M)	1	1	1
	16 1/3	16 1/3	16 1/3

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 221-2-3	4	4	4
Mathematics 200	3		
Chemistry 211-2, 361	4	4	4
Health 212, Soc. St. 114		3	3
Phy. Educ. (Women) 20's-40's	1 1/3	1 1/3	1 1/3
Phy. Educ. (Men) 20's-40's	1/3	1/3	1/3
Air Science 251-2-3 (M)	1	1	1
	18 1/3	18 1/3	18 1/3

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Religion 301, Phil. 323	3		3
Educ. 301, 387, 462	3	3	3
Psychology 312		3	
Mathematics 311, 471	3		3
Geology 361			4
Geography 171-2	3	3	
Mathematics 261-2	5	5	
Health 151		3	
Education 371			3
Elect. (300-400 course)			3
	17	17	19

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Sci. Educ. 471, 425	3		3
Education 472		6	
Psychology 463			3
Nutrition 212		3	
Sci. Educ. 450, 427	3		3
Geography 261	3		
Science Electives (300-400 courses)	4	4	4
	13	13	13

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
Fr. English 101-2-3	3	3	3
Soc. Stud. 111-2-3	3	3	3
Phy. Educ. (Women) 11-2-3	1 1/3	1 1/3	1 1/3
Phy. Educ. (Men) 11-2-3	1/3	1/3	1/3
Air Science (M) 151-2-3	1	1	1
	16 1/3	16 1/3	16 1/3

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Math 200; Soc. Stud. 114; Health 151	3	3	3
Physics 221-2-3	4	4	4
Biology 101-2-3	4	4	4
English 211-2-3	3	3	3
Education 201	3		
Psychology 242-3		3	3
Phy. Educ. (Women) 20's-40's	1 1/3	1 1/3	1 1/3
Phy. Educ. (Men) 20's-40's	1/3	1/3	1/3
Air Science (M) 251-2-3	1	1	1
	18 1/3	18 1/3	18 1/3

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Biology 202-3, 241	4	4	4
Chemistry, 211-2, 361	4	4	4
Educ. 301, 371, 387	3	3	3
Health 212, Nut. 212	3	3	
Relig. 301, Phil. 323		3	3
Psych. 312, Educ. 462	3		3
	17	17	17

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Sci. Educ. 471, 425	3		3
Sci. Educ. 427, 450	3		3
Psych. 463, Educ. 472	3	6	
Science Electives (300-400 Courses)	8	4	4
Educ. Electives (300-400 Courses)		3	3
	17	13	13

COURSES IN SCIENCE EDUCATION

Undergraduate

121-2-3. *Introduction to Natural Science.* (12) Basic principles from the physical and biological sciences, the place of science in human culture, and the use of the scientific method in problem solving developed through experiences in the classroom, field, and laboratory. The first two quarters are devoted to selected experiences in the areas of astronomy, geology, physics, and chemistry. The third quarter deals with biological phenomena. Three lectures and one two-hour laboratory period. Laboratory fee $2.00.

301-2-3. *Science for Elementary Teachers.* (9) A three quarter course which combines a survey of the science subject matter suitable for elementary schools with the methods of teaching this science. Three lectures. (Formerly Science 101-2-3.)

*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 471 and a major or minor in a natural science. Six laboratory periods. Laboratory fee $2.00.

*427. *Philosophy of Science.* (3) (Formerly Science Education 422). Consideration of the evidence and logic upon which contemporary scientific concepts rest, and the interplay of ideas, stresses, and new vistas that have caused continuous changes. The course assumes that the student possesses a broad background in the fundamental science subjects. Recommended for senior science majors and graduate students in the sciences. The course may be taken for elective credit in science or secondary education. Three lecture periods.

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.

471. *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. Prerequisites: Psychology 312; Education 387, 371; and completion of at least 75 per cent of the major work in science. Three lecture periods.

Graduate

500. *Seminar: Current Problems in Science Teaching.* (No credit.) Required of all graduate students in the department. Meets twice monthly throughout the year.

501. *Problems in the Teaching and Supervision of Science in Secondary Schools.* (3) The place of science in the 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. Three lecture periods.

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. It is for those graduate students concerned with the problems of teaching elementary science. Students who plan to do thesis problems in this area will be guided in the preparation of their preliminary plans. 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.

511-2. *Research and Thesis in Science Education.* (6) The course is divided into two parts:

511. *Principles of Research.*

512. *Preparation of Research Report.*

The first part will be taken in Education 511. The other part will be completed on an individual basis with the assistance of the adviser.

CURRICULUM IN GEOGRAPHY

M. O. Tyson, *Coordinator*

A student who enrolls in the Bachelor of Arts program with a major in geography is expected to complete 48 quarter hours in geography and a minimum of 27 hours in other natural sciences and mathematics. Required courses in geography are 171-2-3, 201, 261, 451, and 462-3. In addition the program includes 18 to 27 hours of foreign language, thirty-three hours of social sicence in the areas of history and political science, and fifteen hours of economics and psychology. Of the 48 hours in the major area, 33 hours must be in courses at the junior and senior level. The total program requiring 194 quarter hours, must include a minimum of 63 quarter hours of courses at the 300-400 level.

Upon completion of this program the student will be qualified for employment in such positions as: (1) junior cartographer or weather observer in government agencies, (2) planning board assistant for municipal or state projects.

BACHELOR OF ARTS CURRICULUM IN GEOGRAPHY

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 101-2-3	3	3	3
Geography 171-2-3	3	3	3
History 121-2-3	3	3	3
Mathematics 161-2-3	5	5	5
Phys. Educ. 11-12-13 (Women	1⅓	1⅓	1⅓
Phys. Educ. 11-12-13 (Men)	⅓	⅓	⅓
Air Science I (Men)	1	1	1
	15⅓	15⅓	15⅓

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 211-2-3	3	3	3
Foreign Language	3	3	3
Economics 211-2-3	3	3	3
Geog. 201, 261, Soc. 221	3	3	3
Physics 221-2-3	4	4	4
Phys. Educ. 20's to 50's (Men)	⅓	⅓	⅓
(Women	1⅓	1⅓	1⅓
Air Science II (Men)	1	1	1
	17⅓	17⅓	17⅓

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Geog. (300-400 level including 451, 462)	6	6	6
Psychology 221-2	3	3	
Minor (300-400 Level)	3	3	3
Pol. Sci. 221-2-3	3	3	3
Foreign Language	3	3	3
	18	18	15

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
American Hist. 201-2-3	3	3	3
Geography 450, 463		3	3
Political Science 313	3		
Major (300-400 Level)	3	3	3
Minor (300-400 Level)	3	3	3
Foreign Language or Elec. (300-400 Level)	3	3	3
	15	15	15

COURSES IN GEOGRAPHY

171-2-3. *Elements of Geography.* 9) This is a course in the fundamentals of physical and human geography. A survey of regional patterns of settlement interpretative of lands and other basic resources is the culmination of this course.

200. *Geography Laboratory.* (Non-credit) This laboratory is designed to aid students who have difficulty in understanding the geographical method. It is open to all undergraduates of the University who feel that they need assistance in understanding the geographical method.

201. *Economic Geography.* (3) This course emphasizes the distribution of economic products. Communication, domestic and foreign, are an integral part of the course.

261. *Elements of Weather.* (3) A critical study of the atmosphere. This course will consider weather elements, weather observation, air masses, and their importance to weather.

262. *Conservation.* (3) A study of the methods of conservation of natural resources, their importance, and the need for their conservation. This course will include a study of the land as an economic factor with a consideration of the character and location in land utilization and value. Consideration will be given in regional and national planning for resource utilization. No prerequisites.

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. (For Business Students only.)

361. *Geology.* This course will deal with a study of the materials of the earth, the geologic processes and how they affect land forms and soil distribution. Three recitations and 1 laboratory or field period. Credit 4 hours.

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.

382. *Cities.* (3) Geographic factors in the origin and growth of urban centers. Analysis and synthesis of the economic and physical structure; function of trade centers in the light of their geographic setting; a real expansion; intra- and inter-trade relations; integration with avenues of communication and city planning.

391. *Political Geography.* (3) A study of political relations, territorial aims, and aspirations, boundaries and raw materials.

401. *The Middle East and India.* (3) Resources and economic activities in their regional setting; aggressive policies in territorial expansion.

402-3. *Geography of the South.* (6) A regional study of the South generally during the first quarter. Emphasis is on the sequence of land occupation. During the second quarter, a detailed study of Tennessee, the Tennessee Valley Authority (TVA), and adjoining areas is given.

411. *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.

413. *World Resources.* (3) A study of the natural conditions and resources in the major areas of international concern. Special emphasis will be given resources needed by the United States.

421. *China.* (3) Regions and resources of China, with special emphasis on differences and similarities of each cultural and physical region. The placing of China as a whole in its proper continental and world framework is the final objective.

422. *The U.S.S.R.* (3) A geographical analysis of the terrain, resources and economic development of Russia and those areas in Europe and Asia largely under Russian influence.

450. *Geography.* (3) Senior Project. The writing of a special paper or the preparation of some special project in Geography. Required of all graduating seniors.

451. *Cartography.* (3) Drawing of projections. The study of types of projections and the best use of each is included. Some attention is given to the preparation of graphs.

462. *World Climates.* (3) A course designed to effect a concept of the distribution of climates over the world and the reasons for this distribution. Of major importance in this course will be; controls of climate, a climatic classification by Koppen, and the relationship of man's activities and world climates.

463. *Physiography.* (3) Study of the land features of the earth and their development. Additional prerequisite: Geography 181-82.

471. *Teaching of Geography.* (3) Principles of organizing and presenting geographic materials for teaching purposes in secondary schools.

DEPARTMENT OF SOCIAL SCIENCES

A. A. THOMPSON, Ph.D. *Head*

The Department of Social Sciences offers four curricula leading to the Bachelor's degree, namely History, Political Science, Sociology, and Social Administration.

The curriculum in History offers courses of study at the under-graduate and graduate level.

The curriculum in Political Science offers courses of study at the under-graduate level and at the graduate level leading to the degrees of Bachelor of Science, Bachelor of Arts, and Master of Arts in Political Science. The curriculum also offers courses of study leading to teacher certification either for individual endorsement or group certification.

The curriculum in Sociology offers courses of study at the under-graduate and at the graduate levels leading to the degrees of Bachelor of Arts, Bachelor of Science and Master of Science in Sociology. The Sociology curriculum also offers courses of study leading to teacher certification in terms of individual certification and group certification.

The curriculum in Social Administration offers courses of study at the under-graduate level leading to the degrees of Bachelor of Arts and Bachelor of Science.

CURRICULUM IN HISTORY

MERL R. EPPSE, *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.

A student who makes history his major will be expected to complete 48 quarter hours, not including 121-2-3, covering the courses in American and European History, specifically, History 201-2-3 and History 301-2-3. In addition, each student is expected to fulfill all college requirements. Those students who desire the Bachelor of Arts degree in history must fulfill 57 quarter hours included in the Liberal Education Core, which include: 9 quarter hours in the communications area, 15 quarter hours in the humanities area, 12 quarter hours

in the social sciences, 12 quarter hours in the sciences, and 9 quarter hours in mathematics; and in addition include the following divisional requirements: History 121-2-3; 201-2-3; 211-12-13; 301-2-3; 341-2; and 491 and/or 492.

Instruction in history is designed to give to the student within the first two years a knowledge of the important events, characters and development in the past of mankind. To achieve this aim, the curriculum requires that all majors have a general understanding of certain related fields.

A student who makes history his minor will be expected to complete the same amount of prerequisite work as that indicated in the preceding paragraphs. In addition, each minor must complete nine hours of history in a prescribed area. Hence, a student with a minor in history must have a minimum of 27 hours.

All majors in history are required to select a minimum of 15 quarter hours on the 300 and 400 levels from the following three areas: namely, (1) American History—United States (Colonial, Middle, Recent and Regional), (2) European History, and (3) World Civilization and Culture.

A major in history may include History 121-2-3; 201-2-3; 211-12-13; 301-2-3; 341-2; 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 221-2-3.

A total of 192 quarter hours with an average grade of "C" or above is required for graduation.

BACHELOR OF ARTS CURRICULUM—NON-TEACHING

Curriculum in History

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
History 101-2-3 (Freshman Orientation)	1	1	1
English 101-2-3	3	3	3
Foreign Language	3	3	3
History 121-2-3	3	3	3
Science (Biology, Chemistry, or Natural Science	4	4	4
Mathematics 111-2-3 or 200	3	3	3
Physical Ed. 11-12-13 (Men)	1/3	1/3	1/3
(Women)	1 1/3	1 1/3	1 1/3
Air Science I (Men)	1	1	1
	18 1/3	18 1/3	18 1/3

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 211-12-13	3	3	3
Foreign Language	3	3	3
Social Studies (Economics, Polit. Sci., Sociology or Geography)	3	3	3
History 201-2-3	3	3	3
Psych. 221-2	3		3
Elective		3	
Physical Ed. 20's to 50's (Men)	1/3	1/3	1/3
(Women)	1 1/3	1 1/3	1 1/3
Air Science II (Men)	1	1	1
	16 1/3	16 1/3	16 1/3

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Political Science	3		
History 341-2	3	3	0
History 301-2-3	3	3	6
Minor	3	3	3
Foreign Language	3	3	3
Electives	3	6	3
	18	18	15

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
History 491 and/or 492	3	3	
History (300-400)	3	3	3
Minor	3	3	3
History 450		3	
Electives	9	6	9
	18	18	15

CURRICULUM FOR TEACHER CERTIFICATION

Curriculum in History

Freshman Year	Quarter Hours Credit		
Name of Course	*I*	*II*	*III*
English 101-2-3	3	3	3
Social Studies 111-12-13	3	3	3
Mathematics 111-12-13 or 200	3	3	3
Health 211-12-13	3	3	3
Art 133	3		
Physical Education 11-12-13 (Men)	1/3	1/3	1/3
(Women)	1 1/3	1 1/3	1 1/3
Air Science I (Men)	1	1	1
Electives		3	3
	16 1/3	16 1/3	16 1/3

Sophomore Year	Quarter Hours Credit		
Name of Course	*I*	*II*	*III*
English 211-12-13	3	3	3
History 121-2-3	3	3	3
Social Studies 114	0	0	3
Music 131	3	0	0
Science (Biology, Chem., Physics, or Science Educ.)	4	4	4
Education 201	3	0	0
Psychology 242	0	3	0
Psychology 243	0	0	3
Physical Education 20's to 50's (Men)	1/3	1/3	1/3
(Women)	1 1/3	1 1/3	1 1/3
Air Science (Men)	1	1	1
	17 1/3	14 1/3	17 1/3

Junior Year	Quarter Hours Credit		
Name of Course	*I*	*II*	*III*
History 201-2-3	3	3	3
Education 301	3		
Psychology 312		3	
History 341-2		3	3
Political Science 221-2-3	3	3	3
Economics or Sociology	3	3	3
Education 371		3	
Electives	3		6
	15	18	18

Senior Year	Quarter Hours Credit		
Name of Course	*I*	*II*	*III*
History 301-2-3	3	3	3
History 450	3		
History 471)Educ. 471)	3		
History 491 or 492	3	3	
Education 462	3		
Education 387		3	0
Education 472		6	0
Psychology 463			3
Electives	3	3	12
	18	18	18

COURSES IN HISTORY

Undergraduate

101-2-3. *Freshman Orientation.* (3) A course for freshmen and new students. It includes orientation to the University, to the area of history, and a survey of library resources and techniques.

121-2-3. *The Growth of Civilization.* (9) A study of the contributions that all races and nations have made to our present civilization. Assigned readings, discussions, reports, and quizzes will comprise the type of work in this course. (Required of all Freshmen.)

200. *History Laboratory.* (Non-credit) This laboratory is designed to aid students who have difficulty in understanding the historical method. It is open to all undergraduates of the University who feel that they need assistance in understanding the historical method.

201-2-3. *American History.* (9) European background of the beginnings and establishment of the United States in 1789. The beginning of our National State from 1789-1877. The development and significance of Jeffersonian Democracy; the war of 1812, the growth of Nationalism; the westward movement; the controversy over the Negro and his place in a democracy; the Civil War and Reconstruction. The emergence of the industrial life and the influence of the machine in American civilization; the problem of rapidly changing environment; industrial consolidation; rise of organized labor; rural trends and the Negro; the flight of the Negro to the city; American imperialism; education and religion; the plight of a democracy in a collective society; the Second World War and contemporary Society.

211-12-13. *History of England.* (9) Not open to Freshmen. History of England to 1588; History of England, 1588-1763; History of England since 1763.

301. *Foundations of Modern Europe.* (3) This course deals with the important phases of the Protestant Revolt; the economic, political, and the religious background; the Lutheran and Reform Movements, with special reference to their political and theological trends; the early expansion of Europe.

302. *Foundations of Modern Europe.* (3) A study of the rise of Russia, 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.

303. *Foundations of Modern Europe.* (3) A study of European History from 1815-1870. The beginning of the Industrial and Social Revolution of the nineteenth century; Vienna Peace Settlement; political reaction and revolution; the creation of Germany and Italy; the struggle of 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.

341-2. *History of Tennessee.* (6) A course in the cultural, economic, and political development of the State of Tennessee. Emphasis will be placed on the part the Negro has played.

361. (333) **Constitutional History of the United States to 1787.* (3) The origin, development and operation of the Constitution of the United States with attention to the factors which have influenced constitutional changes and the historic cases in which the provisions and principles of the Constitution have been interpreted and applied by the courts. Prerequisite: History 201-2-3 or Political Science 221-2-3.

362. **Constitutional History of the United States 1787-1816.* (3) Continuation of History 361.

363. **Constitutional History of the United States 1816-Present.* (3) Continuation of History 362.

371. (403) **Economic History of the United States 1603-1860.* (3) A study of the economic development of the United States from the colonial period to the present with particular emphasis on the influence of economic forces in the shaping of social and political growth and change. Prerequisite: History 201-2-3.

372. **Economic History of the United States 1865-Present.* (3) Continuation of History 371.

381-2. (312) **Civil War and Reconstruction.* (6) The study of the factors leading to the secession and an analysis of the problems of reconstruction. Three quarter hours each.

385-6-7. *Vital Topics.* (6) The study, analysis, and interpretation of vital topics in the changing world of today. The vital current economic, social, religious, and political problems that confront the world and the United States will be presented, analyzed, discussed, and interpreted. Representatives from each Division may participate jointly in the conduct of the course. Two hours credit each quarter. A student may earn a maximum of six credits. He may repeat the course without credit at his option.

391-2-3. **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 precursor of Marxian Socialism. Russia's historic mission in foreign affairs will be employed as a guide toward an understanding of her present-day aims.

401-2-3. **Contemporary World History.* (9) The background, causes and events of the First World War; the Paris Peace Conference and its later problems; the League of Nations; the rise of Communism, Fascism, Nazism; development in education, art, literature and music and religion; the East in Revolt; the new totalitarian states; and finally, the second world war and present issue.

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 and development of those major policies which have determined American international action.

433-4. **The British Empire.* (6) A study of the rise and expansion of the British Empire and its influence on world history of 1783. Topics: The establishment of colonies in the East and West Indies; India, Africa, and North America under the Stuarts; the struggles with Spain, Holland, and France, for world domination; Merchantilism and Colonial Administration; the American revolution since 1783; the lapse and revival of imperial spirit in Egypt, Australia, New Zealand, and Canada; Protectorates, Mandates, crown colonies, and "spheres of influence," the world importance of the British Empire; and the recent developments in British Dominion Government.

442-3. **Renaissance and Reformation.* (6) The first quarter of this course will be a survey of Europe between 1250 and 1600. Special attention will be given to the Renaissance, the artistic, literary, political, and commercial growth. During the second quarter special emphasis will be given the Protestant Reformation and the Catholic Counter Reformation.

450. *History.* (3) The writing of senior projects of history.

451-2-3. **Latin American History.* (9) A general study of the history of Mexico, Central and South America. (1) The Colonial Period, wars for independence. (2) Recent political history with the economic resources and trade relations emphasized. (3) The development of the foreign relations as well as the Western Hemisphere ideology of solidarity and mutual aid.

471. *The Teaching of History.* (3) The theory materials for the teaching of history will be reviewed. Open to majors in the department who plan to teach. Assigned readings, personal investigations, field work and demonstrations in class.

481-2-3. **World Civilizations.* (9) The study of the political, economic, social and international relations of the Far East, Near East, India, and Africa. The relation of these countries and the role each played in the expansion of Western people will be emphasized.

491. (411) **The Negro in American History.* (3) A study of the role and impact of the Negro in the exploration, discovery and early period, and the growth of American life to 1865.

492. (411) **The Negro in American History.* (3) The part played by the Negro since 1865 in the economic, political, and cultural development of the **United States.**

GRADUATE

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, dependent upon the area of history in which they desire to specialize.

501-2-3. *Seminar in American History.* (9) An intensive study of selected problems in the history of the United States from 1606 to 1900.

511. *Historical Method.* (3) The principles and techniques of research as applied to the study of history; illustrative problems in the preparation of a monograph. Required of all candidates for the advanced degree.

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

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

531-2. *Recent United States History.* (6) The study of contemporary problems in the United States with special emphasis on the social, economic, and political phases of American life.

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.

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

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

571-2-3. *Seminar in World Civilization and Culture.* (9) The intensive study of selected social, economic, political and international problems of the nations of the Near East, Far East, Africa and Latin America. Prerequisites: Twenty-seven hours in History, of which nine must be in American History.

NOTE: Course numbers shown in parenthesis are numbers in the catalogs of previous years.

(*)Asterisks indicate that the course may be considered for graduate credit.

CURRICULUM IN POLITICAL SCIENCE

S. O. Bryant, Ph.D., *Coordinator*

The general objectives of the Curriculum in Political Science are: (1) to provide a borad and basic background for understanding and evaluating functions and problems of states, their governments, citizenship and human relationships; (2) to provide a broad over-all picture of the economic, social and psychological factors which underlie political phenomena; (3) to prepare teachers and investigators for instructional and research positions and government service; and (4) to provide the background for students who intend to specialize in social science, or in law.

The Curriculum in Political Science offers courses of study at the undergraduate and graduate levels leading to the degrees of Bachelor of Science, Bachelor of Arts and Master of Arts in Political Science.

Students are required to take a minimum of one major and one minor.

Students desiring to qualify for certification may do so by selecting courses prescribed by the State Board of Education, Division of Certification. Two types of certification are offered: (a) individual certification and (b) group certification. In addition, provisions are made for a second teaching area. Unless a student has initially selected a course of study leading to certification, additional hours will be required.

In addition to the University requirements for graduation, the minimum Curriculum requirements are: (1) 206 quarter hours for the Bachelor of Arts degree, 194 quarter hours for the Bachelor of Science degree, including individual or group certification, of which a minimum of 66 quarter hours for each degree must be completed in 300 and 400 level courses; (2) 48 quarter hours in the Curriculum of which a minimum of 27 quarter hours must be completed in 300 and 400 level courses for the Bachelor of Arts degree; (3) 30 quarter hours in Political Science of which a minimum of 21 quarter hours must be completed in 300 and 400 level courses for individual certification; (4) 54 quarter hours in the Social Studies of which a minimum of 15 quarter hours must be completed in 300 and 400 level courses for group certification.

Students with a minor in the Curriculum must complete a minimum of 18 quarter hours in 300 and 400 level courses in addition to the basic courses, Political Science 221-2-3.

BACHELOR OF ARTS

Freshman Year	Quarter Hours Credit		
Name of Course	I	II	III
English 101-2-3	3	3	3
*Foreign Language	3	3	3
History 121-2-3	3	3	3
Science (Chemistry, Biology or Physics)	4	4	4
Mathematics 111-2-3	3	3	3
Phy. Ed. (W) 11-12-13	1 1/3	1 1/3	1 1/3
Phy. Ed. (M) 11-12-13	1/3	1/3	1/3
Air Science 151-2-3 (Men)	1	1	1
	17 1/3	17 1/3	17 1/3

Sophomore Year	Quarter Hours Credit		
Name of Course	I	II	III
English 211-2-3	3	3	3
*Foreign Language	3	3	3
Pol. Sci. 221-2-3	3	3	3
History 201-2-3	3	3	3
Psychology 221-2	3	3	
Psychology 312			3
Phy. Ed. (W) 20's to 50's	1 1/3	1 1/3	1 1/3
Phy. Ed. (M) 20's to 50's	1/3	1/3	1/3
Air Science 251-2-3 (Men)	1	1	1
	16 1/3	16 1/3	16 1/3

Junior Year	Quarter Hours Credit		
Name of Course	I	II	III
Economics 211-2-3	3	3	3
Speech 202-3		3	3
Geography 171-2	3	3	
Psychology 321			3
Sociology 211-2-3	3	3	3
Pol. Sci. 321-2-3	3	3	3
Pol. Sci. 341-2-3	3	3	3
Pol. Sci. 313	3		
	18	18	18

Senior Year	Quarter Hours Credit		
Name of Course	I	II	III
Music 131		3	
Health 151	3		
History 491	3		
Geography 391	3		
Sociology 463			3
Major	6	6	6
Minor		6	3
Electives	3	3	3
	18	18	19

CERTIFICATION IN POLITICAL SCIENCE

Individual Endorsement

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
Art 133		3	
Natural Science (Biology, Chemistry, etc.)	4	4	4
Music 131			3
Mathematics 111-2-3	3	3	3
Phy. Ed. (W) 11-12-13	1 1/3	1 1/3	1 1/3
Phy. Ed. (M) 11-12-13	1/3	1/3	1/3
Air Science 151-2-3	1	1	1
	14 1/3	17 1/3	17 1/3

Sophomore Year	Quarter Hours Credit		
Name of Course	I	II	III
History 201-2-3	3	3	3
Health 151, 211	3		3
Pol. Sci. 221-2-3	3	3	3
Education 201		3	
Phy. Ed. (W)	1 1/3	1 1/3	1 1/3
Phy. Ed. (M)	1/3	1/3	1/3
Air Science 251-2-3	1	1	1
English 211-2-3	3	3	3
Ed. Psychology 242		3	
Ed. Psychology 243			3
Social Studies 114	3		
	16 1/3	16 1/3	16 1/3

*Language requirements vary from 9to 27 hours, depending upon the student's proficiency in a given language.

Junior Year	Quarter Hours Credit		
Name of Course	I	II	III
Pol. Sci. 321-2-3	3	3	3
History 211-2-3	3	3	3
Education 301			3
Psychology 312		3	
Education 371	3		
Pol. Sci. 341-2-3	3	3	3
Education 387, 462	3	3	
Sociology 211-2-3	3	3	3
	18	18	15

Senior Year	Quarter Hours Credit		
Name of Course	I	II	III
History 301-2-3	3	3	3
Philosophy 323	3		
Education 471, 472		3	6
Electives	3	6	6
History 491	3		
Pol. Sci. 313		3	
Psychology 463	3		
	15	15	15

Group Endorsement

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
Natural Science (Biology or Chemistry)	4	4	4
Mathematics 111-2-3	3	3	3
Art 133		3	
Music 131			3
Phy. Ed. (W) 11-12-13	1 1/3	1 1/3	1 1/3
Phy. Ed. (M) 11-12-13	1/3	1/3	1/3
Air Science (M) 151-2-3	1	1	1
	14 1/3	17 1/3	17 1/3

Sophomore Year	Quarter Hours Credit		
Name of Course	I	II	III
History 201-2-3	3	3	3
Health 151-211	3		3
Pol. Sci. 221-2-3	3	3	3
Education 201		3	
English 211-2-3	3	3	3
Soc. Studies 114	3		
Ed. Psychology 242		3	
Ed. Psychology 243			3
Phy. Education (W)	1 1/3	1 1/3	1 1/3
Phy. Education (M)	1/3	1/3	1/3
Air Science 251-2-3	1	1	1
	16 1/3	16 1/3	16 1/3

Junior Year	Quarter Hours Credit		
Name of Course	I	II	III
Pol. Sci. 321-2-3	3	3	3
History 301-2-3	3	3	3
Education 301	3		
Education 371		3	
Psychology 312			3
Geography 171-2-3	3	3	3
Education 387, 462	3	3	
Psychology 463			3
Sociology 211-2-3	3	3	3
	18	18	18

Senior Year	Quarter Hours Credit		
Name of Course	I	II	III
Economics 211-2-3	3	3	3
Pol. Sci. 313	3		
Education 471-72		3	6
History 491	3		
Electives	6	6	6
	15	12	15

COURSES IN POLITICAL SCIENCE

Undergraduate

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. *American Government: National.* (6) 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. *American Government: State and Local.* (3) An analysis of the structure, principles and operations of the state and local units of government. Illustrative material is drawn largely from Tennessee.

312. *The Legislative Process.* (3) An examination of the structure and methods of transacting business in the American Congress and State Legislatures.

313. *Tennessee State Government.* (3) Study of Tennessee government from the functional point of view emphasizing political activities, taxation, education, social welfare and economic services of the government.

321-2-3. *Comparative European Government.* (9) An analysis of the government of selected European countries with special attention given to the development of their political systems both in theory and practice. Comparison with American institutions emphasized.

331-2. *Latin American Government.* (6) An analysis of the political and constitutional development of the Latin American states with emphasis on political concepts, policies, and international relations.

333. *Far Eastern Government.* (3) Constitutional and political development in China and Japan. Consideration given to policies and international relations.

341-2-3. *International Relations.* (9) An examination of the present-day relations and problems among states of the world and the major factors which underlie and influence these relations. Prerequisites: Political Science 321-2-3.

351. *Government of the British Commonwealth of Nations.* (3) An examination of the government of the United Kingdom and the organization of that government as it bears upon the Commonwealth. Attention focused on an analysis of the problems of the Dominions and dependent areas with special consideration given to the problems of imperial strategy and their bearings on international policies.

353. *Government of Russia.* (3) Deals with the theory, structure, functions, operations, powers, problems and trends of the Russian government under Soviet rule.

362. *American Political Parties and Policies.* (3) An analysis of the dynamics of American politics with emphasis upon the factors influencing the formation of public opinion and the role of pressure groups.

363. *American Political Parties and Policies.* (3) Designed to analyze the formation of political parties; nominations and elections; methods of representation and voting; and the importance of parties in American government. Prerequisite: Political Science 362.

373. *Propaganda and Public Opinion.* (3) An analysis of the purposes and techniques of propaganda and the functions and expression of public opinion.

*421-2-3. *Public Administration.* (9) Principles of public administration; structure and organization; financial management; administrative responsibility; and the relation between the administration and other branches of government in the United States.

*431-2-3. *American Constitutional Law.* (9) Devoted to a study of the sources, principles and powers of government in the United States as embodied in the Constitution and judicial decisions in leading cases.

*441-2. *International Law.* (6) A study designed to examine the rights and duties of states in their normal relations; war neutrality; intervention and blockade.

450. *Senior Project Writing.* (3)

*451-2. *Government and the Economic Order.* (6) Deals with constitutional principles as they apply to the regulation of business. Emphasis placed on Federal and State regulation of public utilities, labor, securities, communications, transportation, housing, commerce and social security.

*453. *American Diplomacy.* (3) Examines the more important principles of American diplomacy and their applications as basis for the understanding of the foundation of American foreign policy. Prerequisites: Political Science 341-2-3.

*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 eighteenth century revolutions as basis for contemporary systems of Democracy, Communism and Fascism.

Graduate Courses

General Prerequisites Courses are offered only to graduate students who have thirty-six quarter hours in the department of which a minimum of fifteen quarter hours must be in one field.

511. *Methods of Research in Political Science.* (3) Required of majors in political science.

512. *Thesis Writing.* (3) Required of majors in political science.

521-2-3. *American Constitutional Development.* (9) A detailed study of the origin, structure, development, and operation of the American Constitutional system. Special consideration given to the role of the legislative, executive, and judicial branches of government in constitutional change.

531-2-3. *Seminar in Compartive Government.* (9) Devoted to a critical examination and appraisal of selected democratic and totalitarian states in the family of nations.

535. *Government and Politics of the Soviet Union.* (3) An intensive study of the basic political and governmental institutions; the Communist Party; economic policies; and civil rights.

*537-8. *The Government and Politics of the Far East.* (6) Designed to analyze the political and governmental institutions, domestic policies, foreign relations and basic philosophy of China, Japan, Korea, Manchuria, Siberia and India.

541-2-3. *Seminar in International Relations.* (9) A study of the major theories underlying interstate relations; the sovereign states as a member of the family of nations; nationalism in international relations; and theories and practices of imperialism.

551-2. *Administration of Justice.* (6) An inquiry into the development, organization, and procedure of our judicial system; the nature, objectives and limitations of law as administered through courts; the recognition of new powers; and the development of new doctrines in legal thinking.

561-2-3. *Seminar in Political Thought.* (9) Designed to examine, compare, and evaluate the major schools of political thought, or selected historical periods of political movements with particular reference given to the social and cultural setting in which they evolved.

571-2-3. *Seminar in Public Law.* (9) Devoted to reading and research in the field of public law. Problems and topics selected in the student's field of concentration.

581-2-3. *Seminar in Political Science.* (9) An intensive oral and written study of contemporary problems. Presents an opportunity for advanced research in the field or fields of interest to the individual student.

CURRICULUM IN SOCIAL ADMINISTRATION

A. A. Thompson, *Coordinator*

The pre-professional social work curriculum is designed to provide the student with an introductory knowledge of the generic principles, skills, and understanding of human behavior which is necessary for graduate study in social work and essential to the practice of social work as a junior worker in private and public social welfare agencies.

Students are also required to do seventy-two hours of Field Work in selected social agencies. This is a requirement of the American Association of Schools of Social Administration, which is the accrediting body and of which we are a member. The purpose of field work is to provide the student with the opportunity of applying theory to actual practice in a controlled setting under the supervision and guidance of a qualified practitioner. He is then evaluated upon the basis of his growth and development on the job.

The Curriculum of Social Administration offers the Bachelor of Science and the Bachelor of Arts Degrees.

In addition to the University requirements for graduation, the minimum Curriculum requirements are: (1) 203 quarter hours for the Bachelor of Arts degree, and 203 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 in Sociology: Sociology 211, 212, 213, 322, 412 and 451.

CURRICULUM IN SOCIAL ADMINISTRATION

Bachelor of Science

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 101-2-3	3	3	3
History 121-2-3	3	3	3
Biology 101-2-3	4	4	4
Mathematics 131-2-3 or Math. 101-2-3	3	3	3
Phy. Ed. (W)	1 1/3	1 1/3	1 1/3
Phy. Ed. (M)	1/3	1/3	1/3
Air Science I (M)	1	1	1
Geography 171-2-3	3	3	3
	17 1/3	17 1/3	17 1/3

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
Political Science 221-2-3	3	3	3
Psychology 221-2-3	3	3	3
Economics 211-2-3	3	3	3
Phy. Ed. (W)	1 1/3	1 1/3	1 1/3
Phy. Ed. (M)	1/3	1/3	1/3
Air Science II (M)	1	1	1
	16 1/3	16 1/3	16 1/3

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
History 201-2-3	3	3	3
Sociology 322		3	
Sociology 303			3
Psychology 242-3		3	3
Sociology 351	3		
Soc. Adm. 302		3	
Soc. Adm. 332		3	
Soc. Adm. 341	3		
Sociology 412		3	
Sociology 451			3
Soc. Adm. 463			3
Music 131	3		
Art 101	3		
Electives			3
	15	18	18

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Art 241		3	
Math. 311	3		
Sociology 461	3		
Social Adm. 443			3
Social Adm. 421-2-3	3	3	3
Social Adm. 482		3	
Psychology 323			3
Social Adm. 450		3	
Biology 311		4	
Electives	3		
Polit. Science 313	3		
Social Adm. 471-3	3		3
Social Adm. 433			3
	18	16	15

Bachelor of Arts

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 101-2-3	3	3	3
Foreign Language	3	3	3
History 121-2-3	3	3	3
Biology 101-2-3	4	4	4
Mathematics 131-2-3 or Math 101-2-3	3	3	3
Phy. Ed. (W)	1 1/3	1 1/3	1 1/3
Phy. Ed. (M)	1/3	1/3	1/3
Air Science I (M)	1	1	1
	17 1/3	17 1/3	17 1/3

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 211-2-3	3	3	3
Foreign Language	3	3	3
Sociology 221-2-3	3	3	3
Pol. Sci. 221-2-3	3	3	3
Psychology 221-2-3	3	3	3
Phy. Ed. (W)	1 1/3	1 1/3	1 1/3
Phy. Ed. (M)	1/3	1/3	1/3
Air Science II (M)	1	1	1
	16 1/3	16 1/3	16 1/3

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
History 201-2-3	3	3	3
Foreign Language or Economics 211-2-3	3	3	3
Psychology 242-3	3	3	
Sociology 322		3	
Social Adm. 302		3	
Social Adm. 332		3	
Social Adm. 341	3		
Sociology 412			3
Sociology 451	3		
Sociology 303			3
Social Adm. 463			3
Political Sci. 313	3		
	18	18	15

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Art 241		3	
Math 311	3		
Sociology 461	3		
Psychology 323			3
Social Adm. 421-2-3	3	3	3
Social Adm. 433			3
Social Adm. 471-3	3		3
Social Adm. 482		3	
Biology 311	4		
Social Adm. 450		3	
Electives		3	3
	16	15	15

COURSES IN SOCIAL ADMINISTRATION

Undergraduate

302. *Social Recreation I.* (3) Designed to develop skill in quiet and active games, play party games, and singing games with emphasis on the dynamics of play leadership and program planning.

303. *Social Recreation II.* (3) Designed to develop skills in the use of dramatics, folk rhythms and square dancing.

331. *Leisure and Recreation.* (3) The study of the historical development of recreation and its relationship to modern society.

332. *Recreational Agencies in the Field of Group.* (3) A study of those social agencies focusing on the group and their relationship to the group work method.

341. *Survey of the Field of Social Work.* (3) A survey of contemporary social work by functional groupings such as Case Work, Group Work, and Community Organization. Emphasis on objectives, processes and historical development of the Social Work idea.

421. *Introduction to Social Casework.* (3) A limited beginning in Social Case Work and an introductory consideration of the basic skills in working with people. Emphasis is placed on meeting needs of individuals and families, individualizing people, understanding attitudes and using community resources. Prerequisite: 341.

422. *The Interview and Case Recording.* (3) A course designed to develop skills in the techniques and methods of interviewing and recording. Special emphasis upon the understanding of one's self and generic human behavior and office procedures as it relates to the welfare office. Prerequisites: 341, 421.

423. *Field Work* (Case). (3) Supervised practice in Social Agencies emphasizing case work skills within the limitations of the agencies functioning. Prequisites: 341, 421, 422, and 463-443.

433. *Social Work and Health Problems.* (3) Elementary medical information for social workers. The course revolves around the symptoms, and etiology of common diseases; the responsibilty of the social worker to detect, report, and to organize medical care as resources in treatment. It also includes the public health agencies. Prerequisite: 341.

443. *Problems of the Aged.* (3) A course designed to present something of our population changes, to examine the financial dependence or independence of the aged, to analyze some of their needs, and to discuss the range, variety and helpfulness of the social services that are available or are being developed by, for and with the aged. Prerequisites: Soc. Adm. 341, 421, and 433.

450. *Senior Project Writing.* (3)

463. *Community Organizations.* (3) This course deals with the methods and principles involved in analyzing community needs, developing programs to meet these needs in terms of community resources and securing community interests, leadership and support. Prerequisite: 341.

471. *Introduction to Group Work.* (3) The course examines the process of Social Group Work as a basic approach and method in Social Work and acquaints the student with some of the principles, methods, and techniques of Group Work. Prerequisite: 341.

473. *Field Work.* (Group) (3) Supervised practice in selected Social Agencies which provides an opportunity for students to apply theory to actual practice. Emphasizing placement in a Group Work Agency and professional growth on the job. Prerequisites: Social Adm. 302, 303, 341, 443, 463, 471, and Art 241.

482. *Introduction to Group Leadership.* (3) Analysis of leadership as to types and purpose, with emphasis on its application to activities, age range, sex and program development. Prerequisites: 332, 341, 471, 472.

CURRICULUM IN SOCIOLOGY

A. A. THOMPSON, *Coordinator*

The general design of the department of 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, teaching 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 of Sociology offers courses of study at the under-graduate and at the graduate levels leading to the degrees of Bachelor of Arts, Bachelor of Science, and Master of Science in Sociology.

Students in the curriculum are required to take a minimum of one major and one minor.

Students desiring to qualify for certification may do so by selecting courses prescribed by the State Board of Education, Division of Certification. Two types of certification are offered: (a) individual certification and (b) group certification. In addition, provisions are made for a second teaching area. Unless a student initially selected a course of study leading to certification, additional hours will be required.

In addition to the University requirements for graduation, the minimum curriculum reuqirements are: (1) 203 quarter hours for the Bachelor of Arts degree, 203 quarter hours for the Bachelor of Science degree, including individual or group certification, of which a minimum of 66 quarter hours for

each degree must be completed in 300 and 400 level courses; (2) 45 quarter hours in the curriculum of which a minimum of 24 quarter hours must be completed in 300 and 400 level courses for the Bachelor of Arts and Bachelor of Science degrees; (3) 30 quarter hours in Sociology of which a minimum of 21 quarter hours must be completed in 300 and 400 level courses for the individual certification; (4) 54 quarter hours in the Social Studies of which a minimum of 15 quarter hours must be completed in 300 and 400 level courses for group certification.

Students who minor in the curriculum must complete a minimum of 18 quarter hours in 300 and 400 level courses in addition to the basic courses, Sociology 211, 212, and 213.

NON-TEACHING CURRICULUM IN SOCIOLOGY

Bachelor of Arts

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 101-2-3	3	3	3
Foreign Language	3	3	3
History 121-2-3	3	3	3
Biology, Chemistry	4	4	4
Mathematics 131-2-3 or Math 101-2-3	3	3	3
Physical Education (W) 11-12-13	1 1/3	1 1/3	1 1/3
Physical Education (M) 11-12-13	1/3	1/3	1/3
Air Science 151-2-3 (Men)	1	1	1
	17 1/3	17 1/3	17 1/3

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 211-2-3	3	3	3
Foreign Language	3	3	3
Sociology 211-2-3	3	3	3
Psychology 221-2-3	3	3	3
Economics 211-2-3	3	3	3
Physical Education (W) 20's to 50's	1 1/3	1 1/3	1 1/3
Physical Education (M) 20's to 50's	1/3	1/3	1/3
Air Science 251-2-3 (Men)	1	1	1
	16⅓	16⅓	16⅓

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
History 201-2-3	3	3	3
Pol. Sci. 221-2-3	3	3	3
Psychology 242			3
Speech 202		3	
Sociology 221	3		
Sociology 322		3	
Sociology 351	3		
Sociology 303			3
Sociology 393	3	3	3
Foreign Language or Music 131 and Pol. Sci. 313, Electives	3	3	3
	18	18	18

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Health 301	3		
Geography 171-2-3	3	3	3
History 300's or 400's			3
Sociology 411	3		
Sociology 461	3		
Sociology 491	3		
Sociology 442		3	
Sociology 462		3	
Sociology 450			3
Soc. Adm. 463			3
Electives	3	6	3
	18	15	15

Bachelor of Science

Freshman Year	Quarter Hours Credit		
Name of Course	I	II	III
English 101-2-3	3	3	3
History 121-2-3	3	3	3
Biology 101-2-3	4	4	4
Geography 171-2-3	3	3	3
Mathematics 131-2-3	3	3	3
Physical Ed. (W) 11-12-13	1 1/3	1 1/3	1 1/3
Physical Ed. (M) 11-12-13	1/3	1/3	1/3
Air Science 151-2-3 (M)	1	1	1
	17 1/3	17 1/3	17 1/3

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	3	3
Economics 211-2-3	3	3	3
Sociology 301	3		
Physical Ed. (W) 20's to 50's	1 1/3	1 1/3	1 1/3
Physical Ed. (M) 20's to 50's	1/3	1/3	1/3
Air Science 251-2-3 (M)	1	1	1
Electives Music 131		3	
	16 1/3	16 1/3	16 1/3

Junior Year	Quarter Hours Credit		
Name of Course	I	II	III
History 201-2-3	3	3	3
Pol. Sci. 221-2-3	3	3	3
Pol. Sci. 313			3
Philosophy 323		3	
Health 151	3		
Sociology 221	3		
Sociology 322		3	
Sociology 351	3		
Sociology 303			3
Sociology 393		3	
Psychology 242			3
Electives	3	3	3
	18	18	18

Senior Year	Quarter Hours Credit		
Name of Course	I	II	III
Health 301	3		
Sociology 472	3		
History 300's or 400's			3
Sociology 411	3		
Sociology 461	3		
Sociology 491	3		
Sociology 400		3	
Sociology 462		3	
Sociology 450		3	
Social Adm. 463			3
Sociology 332			3
Sociology 482			3
Electives	3	9	
	18	18	12

TEACHING CURRICULUM IN SOCIOLOGY

Recommended Schedule for Four-Year College Major in Sociology

Group Endorsement

Freshman Year	Quarter Hours Credit		
Name of Course	I	II	III
English 101-2-3	3	3	3
Natural Science (Biology, Physics, or Chemistry)	4	4	4
Math. 111-2-3 or Math. 200	3	3	3
Social Studies 111-2-3	3	3	3
Physical Education (W) 11-12-13	1 1/3	1 1/3	1 1/3
Physical Education (M) 11-12-13	1/3	1/3	1/3
Geography 171-2-3	3	3	3
Air Science 151-2-3 (Men)	1	1	1
	17 1/3	17 1/3	17 1/3

Sophomore Year	Quarter Hours Credit		
Name of Course	I	II	III
Social Studies 114	3		
English 211-2-3	3	3	3
Nutrition 212		3	
Education 201	3		
Health 213			3
Psychology 242-3		3	3
Economics 211-2-3	3	3	3
Physical Education (W) 20's to 50's	1 1/3	1 1/3	1 1/3
Physical Education (M) 20's to 50's	1/3	1/3	1/3
Sociology 211-2-3	3	3	3
Air Science 251-2-3 (Men)	1	1	1
	16 1/3	16 1/3	16 1/3

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
Music 131	3		
Philosophy 323 or Religion 301		3	
Psychology 312			3
Education 301	3		
Education 371	3		
Pol. Sci. 313			3
Electives	3	9	6
	18	18	18

Senior Year	Quarter Hours Credit		
Name of Course	I	II	III
History 301-2-3	3	3	3
Education 387	3		
Psychology 463		3	
Education 471		3	
Education 462	3		
Education 472			6
History 491 or 492	3		
Soc. Adm. 463		3	
Electives	6		6
	18	12	15

Individual Area Endorsement

Freshman Year	Quarter Hours Credit		
Name of Course	I	II	III
English 101-2-3	3	3	3
Natural Science (Biology, Physics, or Chemistry)	4	4	4
Math. 111-2-3 or Math. 200	3	3	3
Social Studies 111-2-3	3	3	3
Physical Education (W) 11-12-13	1 1/3	1 1/3	1 1/3
Physical Education (M) 11-12-13	1/3	1/3	/13
Air Science 151-2-3 (Men)	1	1	1
Geography 171-2-3	3	3	3
	14 1/3	14 1/3	17 1/3

Sophomore Year	Quarter Hours Credit		
Name of Course	I	II	III
Social Studies 114	3		
English 211-2-3	3	3	3
History 201-2-3	3	3	3
Psychology 242		3	
Psychology 243			3
Sociology 211-2-3	3	3	3
Pol. Sci. 221-2	3	3	
Pol. Sci. 313			3
Physical Education (W) 20's to 50's	1 1/3	1 1/3	1 1/3
Physical Education (M) 20's to 50's	1/3	1/3	1/3
Air Science 251-2-3 (Men)	1	1	1
	17 1/3	16 1/3	16 1/3

CURRICULUM IN SOCIOLOGY

A. A. Thompson, *Coordinator*

Junior Year	Quarter Hours Credit		
Name of Course	I	II	III
Sociology	3		
Education 371			3
Nutrition 212		3	
Health 213			3
Philosophy 323 or Religion 301		3	
Psychology 312			3
Sociology 322		3	
Sociology 351	3		
Sociology Elec, 300	6	9	9
Education 201	3		
	18	18	18

Senior Year	Quarter Hours Credit		
Name of Course	I	II	III
Education 387	3		
Psychology 463		3	
Education 462	3		
Education 471		3	
Education 472			6
Electives	9	6	9
Education 301	3		
	18	12	15

COURSES IN SOCIOLOGY
Undergraduate

All classes carrying three hours' credit will meet three one-hour periods per week, unless otherwise designated.

Sociology 211-2-3 are prerequisites for all other Sociology courses.

211-2-3. *Introduction to Sociology.* (9) This series of courses is focused upon the relationship of people to their physical and cultural surroundings and to each other. A systematic conceptual framework developed that will permit the student to view the social world and its major problems in terms other than common sense.

221. *Anthropology.* (3) Studies man's social origin with emphasis on the development of races and languages; the origin, nature and diffusion of cultures; and a comparison of the principle cultures of the world.

301. *Labor Problems.* (3) Problems of employment and labor from the standpoint of the employee, the employer, and the socio-cultural environment.

303. *Introduction to Field Study.* (3) A study of the theory and methods of social research including the structure and use of questionnaire, the schedule, the interview case histories, sociograms, sampling, etc.

322. *The Family.* (3) Principles and problems associated with the organization, disorganization and reorganization of the family in the American and other societies.

323. *Problems of Courtship and Marriage.* (3) A critical approach to problems of courtship, marriage and the family, with emphasis on marital 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.

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.

400. *Methods of Teaching Social Studies in High Schools.* (3) Designed to acquaint the prospective teacher with the most recent trends in the teaching of the social studies in regard to objectives the selection and organization of curricular materials; the selection and utilization of equipment and resources; methods of teaching; and appraisal of the results of teaching.

411. *Statistics.* (3) Identical with Mathematics 311. A study of the various measures of central tendency and dispersion, linear and non-linear times series; linear and multiple correlation of attributes; and sampling. Prerequisites: Mathematics 131-2-3, or Mathematics 101-2-3, or Mathematics 111-12-13.

412. *Criminology.* (3) Includes an examination of the problems of crime and criminals; the making of the criminal; the theories of crime and punishment; machinery employed in dealing with the criminal; penal and correctional institutions and programs of correction.
Case studies and visits to institutions serve as aids in enriching understanding.

*421. *Population Problems.* (3) Theories and trends in population growth in conjunction with the political and economic implication of these trends at regional, national, and international levels.

442-3. *Rural Sociology.* (6) The structure of dynamics of rural life, together with a consideration of the technological and social changes in the rural community.

450. *Senior Project Writing.* (3)

*451. *Juvenile Delinquency.* (3) Covers the major causes and problems involved in anti-social acts of children. A study of the methods used in prevention of delinquencies and treatment of the juvenile including probational and institutional care.

452-3. *Sociology of Child Development.* (6) A study of the development of the child with emphasis upon a distinct sociological approach to behavior in relation to the family, play groups, school situations, the community and larger social institutions. Designed to acquaint prospective teachers and majors in sociology with the influences of social institutions upon the child's total development. Admission only with the approval of the instructor.

461. *Urban Sociology.* (3) A study of the growth of urbanism, its spatial and communicative extension into rural areas, and its impact upon the economy, the values and the social organization of communities. The spatial structure and land use patterns of urban and fringe areas and their implications for social service and police administration analyzed.

462. *Social Institutions.* (3) Concerned with the theories relating to the development of the major social institutions, their values and changes in satisfying the basic needs of man.

*472. *Advanced Social Psychology.* (3) An examination of the major points of view in social psychology including those of Mead, Dewey, and Cooley; Gestalt Psychology, Behaviorism and Psychoanalysis. Prerequisite: Sociology 453 and consent of instructor.

*482. *Collective Behavior.* (3) Treatment of a wide variety of collective groupings and movements; their origin, organization, membership, leadership, and dissolution. Includes an analysis of such social phenomena as institutions, formalized and congenial groupings, audiences, publics, crowds, mobs, fads and fashions and mass movements such as social unrest and reform.

491. *History of Sociological Theory.* (3) Major sociological theories as represented by Comte, Spencer, Durkheim, Weber, Simmel, et al., including those of the contemporary period.

Graduate

Regulations governing graduate study in the department of Sociology are identical with those of the University. In addition, the department reserves the right to give a candidate both the oral and written examination.

511. *Methods in Social Research.* (3) Designed to acquaint the student with the basic principles of social research such as those concerned with the scientific measurement of attitudes; social survey, case study and conference methods; the statistical, the historical and the comparative methods of scientific investigation.

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

521-2-3. *Principles of Sociology.* (9) Designed to acquaint the student with general sociological principles such as: human nature, social forces, social processes, social products, social control and social change.

532. *Social Disorganization.* (3) An analysis of changing aspects of our social life and the problems created for the individual conducted with special emphasis upon the disorganizing effects of rapid and uncorrelated cultural changes.

533. *Problems of Minority Groups.* (3) Designed to examine the problems of World and American minority groups; survey contemporary race ethnic conflicts and international postwar immigration policies and minority problems.

541. *History of Sociological Theory.* (3) Critical analysis of sociological theories from primitive times down to the present day. Particular attention to the social contribution made by Comte, Spencer, Ward, Giddings, and others.

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*Approved for graduate credit.

542. *Social Psychology.* (3) A study of the psychological processes in collective behavior, group solidarity and disintegration, public opinion, race prejudice, class conflict, nationalism and war.

543. *Contemporary Social Problems.* (3) A study of the social problems prevalent in urban and rural life which are of such a nature that they become the concern of the general public.

COURSES IN PHILOSOPHY

Philosophy 323. *Introduction to Philosophy.* (3) Covers a consideration of the methods of philosophical problems arising from the physical, biological, and social sciences, and from art, morality, and religion.

Philosophy 301. *Biblical Literature.* (3) A consideration of the primary document of our religious heritage. Both the Old Testament and the New Testament will be considered without imposing any sectarian or particular point of view upon the student. Interest is placed on the discovery, through the literature of the Bible and intertestamental books of the Judeo-Christian tradition, of the development of the six basic concerns of religion.

DEPARTMENT OF SPEECH AND DRAMA

THOMAS E. POAG, Ph.D., *Head*

SPEECH

The Departmental program in Speech and Drama is divided into four areas of concentration: (1) Speech and Drama; (2) Drama and Theatre; (3) General Speech and (4) Speech and Audiology. Courses in Radio and Television are offered as electives. Students are free to major or to minor in the four areas. The purposes of the department are: to train teachers in the 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 of the State Department of Education for teaching certificates and the needs of graduate students. Forty-eight hours of courses in Speech, Drama, and related subjects or a combination of Speech and Drama courses are required for a major; and 18-27 hours for a minor. A minimum of 192 quarter hours are required for graduation.

A major in the department of Speech and Drama for the Bachelor of Arts degree must complete 48 hours of course work in the areas of Speech or Drama and 66 hours in the General Education core plus 18-27 hours in Modern Foreign Languages if he plans to teach. All Speech and Drama majors are encouraged to minor in Education—36 hours; and English, 36 hours.

A major in the Department of Speech and Drama for the Bachelor of Science degree must complete 48 hours or more of course work in the areas of Speech or Drama, plus 60 to 66 hours in the General Education Core; 36 hours in Education; and 41 hours in other specified courses and electives. All majors for this degree are encouraged to minor in English, 36 hours.

Majors must complete 66 hours of courses on the 300 and 400 levels for graduation.

Students majoring in Speech and Audiology will follow a special curriculum pattern.

BACHELOR OF SCIENCE DEGREE

Curriculum in Speech and Hearing

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Speech 101-2-3	1	1	1
English 101-2-3	3	3	3
Art 133	3		
Health 212	3		
Health 151			3
Speech 223		3	
Music 131		3	
Social Studies 111-12-13	3	3	3
Biology 101-2-3	4	4	4
Air Science 151-52-53	1	1	1
Physical Ed. (men)	1/3	1/3	1/3
Physical Ed. (women)	1 1/3	1 1/3	1 1/3
Elective			3
	18 1/3	18 1/3	18 1/3

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Social Studies 114	3		
Speech 201-2-3	3	3	3
Speech 211-12-13	3	3	3
Math. 111-12-13	3	3	3
English 211-12-13	3	3	3
Education 201		3	
Psychology 242			3
Air Science 251-52-53	1	1	1
Physical Ed. (men)	1/3	1/3	1/3
Physical Ed. (women)	1 1/3	1 1/3	1 1/3
	16 1/3	16 1/3	16 1/3

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Speech 321-22-23	3	3	3
Speech 381-82-83	3	3	3
Education 371-485-486	3	3	3
Speech 451	3		
Psychology 312			3
Philosophy 323			3
Education 485-486		3	3
English 272		3	
Education 462		3	
Psychology 243	3		
Elective	3		
	18	18	18

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 301	3		
Speech 450	3		
Speech 481-82-83	3	3	3
History 201-2-3	3	3	3
Electives		6	3
Education 472			6
Elective		3	
Education 471	3		
Psychology	3		
	18	15	15

BACHELOR OF ARTS DEGREE

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
Speech 111-12-13	1	1	1
English 101-2-3	3	3	3
French, Spanish or German 101-2-3	3	3	3
Social Studies 111-12-13	3	3	3
Biology 101-2-3	4	4	4
Air Science (men)	1	1	1
Physical Ed. (men)	1/3	1/3	1/3
Physical Ed. (women)	1 1/3	1 1/3	1 1/3
	18 1/3	18 1/3	18 1/3

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Education 201	3		
Social Studies 114	3		
Speech 201-2		3	3
Modern Foreign Language	3	3	3
English 211-12-13	3	3	3
History 201-2-3	3	3	3
Psychology 242-243		3	3
Air Science (men)	1	1	1
Physical Ed. (men)	1/3	1/3	1/3
Physical Ed. (women) 20's-50's	1 1/3	1 1/3	1 1/3
	16 1/3	16 1/3	16 1/3

Junior Year	Quarter Hours Credit		
Name of Course	I	II	III
Speech 203			3
Speech 212-341	3	3	
Math. 111-12-13	3	3	3
Education 301, 387	3	3	
Psychology 312			3
English	3	3	6
Education 342-462	3	3	
Psychology 463			3
Modern Foreign Language (if required)			
Electives	3	3	
	18	18	18

Senior Year	Quarter Hours Credit		
Name of Course	I	II	III
Speech 453 (Ed. 371)	3	3	
Philosophy 323			3
Speech 411-12-13	3	3	3
Speech 421-22-23	3	3	3
Speech 450	3		
Education 471		3	
Health 212	3		
English		3	
History 203	3		
Education 472			6
	18	15	15

BACHELOR OF SCIENCE DEGREE

Curriculum in Speech and Drama

Freshman Year	Quarter Hours Credit		
Name of Course	I	II	III
Speech 111-12-13	1	1	1
Art 133	3		
Health 151			3
English 101-2-3	3	3	3
Social Studies 111-12-13	3	3	3
Biology 101-2-3	4	4	4
Physical Ed. (men)	1/3	1/3	1/3
Air Science (men)	1	1	1
Physical Ed. (women)	1 1/3	1 1/3	1 1/3
History 201-2-3	3	3	3
Elective		3	
	18 1/3	18 1/3	18 1/3

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	3	3	3
English 211-12-13	3	3	3
Education 201	3		
Psychology 242-243		3	3
Physical Ed. (men)	1/3	1/3	1/3
Air Science (men)	1	1	1
Physical Ed. (women)	1 1/3	1 1/3	1 1/3
	16 1/3	16 1/3	16 1/3

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	
Philosophy 323			3
Speech 203	3		
Education 462		3	
Psychology 463			3
Speech 231-32-33	1	1	1
	16	16	16

Senior Year	Quarter Hours Credit		
Name of Course	I	II	III
Speech 450	3		
Speech 381	3		
Speech 411	3		
Speech 461			3
English		6	3
Education 471-472		3	6
Health 212		3	
History 203	3		
Speech 311		3	
Speech 453			3
Education 371	3		
	15	15	15

UNDERGRADUATE

101-2-3. *Speech Composition.* (1) A study of the basic principles used in the writing of various types of speeches. Attention also given to voice and diction. One credit hours each quarter.

201. *Fundamentals of Speech.* (3) Fall. A study of the fundamental theory and practice of voice usage as related to effective speech.

202. *Public Speaking.* (3) Winter. The practice of speech composition and delivery will be stressed. The student will have practice in preparing and presenting short, informative, entertaining and persuasive speeches. The 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) Spring. The principles and practices of argumentation, an analysis of propositions, evidence, brief making, and preparation and delivery of forensics, as well as participation in classroom discussions. Techniques governing round table, forum and panel discussions will be studied.

212. *Phonetics.* (3) Winter. An introduction to the study of phonetics, the symbolization of speech sounds, kinesologic phonetics, American speech style, and applied phonetics.

213. *Speech Correction.* (3) Spring. Especially designed to meet the needs of the teacher of speech in public schools and colleges. This course will deal with actual clinical processes in the theory and practice of speech correction and training of visual hearing. Prerequisite: Speech 201.

221. *Business and Professional Speech.* (3) Fall and Winter. 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 analyzed and checked.

223. *Choral Speaking.* (3) Spring. Oral group interpretation of verse. Afford 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. *Lip Reading.* (3) Winter. Positions and movements involved in English Speech and the current methods used in teaching Lip Reading.

*323. *Psychology of Speech.* (3) Spring. Basic factors in persuasion, technique of persuation, attention, suggestion, motivation, the audience, semantic and interview.

*361. *Parliamentary Procedures.* (3) Fall. A study of the laws and techniques of parliamentary practices.

*381. *Voice Science.* (3) Fall. Consideration of aspects of the phonetic, anatomic, physiologic, and physical bases of speech. (Laboratory practice.)

*382. *Anatomy and Physiology of the Vocal Mechanism.* (3) Winter. Respiration, articulation, resonance, and phonation. Practical application to speech improvement.

*383. *Hearing Disorders.* (3) Spring. Physiology and anatomy of auditory mechanism, Symptomatology and pathology of hearing disorders, their surgical treatment, clinical and classroom management.

450. *Senior Project.* (3)

451. *History of English Language.* (3) Fall. Same as English 451. Prerequisite: Speech 201.

*452. *Advanced Public Speaking.* (3) Winter. A study of the standards of criticism and techniques involved in effective public address.

453. *Methods of Teaching High School Speech.* (3) Spring. A methods course in the teaching of speech and drama on the secondary level.

*461. *Public Address I.* (3) A study of speech making from ancient time through the Renaissance and includes attention to the development of rhetorical theory.

*462. *Public Address II.* (3) A study of speech making from the Renaissance to the modern times and includes attention to the development of rhetorical theory.

*463. *Advanced Public Discussions.* (3) A study of types of discussions.

481. *Audiometry and Hearing Aids.* (3) Fall. Theory and practice of clinical and group audiometry; screening and diagnostic techniques, pure tone and speech audiometry. Characteristics of modern hearing aids; selection and usage problems.

482. *Language Disorders and Cerebral Palsy.* (3) Winter. Linguistic disorders, causes, and remedial training; types of cerebral palsy, causes and treatment of cerebral palsy speech.

483. *Clinical Methods and Practice in Speech Pathology.* Study of cases and practice in clinical diagnosis and remedial treatment.

491. *Speech for the Classroom Teacher.* (3) Instruction in Speech and Speech forms designed for class room use. An analysis of the teachers speech habits. Open to all prospective teachers. To be given each quarter.

Courses in Speech

GRADUATE

501. *Phonetics and Speech Training.* (3) Principles of phonetics; study of English pronunciation, based chiefly on contemporary American usage; practice in phonetic analysis and, where necessary, drill for improvement of individual speech.

502. *Regional and Historical Phonetics.* (3)
503. *Voice Science.* (3)
504. *Speech Pathology.* (3)
505. *Lip Reading.* (3)
506. *Psychology of Speech.* (3)
507. *Anatomy and Physiology of the Vocal Mechanism.* (3)
508. *Hearing Disorders.* (3)
509. *Advanced Phonetics.* (3)
511-12. *Research and Thesis Writing in Speech and Drama.* (6)
521. *Public Address I.* (3)
522. *Public Address II.* (3)
523. *Public Address III.* (3)
513. *Advanced Public Speaking.* (3)
531-32-33. *Speech Correction.* (9)
591-2-3. *Advanced Public Discussion.* (9)

DRAMA

111-12-13. *Theatre Practice.* (3) An introduction to theatre organization and practices. One credit hour each quarter.

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.

231. *Introduction to Stage Design.* (1) A study of the fundamentals of design for the theatre.

232. *Stage Make-up.* (1) A study of the fundamental principles of stage make-up.

*Approved for graduate credit.

233. *Color Psychology.* (1) A study of the basic principles of color in production.

301. *General Dramatics.* (3) Fall. Basic principles of stage design, casting, acting, technique, preliminary script analysis, and the technique of producing plays. The student will be required to make a prompt book and to apply this technical knowledge to the productions of the year.

302. *Play Interpretation and Direction.* (3) Winter. The fundamental principles of directing are taught through exercises and projects. Each student will be required to direct a one-act play, and to attend rehearsals of the Tennessee State Players Guild. Study and practice in the methods by which the values of the written drama are translated to the stage in terms of acting, stage composition, grouping, movement, tempo, smoothness, and rhythm will be emphasized. Prerequisite: Speech 301.

303. *Playwriting.* (3) Spring. 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 Orient, Europe, and America. The physical playhouse, methods of production, great actors, stage machinery, scenery, costumes and masks.

331. *Children's Theatre I.* (3) Fall. Creative dramatics.

332. *Children's Theatre II.* (3) Winter. Organizing the children's theatre program. (grades 1-8).

333. *Children's Theatre III.* (3) Spring. Organizing the youth theatre program. (grades 9-12).

341. *Introduction to Drama.* (3) Fall. Same as English 341.

342. *Modern Drama.* (3) Winter. Same as English 342. Requirements: Speech 341.

343. *American Drama.* (3) Spring. Same as English 343. Prerequisite: Speech 341.

371. *Radio and Television Production.* (3) An introductory course dealing with the basic principles of formulating and producing the radio and television program.

372. *Radio and Television Acting.* (3) Methods and techniques involved in the presentation of radio and television plays.

373. *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) Fall. Same as English 411.

412. *Community Drama.* (3) Spring. 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 in social centers, churches, and clubs will be stressed. The student will have an opportunity to make general equipment for the community theatre in the scenic workshop. Special problems in analysis and production of pageants, folk-songs, masque, and festivals in the relation to community development are also studied.

*421. *Stage Design.* (3) Fall.
*422. *Stagecraft.* (3) Winter.
*423. *Stage Lighting.* (3) Spring.
*431. *Costume Design.* (3) Fall.

Graduate

541-42-43. *Dramatic Theory.* (9)
551-52-53. *Studies in Drama and Theatre.* (9)
561-62-63. *Play Interpretation and Direction.* (9)
571-72-73. *Advanced Playwriting.* (9)
581-82-83. *Same as English* 541-42-43—*English Drama I, II, III.* (9)

DIVISION OF AGRICULTURE

WALTER A. FLOWERS, M.S., *Director*

The Division of Agriculture offers instruction in the general field of agriculture and provides opportunity for specialized training in several fields of concentration. The several curricula offer training for students who desire to go directly into farming, to teach vocational agriculture in secondary schools, to do agricultural extension work, to enter a more specialized phase of agricultural production, or to engage in control and research work connected with the agricultural industry.

With exception of majors in Biochemistry, freshmen and sophomores take courses as outlined in the general curriculum below. After completing the first two years, the student is ready to enter upon a major field of concentration. The degree of Bachelor of Science is offered in the Division of Agriculture with a major in Agricultural Economics, Agricultural Education, Agricultural Engineering, Agronomy, Animal Husbandry, Biochemistry, Horticulture, and Poultry Husbandry. A minimum of 198 quarter hours is required by the Division for graduation, with not less than 66 hours in 300 and 400 level courses.

GENERAL CURRICULUM FOR FRESHMEN AND SOPHOMORES

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Agriculture 111-12-13	1	1	1
Air Science I 151-2-3	1	1	1
Animal Husbandry 102-3		3	3
Chemistry 111-12-13	4	4	4
English 101-2-3	3	3	3
Mathematics 141-2-3	3	3	3
Horticulture 101-3	3		3
Physical Education 11-12-13	1/3	1/3	1/3
Poultry Husbandry 101-2	3	3	
	18 1/3	18 1/3	18 1/3

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Agriculture 201-2-3	1	1	1
Agricultural Economics 203			3
Agricultural Engineering 202-3		3	3
Agronomy 201-2-3	3	3	3
Air Science II 251-2-3	1	1	1
Animal Husbandry 201	3		
Biology 101-2	4	4	
Agronomy 213			4
Speech 201-2	3	3	
English 211			3
Physical Education 20's to 50's	1/3	1/3	1/3
Electives	3		
Horticulture 212		3	
	18 1/3	18 1/3	18 1/3

COURSES IN AGRICULTURE

Undergraduate

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

201-2-3. *Technical Skills in Agriculture.* (3) Develops technical skills in the various phases of technical agriculture. Required of sophomores. One laboratory period.

303. *Family Food Supply.* (3) Deals with the production and preservation of the farm family food supply, including vegetables, fruits, dairy products and meats. Two lectures and one laboratory period.

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

DEPARTMENT OF AGRICULTURAL ECONOMICS AND AGRICULTURAL EDUCATION

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

CURRICULUM IN AGRICULTURAL ECONOMICS

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

The curriculum offers the Bachelor of Science degree for which a minimum of 198 quarter hours is required, of which 63 quarter hours must be in 300 and 400 level courses. Majors in the curriculum must complete 42 quarter hours in general and agricultural economics above the freshmen and sophomore level. Electives are available but must be selected in consultation with the major adviser. A minor in this curriculum shall consist of 18 quarter hours. The courses selected are dependent upon the needs of the student, as advised by his major and minor professors. All majors must take at least one course in statistics and one course in expository writing.

CURRICULUM IN AGRICULTURAL ECONOMICS

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

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Agricultural Economics 301-2-3	3	3	3
Agricultural Economics 312		3	
Agricultural Economics 322-23		3	3
Political Science 221	3		
Sociology 211	3		
Social Administration 302		3	
Sociology 322		3	
Business Law 311	3		
English 323			3
Geography 201	3		
Electives			9
	15	15	18

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Agricultural Economics 401-2-3	3	3	3
Agricultural Economics 411-13	3		3
Mathematics 311	3		
History 492		3	
Sociology 442-3		3	3
Social Administration 442	3		
Agricultural Economics 450	3		
Electives	3	9	6
	18	18	15

COURSES IN AGRICULTURAL ECONOMICS

Undergraduate

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

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

* Students not showing one unit of American History in high school, must pursue 9 quarter hours of American History.

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

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

311. *Farm Records and Accounts.* Fall Quarter. (3) A study of the principles and techniques involved in keeping farm records and accounts; inventorying; compiling, analyzing and interpreting farm financial and operating statements. Two lectures and one laboratory period.

*312. *Marketing Methods and Problems.* Winter Quarter. (3) A study of the methods and economic factors involved in the marketing of farm crops, poultry, eggs, livestock, and dairy products; marketing system and marketing costs; supply and demand; marketing cost reduction. Two lectures and one laboratory period. Prerequisite: Agricultural Marketing 301.

*322. *Farmers' Cooperative.* Winter Quarter. (3) A study of the history and present status of farmers' cooperatives; what they have done and tried to do for farmers; their problems, finance, and control. Two lectures and one laboratory period.

323. *Land Economics.* Spring Quarter. (3) A study of the income, valuation, taxation, and classification of land with special emphasis upon the land in Tennessee. Consideration will be given to the economic principles of conservation; minerals and power resources. Two lectures and one laboratory period.

331. *Land Appraisal.* Fall Quarter. (3) A study of factors governing the utilization and price of land; the appraisal process and other factors affecting the land. Consideration will be given to deeds, mortgages, leases and project development. Two lectures and one laboratory period.

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

402. *Agricultural Prices.* Winter Quarter. (3) Concerned with the analysis of prices and price movements of farm products and the relation of prices of farm products to other prices. Consideration given to agricultural outlook, production cycles, and price forecasts. Two lectures and one laboratory period.

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

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

413. *Farm Costs and Farm Labor.* Spring Quarter. (3) A study of unit costs; methods of measuring and reducing unit costs including equipment and building cost. Special attention given to farm labor and its effect upon farm organization and management as well as wages, hours, insurance and other problems. Two lectures and one laboratory period.

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

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

450. *Senior Project in Agricultural Economics Research.* Fall Quarter.

451-52. *Special Problems in Agricultural Economic Research.* Winter and Spring Quarters. (6) A program designed to give first-hand experience to individuals who plan to engage in graduate study or governmental work. It deals with the construction of schedules; gathering, tabulating, and interpreting data. Field work is required. Prerequisite—Agricultural Economics 450.

CURRICULUM IN AGRICULTURAL EDUCATION

WALTER A. FLOWERS, *Coordinator*

The curriculum in Agricultural Education is designed to prepare students to teach vocational agriculture in secondary schools of Tennessee. The degrees of Bachelor of Science and Master of Science are offered. To qualify for the B.S. degree in this curriculum and to teach vocational agriculture in Tennessee, a student must complete 205 quarter hours including all required courses, with 27 quarter hours in Agricultural Education and 9 hours in education and psychology. For a minor in Agricultural Education, a student must complete 18 quarter hours in the subject.

CURRICULUM IN AGRICULTURAL EDUCATION

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

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Agricultural Economics 301-2	3	3	
Agricultural Education 302-3		3	3
Agricultural Engineering 303			3
Agronomy 301-2-3	3	3	3
Agronomy 323			3
Animal Husbandry 302		3	
Animal Husbandry 311	3		
Horticulture 403			3
Horticulture 363			3
Poultry Husbandry 302		3	
Biochemistry 301	4		
Psychology 342, 243	3	3	
	16	18	18

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Agricultural Economics 403			3
Agricultural Education 402-3; 412-22; 433, 450		15	6
Agricultural Engineering 401	3		
Agronomy 401	3		
Animal Husbandry 331, 402	3	3	
Education 341	3		
History 201, 202	3		3
Political Science 313			3
Biology 241	4		
Horticulture 333			2
	19	18	17

COURSES IN AGRICULTURAL EDUCATION

Undergraduate

302. *Introduction to Teaching Vocational Agriculture.* Winter Quarter. (3) A discussion of the philosophy and administration of vocational education in agriculture from federal, state, and local points of view. Qualifications and duties of vocational agriculture teachers, definitions and examples of terms, determination of surveys to make, annual program of work, and course organizations emphasized.

303. *Planning Local Programs of Agricultural Education.* Spring Quarter. (3) Determining the local needs, use of advisory council, key farmers, procedures in planning the local program, including all-day classes, young and adult farmer classes, adult education, and N. F. A. programs.

402. *Material and Methods in Special Rural Education.* Winter Quarter. (3) A study of the factors which must be considered in determining what to teach and how to teach out-of-school rural youth and adults.

403. *Special Devices, Reports and Seminar.* Spring Quarter. (3) A study of the use of special devices to meet special situations. Reports to state and county authorities and means of carrying on publicity included.

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

422. *Apprentice Teaching.* Winter Quarter. (6) A course in the observation and practice teaching in departments of vocational agriculture in Tennessee. Done under the supervision of the teacher trainer and the critic teacher.

433. *Methods of Organizing and Directing Supervised Farming Programs.* Spring Quarter. (3) Designed to give students a broad concept of planning comprehensive supervised farming programs in Agriculture.

450. *Special Problems in Vocational Agriculture.* Winter Quarter. (3) Deals with specific problems that are confronting vocational agriculture teachers in getting farmers satisfactorily established on the farm. Each student is to present a problem and make recommendations for a solution, based on a critical study and analysis of the problem. A write-up in essay form required of all graduating seniors in the department.

Graduate Courses

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

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

512. *Thesis Writing.* (3) Involves the actual writing of the thesis. Consideration given to form, statement of problems, collection of data, their use, and conclusions to be reached.

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

523. *Evaluation and Program Planning in Agricultural Education.* (3) Programs of vocational education in agriculture in local situations as a basis for elective program planning evaluated.

CURRICULUM IN AGRICULTURAL ENGINEERING

WALTER A. FLOWERS, *Coordinator*

The Curriculum in Agricultural Engineering offers training in the engineering phase of agriculture and the farming industry. To qualify for the Bachelor of Science degree with a major in Agricultural Engineering, the student must complete 213 quarter hours of which 70 quarter hours must be in 300 and 400 level courses. A major is required to complete 96 quarter hours in agricultural and related engineering of which 68 quarter hours must be in 300 and 400 level courses.

CURRICULUM IN AGRICULTURAL ENGINEERING

Freshman Year	*Quarter Credit Hours*		
Name of Course	*I*	*II*	*III*
Animal Husbandry 102		3	
Chemistry 111-112-113	4	4	4
English 101-2-3	3	3	3
Basic Drafting 101-2-3	3	3	3
Mathematics 131-2-3	3	3	3
Agricultural Orientation 111-12-13	1	1	1
Elementary Surveying 211			3
Poultry Husbandry 101	3		
Air Science 151-2-3	1	1	1
Physical Education 111-12-13	1/3	1/3	1/3
	18 1/3	18 1/3	18 1/3

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Mathematics 261-2-3	5	5	5
English 211			3
Speech 201-202	3	3	
Physics 221-2-3	4	4	4
Horticulture 101	3		
Agricultural Engineering 202-3		3	3
Air Science 251-2-3	1	1	1
Physical Education 20's-50's	1/3	1/3	1/3
	16 1/3	16 1/3	16 1/3

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Mechanical Engineering 201	3		
Agricultural Economics 302		3	
Agricultural Engineering 301-2		3	3
Agricultural Engineering 311-12-13	3	3	3
Civil Engineering 212	3		
Civil Engineering 311-312	3	3	
Agronomy 202		3	
Engineering 203-303		4	4
Mechanical Engineering 333			3
Business English 321-322	3		3
Electives	3		3
	18	19	19

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Agricultural Engineering 401-2-3	3	3	3
Agricultural Engineering 411-12-13	1	3	3
Civil Engineering 301	3		
Civil Engineering 332-333		3	3
Electrical Engineering 211-12-13	3	3	3
Engineering 342-343	3	3	
Mechanical Engineering 342-343	3	3	
Electives	3		6
	19	18	18

COURSES IN AGRICULTURAL ENGINEERING

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

203. *Farm Buildings and Rural Electrification.* Spring Quarter. (3) A study of skills, judgment and resourcefulness in the construction and maintenance of farm buildings, and in the maintenance of rural electrification as it may be applied to the farm and farmstead. May include an analysis of building materials, and the development of skills involved in construction and maintenance. One lecture and two laboratory periods.

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

302. *Farm Machinery.* Winter Quarter. (3) Selection and economic application as well as design, construction, operation, adjustment, care and repair of all types of farm machinery. One lecture and two laboratory periods.

303. *Farm Power and Machinery.* Spring Quarter. (3) Includes the repair, operation and construction of tillage, seeding, and harvesting machinery, and such service implements as wagons, manure spreaders, and fertilizer distributors. A part of this course includes a study of the construction, operation, and servicing of gas engines and tractors in the laboratory. One lecture and two laboratory periods.

311. *Farm Welding.* Fall Quarter. (3) Fundamentals of oxy-acetylene and arc welding as well as selection and care of materials and the application of welding to farming operations. One lecture and two laboratory periods.

312. *Tractor Operation and Maintenance.* Winter Quarter. (3) Principles of internal combustion engine, carburetion, valve, timing, ignition, cooling, lubrication and fuels, servicing and repairing of farm engines and selection of power for agriculture. One lecture and two laboratory periods.

313. *Drainage and Irrigation.* Spring Quarter. (3) Principles of farm drainage as applied to open ditches and tile drains, land clearing and reclamation methods. Principles of irrigation practices, sources of water supply, distribution systems, application of water to crops, measurements and duty of water. One lecture and two laboratory periods.

401. *Land Engineering.* Fall Quarter. (3) Includes an analysis of the causes of erosion, methods of control, systems of terracing and contouring, construction of terracing equipment, and land drainage. One lecture and two laboratory periods.

402. *Farm Electrification.* Winter Quarter. (3) Includes the fundamentals of farm wiring and lighting, and the design, construction, and operation of electric water systems, refrigeration equipment, and other electric equipment used in farm production. One lecture and two laboratory periods.

403. *Farm Structures.* Spring Quarter. (3) Design and location of farm buildings, building materials, construction and arrangement. One lecture and two laboratory periods.

411. *Seminar.* Fall Quarter. (1) A review of current literature dealing with agricultural engineering problems presented by staff members and students. One meeting per week.

412. *Farm Homes and Utilities.* Winter Quarter. (3) Types of installation, care, operations, repair of buildings, heating, lighting, water supply, sewage disposal, refrigeration and air-conditioning. One lecture and two laboratory periods.

413. *Special Problems.* Spring Quarter. (3) Offered in any quarter of senior year and includes technical problems of research, subject to approval by the head of the department. One lecture and two laboratory periods.

DEPARTMENT OF AGRONOMY

MAJOR F. SPAULDING, Ph.D., *Head*

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

A major in Agronomy leading to the degree of Bachelor of Science is offered. Qualified graduates may pursue studies in Agronomy in the Graduate School for the Master of Science degree. A minimum of 198 quarter hours is required for the B.S. degree. Not less than 36 hours in Agronomy must be completed, with a minimum of 15 hours in 300 and 400 courses.

CURRICULUM IN AGRONOMY

Freshman and Sophomore students take courses outlined in the general curriculum for Freshmen and Sophomores.

Junior Year	*Quarter Hours Credit*			*Senior Year*	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*	*Name of Course*	*I*	*II*	*III*
Agronomy 301-2-3	3	3	3	Agronomy 401-2-3	3	3	3
Agronomy 311-12-13	1	1	1	Agricultural Economics 401	3		
Chemistry 361	4			Animal Husbandry 402-3		3	3
Biochemistry 312		4		Agronomy 450	3		
Animal Husbandry 302-311		3	3	Agronomy 411-12-13	1	1	1
Agricultural Economics 301-2-3	3	3	3	Electives	6	9	9
English 321-23	3		3				
Electives (Soc. Sci.)	3	3	3				
	17	17	16		16	16	16

Minor in Agronomy

Agronomy 301—Sorghums and Small Grains
Agronomy 302—Cotton and Tobacco
Agronomy 303—Forage and Pastures
Agronomy 401—Soil Conservation
Agronomy 402—Soil and Plant Anaylsis or Biochemistry 312
Agronomy 403—Legumes

COURSES IN AGRONOMY

Undergraduate

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

202. *Soils.* Winter Quarter. (3) An introduction to the study of the principles of soil formation, the nature and properties of soil and their relation to plants. Prerequisite: Chemistry 111-12-13. Two lectures and one laboratory period.

203. *Fertilizers.* Spring Quarter. (3) A study of the source, manufacture and properties of fertilizer materials, preparation of mixed fertilizers, and the principles of fertilizer application. Two lectures and one laboratory period.

213. *General Agricultural Botany.* Spring Quarter. (4) Designed to provide a broad understanding of the fundamental facts and principles of botanical sciences. Three lectures and two laboratory periods.

301. *Sorghums and Small Grains.* Fall Quarter. (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.* Winter Quarter. (3) A study of the principles of cotton and tobacco culture, fertilizing, producing, grading, classifying and marketing. Two lectures and one laboratory period.

*303. *Forage and Pastures.* (3) A study of the characteristics and uses of the important forages and pasture crops of Tennessee. Two lectures and one laboratory period.

311-12-13. *Technical Skills in Agronomy.* (3) Aims to develop and improve the technical skills necessary for the successful production of field, pasture, forage and soil improvement crops, and for the conservation and improvement of the soil resources. Two laboratory periods per week.

322. *Plant Pathology.* Winter Quarter. (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.* Spring Quarter. (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.

331. *Farm Weeds.* Fall Quarter (3) A one-quarter course of laboratory and field work on the identification, eradication, and economic value of the important weeds of fields and pastures. Electives for any department. Two lectures and one laboratory period.

401. *Soil Conservation and Management.* Fall Quarter. (3) A study of tillage, drainage, fertilization and rotation practices as they affect the productive capacity of field soils. One laboratory period and two lectures.

*402. *Soil and Plant Analysis.* Winter Quarter. (3) A laboratory course pertaining to the procedures and methods of plant and soil analysis. Prerequisites: Chemistry 361. Biochemistry 312. Three laboratory periods.

*403. *Legumes.* Spring Quarter. (3) A study of the characteristics and uses of the important legumes of Tennessee and the United States, their ecological adaptations, fertilization and management. Two lectures and one laboratory period.

450. *Senior Project. Fall Quarter.* (3) Required of all agronomy majors.

411-12-13. *Seminar.* Fall, Winter and Spring Quarters. (3) Includes the discussion of current topics, lectures and demonstrations in Agronomy and related areas.

Graduate Courses

501. *Plant Breeding.* (3) A study of the methods, principles and results of plant improvement work; hereditary variation and the general principles of plant breeding. Prerequisites: 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. Prerequisites: Agronomy 202. 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.

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

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

531-32-33. *Agronomic Literature.* (3) Acquaints the student with the literature in the general field. Two laboratory periods.

Approved electives in technical areas in other departments.
Horticulture 301-2-3-412-25
Biochemistry 301-2-3
*Approved for graduate credit.

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

542. *Special Problems.* (3) Includes discussion and reports on current agronomic problems.

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

DEPARTMENT OF ANIMAL SCIENCE

ROLAND NORMAN, Ph.D., *Head*

Courses in Animal Husbandry are designed to give instrutcion in the principles of livestock production and management, sanitation and health and processing and caring for animal products. Students are trained for the successful operation of livestock and poultry enterprises as owners, dairy farm operators, herd managers, market milk producers ,extension livestock specialists and research workers.

CURRICULUM IN ANIMAL HUSBANDRY

ROLAND NORMAN, *Coordinator*

A major in Animal Husbandry is offered leading to the degree of Bachelor of Science. To satisfy the requirements for the degree, the student must complete a minimum of 198 quarter hours. Not less than 36 hours must be completed in the major field, with a minimum of 15 hours in 300 and 400 level courses. Students who desire to minor in Animal Husbandry must complete a minimum of 18 quarter hours in the department.

Work leading to the degree of Master of Science is also offered.

CURRICULUM IN ANIMAL HUSBANDRY

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

Junior Year	*Quarter Hours Credit*			*Senior Year*	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*	*Name of Course*	*I*	*II*	*III*
Chemistry 361	4			English 321-322	3	3	
Bio-chemistry 302-3		4	4	Agronomy 401-3	3		3
Biology 311			4	Agricultural Engineering 401	3		
Biology 241	4			Agricultural Economics 312		3	
Agricultural Economics 302		3		Animal Husbandry 322		3	
Animal Husbandry 301-3	3		3	Animal Husbandry 401-2-3	3	3	3
Animal Husbandry 311-12-13	3	3	3	Animal Husbandry 411-450	3		3
Animal Husbandry 321		3		Animal Husbandry 421-22-23	1	1	1
Electives** (Soc. Sci.)	3	3	3	Electives **		6	6
	17	16	17		16	19	16

COURSES IN ANIMAL HUSBANDRY

Undergraduate

102. *Intoductory Animal Husbandry.* Winter Quarter. (3) Devoted to the adaptation of the different classes of farm livestock to varying farm conditions and to the relationship of each class to the other in different farm plans. A careful

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**Approved Social Science electives: Political Science 221, 313; Sociology 322, 393, 441; Approved Health or Personal Development electives: Health 301, 302; Phychology 211; Sociology 351, 463.
(All electives must be taken with the approval of the major adviser)

study of correct type in livestock in relationship to economical production and market demands. Two lectures and one laboratory period.

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

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

211. *Introduction to the Care and Riding of Light Horses.* Fall, Winter and Spring Quarters. (3) Designed for men and women of the University who are interested in horseback riding. Elementary principles in feeding, housing, training and riding light horses given; the proper care and adjustment of riding equipment also stressed. One lecture and two laboratory periods.

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

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

303. *Animal Breeding.* Spring Quarter. (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. Prerequisites: Biology 311. Three lectures.

311. *Feeds and Feeding.* Fall and Spring Quarters. (3) A study of the basic principles of feeding farm animals, feeding standards, balancing rations, composition and nutritive value of feeds. Offered in the fall and spring quarters. Two lectures and one laboratory period.

312. *Livestock Fitting and Judging.* Winter Quarter. (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.* Spring Quarter. (3) A study of the causes, symptoms and treatment of general diseases and parasites of livestock with special emphasis on sanitation. Prerequisite: Biology 241. Two lectures and one laboratory period.

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

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

431. *Animal Science.* Fall Quarter. (3) A study of the feeding, breeding, hygiene and management of farm animals. Two lectures and one laboratory period.

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

402. *Meat and Meat Products.* Winter Quarter. (3) A study of practices in butchering, cutting, processing and preserving farm meats. Two lectures and one laboratory period.

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

411. *Technical Skills in Animal Husbandry.* Fall Quarter. (3) Aims to develop and improve the technical skills necessary for the successful production of farm animals and animal products. Three laboratory periods.

421-22-23. *Seminar.* Fall, Winter and Spring Quarters. (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.* Spring Quarter. (3) Required of all Animal Husbandry majors.

Graduate Courses

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

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

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

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

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

521-22-23. *Animal Husbandry Seminar.* (3) Discussions 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 Management.* (3) A study of the methods of management of commercial dairy plants, costs of operation, technical advances in processing and preserving dairy products. Two lectures and one laboratory period.

CURRICULUM IN BIOCHEMISTRY

(Agricultural and Biological Chemistry)

ROBERT E. HURST, *Coordinator*

The Curriculum in Biochemistry has the following fourfold objective: (1) to offer courses for students in the several departments of agriculture and home economics, whose programs of study require such training; (2) to implement a program of training for majors in the department who seek to lay a foundation in agriculture and the appropriate sciences for future professional careers in agricultural chemistry biological chemistry, and related fields; and (3) to provide instruction in biochemistry to students in other science departments.

Students majoring in biochemistry must complete a minimum of 198 quarter hours for the Bachelor of Science degree of which 63 quarter hours must be on 300 to 400 level courses. A minimum of 52 hours must be completed in chemistry and biochemistry, with not less than 28 hours in 300-and 400-level courses.

Majors in biocemistry should select as a minor a combination of courses from related fields such as animal husbandry, poultry hunsbandry, foods and nutrition, and the biological sciences.

Students completing requirements for the Bachelor of Science degree in biochemistry should plan to pursue graduate study at least to the Master's degree. This additional training will prepare them for employment in laboratories of federal and state departments of agriculture, in agricultural experiment stations, with packing companies, fod processing establishments, and other industries of this kind that employ technically trained staffs for control and research work.

Students who expect to pursue this curriculum must arrange with their major adviser to take Mathematics 161-2-3 instead of Mathematics 141-2-3 in the freshman year of the General Curriculum, and Organic Cmesitry 311, 312, 313 in the sophomore year.

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Animal Husbandry 311	3		
Biochemistry 302-3		4	4
Chemistry 211-12-13	4	4	4
Electives (Soc. Sci. 9 hr.)	9-11	9	9
	18	17	17

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Biochemistry 402-3		4	4
Biochemistry 411	4		
Biochemistry 450		3	
Biochemistry 423			1
Biology 241	4		
Physics 211-12-13	4	4	4
Electives (Restricted to 300 and 400 Courses	3	7	7
	15	18	16

COURSES IN BIOCHEMISTRY

Undergraduate

301. *General Agricultural Biochemistry.* Fall Quarter. (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.* Winter and Spring Quarters. (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. Prerequisite: General Chemistry, Organic Chemistry, and Biology or Zoology. Three lectures and two laboratory periods per week.

312. *Quantitative Agricultural Chemistry.* Winter Quarter. (4) Deals with certain aspects of quantitative chemistry as applied to agricultural and food analysis. Prerequisite: Chemistry 111-12-13. Required of majors in agronomy and horticulture. Two lectures and two laboratory periods per week.

313. *Physiological Chemistry.* Spring Quarter. (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 Biohcemistry.* Winter and Spring Quarters. (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. Prerequisite:

411. *Biochemical Analysis.* Fall Quarter. (4) Designed to familiarize the student with the principles and practices involved in the analysis of agricultural and food products and other biological materials. Prerequisite: Analytical and Organic Chemistry; and Biochemistry 302-3. One lecture and three laboratory periods per week.

423. *Seminar. Spring Quarter.* (1) A discussion by the students of biochemical literature understandable on the senior level. One meeting per week.

450. *Senior Project in Biochemistry.* Fall Quarter. (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 major in biochemistry. Hours arranged.

Graduate Courses

501. *Biochemistry of Animal Nutrition.* Fall Quarter. (4) Deals with the metabolism of carbohydrates, lipids and proteins, energy relationships of the animal body, and the nutritive requirements for optimum body functioning. The laboratory work involves experimental feeding to determine the effects of diets lacking in specific nutrients and chemical methods used in nutrition studies. Prerequisite: Biochemistry 303. Two lectures and two laboratory periods.

521-22-23. *Biochemical Seminar.* Fall, Winter, and Spring Quarters. (3) Discussions presented of experimental data and research techniques in agricultural and biological chemistry, and nutrition. Prerequisite: Biochemistry 303. One hour per week.

CURRICULUM IN POULTRY HUSBANDRY

EARLY J. THORNTON, *Coordinator*

The Curriculum in Poultry has been set up to prepare students for the successful operation of poultry enterprises, either as owners or managers; for extension and research work; and positions with the U. S. Department of Agriculture. Courses of study leading to the Bachelor of Science and Master of Science degrees are offered.

To satisfy the requirements for a major in poultry husbandry leading to the Bachelor of Science degree, a student must complete a minimum of 198 quarter hours of which 61 quarter hours must be in 300-and 400-level courses. A minimum of 36 hours must be completed in poulry husbandry and closely related subjects, with not less than 15 hours in 300 and 400 courses. Eighteen hours in a minor field must also be completed. Guidance in determining courses to pursue will be provided by the student's major and minor advisers.

Requirements for graduate students are given in the Graduate School Bulletin.

The newly completed poultry enterprise is equipped with laying, breeding, brooding, and nutritional study units. It has a flock of chickens of the two leading types, including four major breeds; turkeys, ducks, and geese. Modern incubators, refrigeration unit, killing and processing equipment, and a feed mixer are available for students in training. Adequate facilities are available for research in nutrition, breeding, hatch-ability, and disease. The entire laying flock is pedigree bred; sufficient record equipment and assistants in record-keeping enable the personnel to plan and carry out many demonstrations and researches that are useful to students.

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Poultry Husbandry 302		3	
Poultry Husbandry 303			3
Poultry Husbandry 342		3	
Poultry Husbandry 343			3
Biology 432	4		
Chemistry 361	4		
Agricultural Economics 312		3	
Biochemistry 302-3		4	4
Poultry Husbandry 321-22-23	1	1	1
Electives (Soc. Sci. 9 hrs.)	9	4	7
	18	18	18

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

COURSES IN POULTRY HUSBANDRY

Undergraduate

101. *Principles of Poultry Production.* Fall Quarter. (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.

102. *Principles and Practices of Incubation and Brooding.* Winter Quarter. (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. *Poultry Management.* Winter Quarter. (3) A detailed study of all phases of farm and commercial poultry that will include buying chicks, incubation, brooding, managing the growing flock, and handling the layers. Two lectures and one laboratory period.

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

321-22-23. *Technical Skills in Poultry Husbandry.* Fall, Winter and Spring Quarters. (3) Improves and develops the skills necessary for successful poultry production. Required of all majors and minors in Poultry Husbandry. Four laboratory hours.

342. *Hatchery Management.* Winter Quarter. (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.

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

402. *Poultry Breeding.* Winter Quarter. (3) Information on the inheritance of viability, egg production, and other characteristics of economic importance, breeding records, and progeny testing. Three lectures.

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

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

422. *Poultry Nutrition and Feeding.* Winter Quarter. (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.

450. *Senior Project.* Spring Quarter. (3) Junior research is conducted, in some phase of poultry.

Graduate

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

501-2. *Advanced Poultry Breeding.* (6) A study of the principles of genetics with emphasis on their application to the domestic fowl. Three lectures.

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

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

521-22-23. *Poultry Seminar.* (3) Reports of assigned reading from scientific and technical literature on nutrition, disease, and breeding. One meeting per week.

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

541-2-3. *Poultry Research.* (9) Research in some phase of poultry is undertaken. Originality and thoroughness are emphasized.

DEPARTMENT OF HORTICULTURE

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

The department of Horticulture is primarily a service unit for students majoring in the Division of Agriculture. A major in horticulture leading to the degree of Bachelor of Science is also offered.

To meet requirements for the Bachelor's degree in horticulture a student must complete a minimum of 198 quarter hours of credit of which 66 quarter hours must be on 300-and 400-level courses. A minimum of 36 quarter hours in horticulture must be completed, with not less than 15 hours in 300 and 400 courses. Students may concentrate their subjects in fruits and vegetables or in ornamental horticulture and floriculture.

CURRICULUM IN FRUITS AND VEGETABLES

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

Junior Year	*Quarter Hours Credit*			*Senior Year*	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*	*Name of Course*	*I*	*II*	*III*
Horticulture 301-2-3....	3	3	3	Horticulture 401-2-3....	3	3	3
Horticulture 313.....			3	Horticulture 412.....		3	
Horticulture 331-2-3....	2	2	2	Horticulture 423.....			3
Horticulture 321.....	3			Horticulture 433.....			3
Agricultural Economics 312		3		Horticulture 450.....			3
				Biochemistry 312.....		4	
Home Management 323.			3	Agronomy 401-2.....	3	3	
Chemistry 361.....	4			English 321-2.....	3	3	
Biology 311.....	4			History 201-2.....	3	3	
Sociology 221-322.....	3	3		Electives	3		3
Electives		6	6		15	19	15
	19	17	17				

Courses Approved for the Minor

Horticulture 301
Horticulture 302
Horticulture 303
Horticulture 331
Horticulture 332
Horticulture 333
Horticulture 403

CURRICULUM IN ORNAMENTAL HORTICULTURE AND FLORICULTURE

HAZO W. CARTER, *Coordinator*

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

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Horticulture 343			3
Horticulture 350			1
Horticulture 351	3		
Horticulture 363			3
Horticulture 372		3	
Horticulture 381	3		
Civil Engineering 211	3		
Sociology 211	3		
Mathematics 133			3
Biology 211-12-13	4	4	4
Agricultural Economics 323			3
Electives (Soc. Sci. 3 hrs.)	3	12	
	19	19	17

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Horticulture 443			3
Horticulture 450		3	
Horticulture 451	3		
Horticulture 461	3		
Horticulture 462		1	
Horticulture 463			1
English 322		3	
Political Science 313			3
Electives	12	11	11
	18	18	18

COURSES IN HORTICULTURE

Undergraduate

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

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

212. *Ornamental Horticulture.* Winter Quarter. (3) An elementary course of principles and practices involved in the production of flowers and ornamental plants. Two lectures and one laboratory period.

301-2-3. *Commercial Vegetable Production.* Fall, Winter and Spring Quarter. (9) 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.

313. *Fruit Varieties.* Spring Quarter. (3) A systematic study of the most important varieties of apples, pears, peaches, plums, and small fruits from the standpoint of their identification, growth characters, and special cultural requirements. At least one field trip given. Two lectures and one laboratory period.

321. *Processing of Fruits and Vegetables.* Fall Quarter. (3) A study of current practices in the processing of fruits and vegetables. In addition to laboratory work, the course includes visits to freezing and dehydrating plants, and canning factories. One lecture and two laboratory periods.

331-2-3. *Technical Skills in Horticulture.* Fall, Winter and Spring Quarter. (6) Aims to develop technical skills necessary for production of fruits and vegetables. Required of all students majoring and/or minoring in horticulture. Two laboratory periods.

343. *Propagation of Horticulture Plants.* Spring Quarter. (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.

350. *Special Problems in Ornamental Horticulture.* Fall, Winter and Spring Quarter. (3) Hours arranged.

351. *Floriculture.* Fall Quarter. (3) A course dealing with the principles underlying the culture of greenhouse crops. Two lectures and one laboratory period.

363. *Forestry.* Spring Quarter. (3) A study of forest conservation and management and the relation of forestry to agriculture, including the influence of the forest on climate, streamflow and erosion. Two lectures and one laboratory period.

372. *Landscape Plants.* Winter Quarter. (3) A study of ornamental plants such as trees and shrubs, involving their identification and use in landscape plantings. Two lectures and one laboratory period.

381. *Landscape Design.* Fall Quarter. (3) A study of landscape composition dealing with the designing of small lots, city property, public grounds and large estates. Two lectures and one laboratory period.

401. *Handling, Storage, and Utilization of Fruits.* Fall Quarter. (3) The important factors in harvesting and handling fruits that affect quality and marketability studied. Two lectures and one laboratory period.

402. *Orchard and Small Fruit Culture.* Winter Quarter. (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.* Spring Quarter. (3) Deals with the factors affecting growth, development and quality of fruits and vegetables. Two lectures and one laboratory period.

412. *Plant Nutrition.* Winter Quarter. (3) Deals with soil condition in relation to the growth of fruit trees and vegetable plants; soil and plant tissue tests, fertilizers and their use. Two lectures and one laboratory period.

423. *Types and Varieties of Vegetables.* Spring Quarter. (3) Deals with the taxonomy, origin, history, characteristics, adaptation, identification, classification, exhibition and judging of kinds and varieties of vegetables. The value of the course depends to a great extent upon gaining an acquaintance with the plant material as it grows. Two lectures and one laboratory period.

433. *Diseases of Fruits and Vegetables.* Spring Quarter. (3) Deals with symtomatology, laboratory and field studies of representative diseases and control measures. Two lectures and one laboratory period.

443. *Breeding of Horticultural Plants.* Spring Quarter. (3) A study of the principles and methods of genetics as applied to the breeding and improvement of horticultural crops. Two lectures and one laboratory period.

450. *Senior Project in Horticulture.* Winter and Spring Quarter. (3) Individual student research and presentation of a special topic or problem selected by the student and approved by the adviser. Prerequisite: Senior standing.

451. *Floral Design.* Fall Quarter. (3) A course dealing with the essentials of flower arrangement. One lecture and two laboratory periods.

461. *Floriculture.* Fall Quarter. (3) A course dealing with the major commercial cut flower crops. Two lectures and one laboratory period.

462. *Floriculture.* Fall, Winter and Spring Quarter. (1) Special problems course. Two laboratory periods.

463. *Floriculture.* Fall, Winter and Spring Quarter. (1) Special problems course. Two laboratory periods.

TERMINAL COURSES IN ORNAMENTAL HORTICULTURE AND FLORICULTURE

This specialized course in Ornamental Horticulture is given to serve the needs of those who wish to go into business as operators, either for themselves or for others.

Two (2) years—Three (3) seasons: Fall—Winter—Spring.

Unit I. Fall (480 clock hours)

A. Landscape plants—
A study of the form, shape and identity of trees and shrubs.

B. Propagation of ornamental plants—
A study of the various methods of propagating ornamental plants.

C. Landscape Design—
A study that deals with the fundamental elements of design, involving the use of symbols and figures used in landscape design.

Unit II. Winter

A. Landscape plants—
A study of the form, shape and identity of trees and shrubs.

B. Propagating Horticultural plants—
A continued study of specific methods in propagating certain plants.

C. Landscape Design—
A study in the designing of small property.

Unit III. Spring

A. Landscape plants—
A study of perennials used in landscape design.

SCHOOL OF EDUCATION
MALCOLM D. WILLIAMS, Chairman

SCHOOL OF EDUCATION

MALCOLM D. WILLIAMS, *Chairman*

General Information

The establishment of the Tennessee Agricultural and Industrial Normal School was authorized by an Act of the State legislature in 1909 under what was known as the General Education Bill.

In 1922, the institution was raised to the status of a four-year teachers college and was empowered to grant the bachelor's degree.

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 provided for the establishment of the School of Education, as well as the Graduate School, the School of Arts and Sciences, and the School of Engineering.

The Department of Education was recognized as an integral part of the institution's initial organization. The Division of Education was created in 1941 and remained in operation until 1951. Under the reorganization program of 1951 elevating the institution to university status, the School of Education was created.

Purposes of the School of Education

The original purposes of the Tennessee Agricultural and Industrial State Normal School have not been abandoned but modified and incorporated into the program of the School of Education. A statement of the early purposes reads as follows: "Tennessee Agricultural and Industrial State Normal School was established for the purpose of preparing teachers and leaders to meet fully the demands for more efficient and practical service in the public schools and life." 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 teachers, supervisors, and administrators for the public schools of Tennessee, elementary and secondary.
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, five departments, three curricula, extension services, and courses in Library Science, Secondary Education, Administration, Supervision and Special Education. It is organized as follows: the Division of Business which includes the Department of Business Education and the Department of Business Administration; the Department of Art and Music Education, with a curriculum in Art and a curriculum in Music; the Department of Health, Physical Education, and Recreation; the Department of Psychology; the Department of Administration, Curriculum and Instruction which includes a curriculum in Elementary Education, and courses in Secondary Education, Administration, Supervision, Library Science, Extension and Special Education.

The School of Education has cooperative agreements with the county schools of Davidson County and the city schools of Nashville, under which certain schools are made available for teacher preparing centers. Some departments have teacher preparing centers in Clarksville, Chattanooga, Knoxville, Lebanon, Memphis, Morristown, and Ripley, Tennessee.

Advisory System

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

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

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

The advisers for freshmen and sophomores are members of the faculty of the School of Education. Major advisers are members of the staff of the department in which the student is doing his major work. Major advisers counsel students on curricular and life adjustment problems.

In an effort to provide a highly effective and efficient guidance program, use is made of the following techniques: conferences, interviews, rating scales, personality tests, senior standing blanks, and a cumulative folder for each student of the School of Education.

Teacher Placement

The School of Education does not maintain a separate placement bureau from that of the University. The School of Education cooperates with the University Placement Bureau in assisting its graduates to secure teaching and administrative positions.

Every graduating senior is required to register with the University Placement Bureau which is located in Room 108, Harned Hall. No service charge is made by the Bureau of students, employers, 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 extension division to organize graduate and undergraduate class centers, (2) cooperate with the state in-service program in conducting short courses and summer work-conferences, (3) consultative services on local problems to school personnel throughout the state by university staff members, (4) for the development and distribution of materials to school personnel, and (5) 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 the Martha Brown Memorial Library, Room 211.

Functions of General Education

Much discussion has been held about the purpose, nature, content, and characteristics of General Education. The issues, which seem to be well defined, are centered around the characteristics of general education rather than around the content. General Education as conceived at the Tennessee Agricultural and Industrial State University is designed to develop in students those skills, understandings, attitudes, and values which will equip them for effective living and responsible citizenship in a democratic society.

The types of General Education envisioned by the University seek to provide students with an opportunity to become acquainted with broad areas of subject matter, to aid them in the discovery of their own interests and abilities, and to equip them to live more effectively with themselves and with others as citizens of a democracy.

In order that the students at the Tennessee Agricultural and Industrial State University might participate effectively in the benefits to be derived from a general education, the University has revised its curriculum to provide for its students a 60 quarter hour program, as minimum, to be taken from the General Education Core.

The general education courses may be taken from the following areas:

	Quarter Hours
Communication	9
Health, Physical Education, Personal Development, and Home and Family Living	9
Humanities	15
Natural Sciences	12
Social Studies	12
Fundamental Concepts of Mathematics	3 or 9

General Competencies Sought in General Education:

The prospective teacher should possess the ability to:

1. Improve and maintain his own health and assume his share of responsibility for protecting the health of others.
2. Communicate effectively through reading, writing, speaking, and listening.
3. Attain emotional and social adjustment through the enjoyment of a wide range of social relationships and through the experience of working cooperatively with others.
4. Think logically, relatively, and imaginatively.
5. Discriminate among moral and spiritual values and apply these values in day-to-day relationships.
6. Accept the responsibilities and exercise the 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.

DEPARTMENT OF ADMINISTRATION, CURRICULUM AND INSTRUCTION

MALCOLM D. WILLIAMS, *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 Administration, Supervision, Extension, Library Science, and Special Education. The Master of Science degree may be obtained in Educational Administration, Educational Supervision, Elementary Education, Secondary Education, and Special Education.

*NOTE: Beginning with the June Summer School session of 1957, persons who desire to meet requirements for a Master of Science degree in elementary or secondary education will be required to take in addition to some of the present courses, the following courses:

Elementary Education:

Science 505—Problems in the Teaching of Elementary Science. Three quarter hours.

Math. 523—Advanced Course in the Teaching of Arithmetic. Three quarter hours.

The prerequisites for taking Math. 523, Educ. 527 and Educ. 529 are Educ. 231, 232 and 233.

Secondary Education:

A minimum of 15 quarter hours in graduate courses in a *subject matter area* offered at the University, and such graduate subject area courses must be approved by the head of the subject area department.

Prerequisites for taking the 15 quarter hours of graduate courses in the subject matter area must meet the undergraduate course requirements established by the subject matter area department and the Graduate School.

Each area requires a minimum of 45 quarter hours graduate courses.

Each area requires a minimum of 36 quarter hours in undergraduate courses in education.

COURSES IN ADMINISTRATION AND SUPERVISION

Undergraduate

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.

341. *Principles and Organization of Secondary Education.* (3) Includes the principles underlying the evolution of the present American high school, types of organization, the high school pupil, curricula offerings and present-day problems.

Graduate

500. *Foundations of Education.* (3) Social, the historical, and philosophical foundations of education will be considered.

502. *School Administration.* (3) Includes the following areas: (a) Public school administration, (b) Public school supervision, (c) Public school finance, (d) Curriculum development, (e) Survey technique, (f) Public relations, (g) Planning, construction, operation and maintenance of school buildings, (h) School transportation, (i) History and philosophy of education, (j) Educational sociology, and (k) Teachers salaries.

503. *School Supervision.* (3) Problems of administrative organization and relationships, financial control and assistance, legislative and regulatory standards, and various types of supervisory service. The history of supervision is

traced, its background is sketched, and details concerning the methods now iin use are described.

505. *Legas 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 problem, the collection of data, their use, and conclusions to be reached are emphasized.

514. *Principles of Teaching.* (3) Critical survey of elementary and secondary education; current trends, administration, pupil guidance, teaching methods and evaluation.

524. *History of Education.* (3) This course offers a critical examination of the social and educational eperiences which have greatest significance in explaining present educational policies, practices and institutions.

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.

534. *An Evaluation of Public School Programs.* (3) Designed to help the student analyze and interpret state, regional, and national public school evaluation programs. Consideration will be given to the intelligent use and interpretation of standardized and teacher-made tests and other procedures for collecting data aimed at the newer objectives of education.

551. *The Principal at Work.* (3) A systematic study and analysis of the work of a principal in a given school situation and of the possibilities for development of the school program and formulation of specific plans to foster such growth.

553. *The Supervisor at Work.* (3) Evaluation of program of work; program planning; report making; relation to superintendent; relation to community agencies; relation to school principals; professional activities for teachers; publicity.

554. *Group Dynamics in Supervision.* (3) Designed to provide opportunities for pre-service and in-service teachers to gain experience in group organization, planning and evaluation, and to develop skills in group leadership and participation, recording, observing role playing, and interprettaion of group interaction.

561. *Organization of School Staffs for Curriculum Improvement.* (3) Designed to provide opportunities for study of curriculum practices with special emphasis on the Tennessee State program of Curriculum Improvement and other representative patterns of over-all organization. Special curriculum improvement problems will be studied.

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 scene; 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.

587. *Curriculum Construction and Practices in the Public Schools.* (3) Critical appraisal of the development and present status of the elementary and secondary school curriculum policies and practices in terms of functional value and social needs; implications for reorganization and basic changes and trends.

Educational Administration

General Education Core:
- Education 502
- Education 511
- Education 526
- Psychology 502
- Psychology 543

Administration Core:
- Education 551
- Education 503
- Education 505
- Education 512
- Education 500
- Education 534
- Education 564
- Education 587

Electives (6 quarter hours):
- Sp. Ed. 465
- Education 473
- Education 504
- Education 523
- Education 546
- Education 554
- Education 558
- Education 561
- Education 572
- Education 573
- Education 581
- Education 595
- Education 596
- Psychology 531
- Psychology 532
- Psychology 551
- Sociology 451
- Sociology 533
- Sociology 542
- Education 524
- Sociology 521
- Education 524

Educational Supervision

General Education Core:
- Education 502
- Education 511
- Education 526
- Psychology 502
- Psychology 543

Supervision Core:
- Education 503
- Education 553
- Education 534
- Education 500
- Education 564
- Education 587
- Education 512
- Psychology 551

Electives (6 quarter hours):
- Education 524
- Education 562
- Education 561
- Education 581
- Education 595
- Education 596
- Education 473
- Sp. Ed. 465
- Psychology 531
- Psychology 523
- Psychology 532
- Psychology 553
- Psychology 563
- Sociology 521
- Sociology 451
- Sociology 533
- Sociology 542
- Education 531
- Education 573
- Education 575
- Education 554
- Education 549

CURRICULUM IN ELEMENTARY EDUCATION

Elementary education is one of the curriculums in the department of administration, curriculum and instruction set up by the University as its agency for the professional preparation of leaders in the field of elementary education. The Bachelor of Science degree is awarded upon the satisfactory completion of 197 quarter hours, of which 60 quarter hours must be in the 300 and 400 level courses. A major in elementary education consists of 48 quarter hours, of which 24 quarter hours must be 300 and 400 level courses.

Required courses for a major in Elementary Education are as follows: Education 201, 231, 232, 233, 301, 333, 387, 431, 432, 433, 443, 462, Psychology 242, 243, 312, and 463.

TENNESSEE TEACHERS' CERTIFICATES

Certification Requirements for Elementary Teachers

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.

Each prospective teacher, qualifying for a certificate based upon a degree, is expected to prepare initially either for endorsement grades 1-9, or endorsement grades 7-12. Therefore, the professional education required is indicated as "core professional" and as "specialized professional".

Each candidate for a teacher's certificate based upon a college degree shall have completed core professional preparation giving attention to areas of common concern for al lteachers including: human growth and development; the psychology of learning as applied to learning activities under the guidance of the school; historical, philosophical, and sociological foundations of American education; the teacher's school and community relationships; professional organization and ethics; the keeping of records and reports, and the routine management of the school; materials, including skills in the use of audio-visual materials and equipment; guidance and mental hygiene.

Endorsement Grades 1-9

In addition to the general education and professional education requirements, the applicant shall offer a minimum of 39 quarter hours in the following areas:

a. Language Arts—A minimum of 18 quarter hours in Language Arts, including 9 quarter hours in Communication as outlined under General Education, and additional study in areas such as Language Usage, Speech, Children's Literature, and Library Service.

b. Natural Sciences—A minimum of 18 quarter hours in Natural Sciences, including 12 quarter hours as outlined under General Education and including study of best uses of natural resources.

c. Humanities—A minimum of 21 quarter hours in the Humanities including 15 quarter hours as outlined under General Education, and including study in Art (including Crafts and Music).

d. Health, Physical Education, Personal Development, and Home and Family Living—A minimum of 18 quarter hours in Health, Physical Education, Personal Development, and Home and Family Living, including 9 quarter hours as outlined in General Education. The applicant shall offer not less than 6 quarter hours in Health and 8 quarter hours in Physical Education, including study in areas such as Personal Health, Nutrition, Physical Activities, Rhythmic Activities, and Games.

e. Social Studies—A minimum of 18 quarter hours in Social Studies, including 12 quarter hours as outlined in General Education, and including study in areas such as Tennessee History, Pol. Science, Geography and socio-economic problems.

f. Mathematics—A minimum of 6 quarter hours in mathematics, including 3 quarter hours as outlined in General Education, and including study in functional arithmetic.

Supervised student teaching in grades 1-9 with at least 6 quarter hours' credit must be offered. (Experience in Lieu of Student Teaching) An applicant for a certificate based upon a college degree may present evidence of 3 years' teaching experience in the type of work authorized by the certificate sought in lieu of three credit hours in student teaching required for such certification, provided that (1) such experience was gained on a valid certificate; (2) a corresponding number of quarter hours of credit is presented in other education courses; and (3) the institution recommending the applicant for such a certificate is agreeable to the substitution.

Endorsement for Both Grades 1-9 and Grades 7-12

Adding endorsement grades 7-12 to endorsement grades 1-9 the holder of a certificate with endorsements of grades 1-9 may qualify for endorsement in grades 7-12 by the completion of 15 quarter hours of credit, 9 of which are in the field of professional education for grades 7-12, including at least 3 quarter hours in appropriate methods and by the meeting of requirements for endorsement in at least one area.

Adding endorsement grades 1-9 to endorsement grades 7-12, the holder of a certificate with endorsement of grades 7-12 may qualify for endorsement in grades 1-9 by completion of 18 quarter hours credit, 9 of which are in the field of professional education grades 1-9, including at least 3 quarter hours of methods appropriate to grades 1-9.

CURRICULUM IN ELEMENTARY EDUCATION

Elementary Education majors who plan to complete all requirements for graduation as set up by the University will receive the Bachelor of Science degree in elementary education. Each student is required to secure the approval of his faculty adviser in the department of elementary education concerning his program of work. The faculty adviser will help the student prepare a program of study leading to certification as well as to graduation.

CURRICULUM FOR ELEMENTARY EDUCATION

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Eng. 101-2-3	3	3	3
Geo. 171-2-3	3	3	3
Music 101-2-131	3	3	3
Math 101-2		3	3
Art 133	3		
Soc. Stud. 111-2-3	3	3	3
P. E. 11-12-13	1⅓	1⅓	1⅓
	16⅓	16⅓	16⅓

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Eng. 211-12-261	3	3	3
Sci. 121-22-123-	4	4	4
Health 211-2-3	3	3	3
Soc. Stud. 114	3		
Nutrition 212		3	
Math 200			3
Educ. 201 - Health 151		3	3
L. S. 211	3		
P. E. 20-50	1⅓	1⅓	1⅓
	17⅓	17⅓	17⅓

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Art 201	3		
Educ 231-2-3	3	3	3
Sci 301-2	3	3	
Educ. 301			
Psy 242-243		3	3
Educ 333-387	3		3
Psy. 312		3	
Speech 201-2	3	3	
P. E. 243 - Hist. 341		3	3
Electives **	3		
	18	18	15

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Educ 431-2-3	9		
Educ. 481		3	
Educ. 473		3	
Psy 463		3	
Educ 462			3
Educ. 443	3		
Educ 444-465		3	3
Pol. Sci. 221-2		3	3
Electives (6 hrs)**		3	3
Educ. 450			3
	12	18	15

**Specified departmental electives (9 quarter hours) choose from the following in the junior and senior years: Library Science 362, 363, 441; Science Education 303; Philosophy 426; Education 363.

The maximum number of hours to be taken during the period of practice teaching is 15.

COURSES IN ELEMENTARY EDUCATION

231. *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.

232. *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.

233. *Teaching the Social Studies in the Elementary School.* (3) This course considers the educational values of the social studies and ways and means of integrating history, geography, civics, and the development of pupils' appropriate emotional and thought reactions to social problems and issues.

332. *History of Education in the United States.* (3) A survey course of the evolution of public education in the United States. (Must be taken on the Junior or Senior level).

333. *Seminar Workshop.* (3) This course is designed to help prospective teachers plan, organize, and execute the type of work they are expected to do during the practice period; making charts, graphs, friezes and emphases on the actual construction of curriculum material together with analysis of methods involved. (Must be taken on the Junior or Senior level).

363. *Activities in the School Program.* (3) The basic principles and procedures involved in guidance programs which meet the educational, social, vocational needs of the elementary and high school pupils. Special attempts are made to show the place of the assembly programs, student civic organizations, clubs and athletics in the total growth and development of the student population, both individually and in group activities. (Must be taken on the Junior or Senior level).

431-2-3. *Student Teaching in the Elementary School.* (9) Fall, winter, spring quarters. A three-part course consisting of directed observation and participation in instruction in elementary grades; open only to seniors and teachers with some experience. It proposes to offer situations which the student will meet in actual work and give him benefit of skilled and experienced teachers' solution of school problems. Conferences for interpreting school activities in the light of the observation and parallel readings are held frequently. Applicants must have a minimum average of 2.0. Applications for student teaching must be filed the preceding quarter in which the applicant desires student teaching privileges. Parallel, 443. Prerequisites: Education 201, 231-2-3, 301, 333, 387; Psychology 242, 243, 312; Art 133; Music 101; P.E. 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 231-2-3, 333, Psychology 221, 242-43. Must be taken along with Education 431-2-3, Student Teaching. (Senior level only).

444. *Problems in Teaching.* (3) A critical viewing of some specific problems in Elementary teaching with emphases on methods and content, as determined by the maturity and intent of individual students. (Must be taken on the Senior level).

450. *Senior Project Writing.* (3) Designed to give opportunity for students to work individualy 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.)

481. *Early Childhood Education.* (3) The course seeks to provide experience and understandings for the student who is interested in becoming a kindergarten and/or primary teacher. Also interprets the mechanics of desirable educational conditions, programs, and practices for these levels. Open to seniors only.

COURSES IN ELEMENTARY EDUCATION

Graduate

505. *Problems in Science for Elementary Teachers.* This course is concerned with the problems of teaching elementary science. Students who plan to do thesis problems in the area will be guided in the preparation of their preliminary plans. Acquaintance with educational research and other literature concerned with the teaching of elementary science. Consideration of problems related to the purposes, content, materials, activities and evaluation in the area.

520. *Curriculum Construction in the Elementary School.* (3) Designed for teachers and administrators who desire to study newer curriculum practices and needed changes in selection and organization of curriculum content.

523. *Advanced Course in the 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, computational skill and applications in quantitative problems of everyday living.

527. *Advanced Course in the Teaching of Social Studies.* (3) This course is designed for students who desire to explore the newer practices and materials existing in the social studies program of the elementary schools. It offers the individual student an opportunity for creative expression and directed study in areas of need and interest.

529. *Advanced Course in the Teaching of Language Arts.* (3) A study of the current trends and newer practices in the teaching of subjects which make up the language arts. It offers the individual student an opportunity for creative expression, and directed study in areas of need and interest.

537. *Evaluating the Elementary School.* (3) This course offers a student the opportunity to construct and use the evaluative criteria for analyzing the total elementary school program or aspects of such programs of special interest and need to the individual student. Consideration of probable outcomes of the evaluative process is stressed.

538. *Basic Principles of Elementary Education.* (3) A critical analysis of child-centered and society-centered points of view in elementary education; purposes or values basic to a balanced, functional instructional program in the elementary school.

546. *Organization and Administration in the Elementary School.* (3) Designed for administrators and teachers who desire to study purposes, practices, and trends in elementary school administration. The special areas include: the elementary school in the organization of the public school system; objectives of elementary education; school and community relationships; organization of the curriculum and pupil personnel work; evaluating various phases of the school organization and facilities; and research in elementary school organization.

547. *Current Issues, Trends and Practices in the Elementary School.* (3) This course is designed to give teachers, supervisors and administrators an opportunity to examine the current issues, trends, and practices in the elementary school as thy refer to procedures, equipment and materials of instruction. Practical suggestions will be made to problems involving the improvement of instruction.

548. *Personnel Problems in the Elementary School.* (3) Emphasis on operation of groups in schools and communities stressing personnel policies and practices in schools and communities. Special consideration is given to pupil-teacher, teacher-principal, principal-staff problems and the interrelationships of these persons to each other and the community.

549. *Supervising the Elementary School.* (3) This course is designed to acquaint the students with organization and personnel factors in the elementary school with special emphasis on methods and techniques, problems, and practices of supervision. Attention is given to problems of human relations in the supervisory job.

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

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

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

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

Elementary Education

General Education Core:
- Education 502
- Education 511
- Education 526
- Psychology 502
- Psychology 543

Elementary Education Core:
- Education 527
- Education 512
- Education 529
- Mathematics 523
- Education 500
- Education 514
- Psychology 551
- Sci. Ed. 505

Electives (6 quarter hours):
- Sociology 451
- Sp. Ed. 465
- Education 473
- Education 537
- Education 520
- Education 524
- Education 538
- Education 548
- Education 549
- Education 564
- Education 573
- Education 575
- Education 562
- Education 595
- Education 596
- Education 546
- Education 587
- Education 534
- Education 591
- Education 592
- Education 593
- Phychology 523
- Psychology 531
- Education 547

Area of Secondary Education

Program of Study

The program for the preparation of prospective teachers for the secondary level is designed to provide students an opportunity to attain the necessary competencies for successful performance of the professional tasks required of teachers.

Students who plan to teach in the secondary schools have two choices for certification: Broad area endorsement, such as, Science, Social Studies, and Foreign Language; and single subject endorsement, such as, Biology, Economics, and French. It is suggested that students elect areas or subjects which will meet the requirements for teaching at least three subjects in the secondary schools. Those students interested in library work or work as teacher-librarians should take sufficient courses in Library Service to meet state requirements.

The student should begin his professional training at the beginning of his sophomore year and continue this training along with his general education courses and major courses through the senior year.

In planning the program of professional education attention was given to certain areas of concern to the professional preparation of teachers which are specifically mentioned by state teacher certification authorities. 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.
9. Classroom Methods, Management, and Materials.
10. Observation and Student Teaching.

Tennessee State Certification requirements expect that all teachers should be offered courses that will enlarge upon the designated areas and enable teachers to assist pupils with subject matter content and personal experiences in the best possible manner. In terms of quarter-hour credit the State of Tennessee Certification Authorities have recommended that a *minimum* program totalling 36 quarter hours of credit in professional education should be offered.

The pattern of course work offered in Secondary Education to meet the State requirements for the professional core is presented to prospective teachers in a sequence best suited to dovetail acceptably with general education and specialized departmental requirements as well as the professional competencies enumerated by the State Board of Education. Course offerings to prepare the prospective teacher are offered in Secondary Education and in the Department of Psychology.

Professional Educational Core and Sequence of Course Work

Core Professional Education Courses:

1. Educ. 201—Foundations of Education
2. Psych. 242—Educational Psychology I, Human Growth and Development
3. Psych. 243—Educational Psychology II, Psychology of Learning
4. Educ. 301—School Organization, Administration and Management
5. Psych. 312—Measurement and Evaluation
6. Educ. 387—Curriculum Development
7. Educ. 462—School and Community Relations
8. Psych. 463—Classroom Guidance

Specialized Professional Education Courses:

1. Educ. 371—General Methods and Classroom Management
2. Educ. 471—Methods Courses in Areas of Endorsement:

Aeronautics	Foreign Language
Art	Mathematics
Business and Economics	Music
English	Science
Health Instruction	Social Studies (History, Geography, Political Science, Social Science)
Health and Physical Education	Speech
Industrial Arts	Vocational Agriculture
	Vocational Home Economics

3. Educ. 472—Student Teaching in Area of Endorsement

The sequence of course work to be observed by students from year to year in terms of required and elective work within the 36 quarter hour pattern is shown below. The program outlined is merely suggestive for a typical student program. Note that the professional sequence starts in the sophomore year and that some courses serve as prerequisites for others.

Sophomore Year

Educ. 201. Foundations of Education
Psych. 242. Educational Psychology I
Psych. 243. Educational Psychology II

Junior Year

Educ. 301. School Organization, Administration, and Management
Psych. 312. Measurement and Evaluation
Educ. 371. General Methods
Educ. 387. Curriculum Construction

Senior Year

Educ. 462. School and Community Relations
Psych. 463. Classroom Guidance
471. Methods Course in Area of Endorsement
Educ. 472. Observation and Student Teaching

In following the minimum sequence presented above, it is important that students and their advisers note that the indicated prerequisite courses should be taken sequentially so that a continuous and well-integrated pattern of pre-professional experiences will be offered students.

Student Teaching

Students preparing to schedule observation and student teaching in the senior year should study carefully the general requirements for student teaching. In addition, the area of Secondary Education expects that the student will be able to (1) show evidence of emotional stability, (2) receive certification from health authorities that no serious physical condition detrimental to the welfare of children to be taught is present, (3) obtain certification from major departments as to readiness to engage in student teaching, and (4) be accepted as a student teacher by the cooperating school system.

Requirements for Student Teaching

Students enrolling for student teaching must be classified as seniors, i.e., having 144 quarter hours.

1. Candidates for student teaching should be required to show acceptable degree of proficiency on reading and writing tests devised or selected by the secondary committee a quarter preceding the student teaching courses.
2. No student classified on probation should be admitted to methods and student teaching courses.
3. Sequence of courses prerequisite to student teaching.
   a. On the secondary level
      (1) Educ. 201—Foundations of Education
      (2) Psych. 242—Educational Psychology I, Human Growth and Development
      (3) Psych. 243—Educational Psychology II, Psychology of Learning
      (4) Educ. 301—School Organization, Administration, and Management
      (5) Psych. 312—Measurement and Evaluation
      (6) Educ. 387—Curriculum Development
      (7) Educ. 371—General Methods

State Certification Requirements

After September 1955, the new State of Tennessee Regulations for Certification of Teachers is in effect. The rules governing transition to the new regulations and program are that:

1. All permanent certificates in effect September 1, 1953, remain in full force as provided by the certificate.

2. All persons who began college training before September 1, 1953, and who apply before September 1, 1955, may obtain a non-renewable elementary certificate valid for a period of five years by complying with statutes, rules and regulations which were in effect on January 1, 1951, for the permanent elementary certificate.

3. All persons who began college training before September 1, 1953, may obtain the Teachers Provisional Certificate endorsement including superintendent and supervisor in such subjects and/or areas where statutes, rules and regulations in effect on January 1, 1951, have been met, provided the Bachelor's degree has been obtained by September 1, 1958.

It is to be observed that prospective secondary school teachers who enter the University after September 1, 1953, will be required to present a *minimum* of 60 quarter hours of general education, a *minimum* of 36 hours of professional education, and specified minimum hours of work in the selected area or areas of endorsement. Students planning to become certified teachers in teaching areas are urged to consult the *Certification Rules and Regulations of Tennessee* regarding quarter hours of credit and courses required to meet the areas of endorsement.

Suggestions Regarding Courses and Required Credit Hours in Specialized Academic Areas

Program for High School Teachers

High School teachers need a broader preparation than those provided in a program of study which required rather high specialization in one or two subjects. The average high school teaching position in Tennessee requires certification in several subjects or teaching areas. To encourage broad professional training, the area of Secondary Education recommends that each student plan, with the help of his Education adviser, a program which will give adequate preparation in at least three fields of teaching.

Secondary school curricula are designed to give preparation for teaching in a large number of areas discussed below in terms of credit hour requirements.

While students planning to enter the teaching profession are urged to choose more than two areas of concentration it is to be noted that Home Economics, Agriculture and Business students are exempted from this rule and should consult the special programs provided them. The various University departments have enumerated the specific number of credit hours and courses required on a major or minor basis. The following are minimum hour requirements for certification to teach in specific areas of instruction in the public schools of the State of Tennessee:

ENDORSEMENTS IN SUBJECTS, GRADES 7-12

Aeronautics

The applicant shall offer a minimum of 18 quarter hours credit in aeronautics. The hours shall include civil air regulations, navigation, meterology, theory of flight and engines, communications, aircraft familiarization, social, geographic and economic implications of aviation, and flight instruction.

General Agriculture:

The applicant shall offer a minimum of 36 hours, including Conservation, General Forestry, Agricultural History, Land Economics, Agricultural Legislation, Agricultural Policies, Cooperation in Agriculture, and Field Corps.

Industrial Arts

The applicant shall offer a minimum of 45 quarter hours distributed in the areas listed below with not more than 15 quarter hours in any one area and not less than 6 quarter hours in art appreciation and design.

1. Graphic Arts such as drawings, printing, photography.
2. Woods and Construction, such as furniture, carpentry, finishing, upholstering, concrete, masonry.
3. Metals: such as sheet, machine, forging, foundry, welding, art metals.
4. General Electricity: such as communications, power, light, household electricity.
5. Crafts: such as general pottery, weaving, plastics, woods, metals.
6. Mechanics: such as auto, home, aircraft, general shop.
7. Art: such as appreciation, design, color, decoration, painting.

An applicant offering a minimum of 27 quarter hours in two or more of areas 1 to 6, may be endorsed for those areas in which a minimum of 12 quarter hours has been earned.

Fine and Industrial Arts

The applicant shall offer a minimum of 54 quarter hours with not less than 20 quarter hours in Fine Arts and 20 quarter hours in Industrial Arts. Fine Arts shall be represented by not less than 6 quarter hours each in techniques, appreciation, and appropriate methods and materials of teaching. Industrial Arts shall be represented by not less than 6 quarter hours each in three of the areas listed, namely, Graphic Arts, Woods and Construction, Art Metals, General Electricity, Crafts, and Mechanics.

Bible:

The applicant shall offer at least 18 quarter hours in the literature of the Bible.

Business:

The applicant shall offer a minimum of 27 quarter hours, including 18 quarter hours in introduction to business, accounting, typewriting, business law, economic, business matematics and be endorsed in General Business.

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 inclding principles and related subjects in that field
Salesmanship	9 quarter hours selected from salesmanship, marketing, merchandising, advertising, and retailing
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

NOTE: Institutions which use adequate means of testing proficiency in these areas may submit a record of performance in lieu of required credit, provided that the most advanced course for which credit is presented is taken in the institution.

English

The applicant shall offer a minimum of 45 quarter hours. Of this total, 9 hours may be in speech, journalism, and/or dramatic arts. Applicants offering 36 quarter hours in English and 18 quarter hours in speech may be certified in both. (See Speech.

Foreign Language (French, German, Latin, Spanish, etc.):

The applicant shall offer for a single foreign language a minimum of 27 quarter hours based upon two or more units of high school credit, otherwise 36 quarter hours; for two foreign languages, 45 quarter hours with not less than 18 quarter hours in each in addition to two units of high school credit in each language.

Health Instruction

The applicant shall offer a minimum of 24 quarter hours of health to include the areas listed below:

1. Foods and nutrition.
2. Safety education and first aid.
3. Communicable disease control.
4. Body use and care, including such areas as personal hygiene, diseases and disabilities other than those classed as communicable.
5. Human relations, including such areas as mental hygiene, family relations, and community relations.
6. Sanitation of the home, school and community.

Home Economics (Non-Vocational)

The applicant shall offer a minimum of 36 quarter hours in the field of home economics. This training shall be distributed as follows:

12 quarter hours in foods and nutrition.
12 quarter hours in clothing and textiles.
12 quarter hours in home management, home furnishings child care and home nursing.

Mathematics

The applicant shall offer a minimum of 27 quarter hours of college mathematics including college algebra, trigonometry, and analytical geometry. A course in general or business mathematics may be included in the minimum requirements. If the applicant has not had solid geometry in high school it is recommended that it be included in his college program.

Science

The applicant shall offer a minimum of 48 quarter hours of credit in the sciences (biological science, chemistry, physics, and geology) with at least three areas represented. The applicant will be certified to teach those sciences in which he has completed a minimum of 12 quarter hours of work. When any two endorsements representing both the physical and the biological science fields appear on the certificate the holder will be certified to teach general science. If survey or integrated courses in the biological or physical science fields are provided by the training institution these may be included in the required 48 hours. (See Mathematics and Physical Science.)

For endorsement in a single subject (biology, chemistry, physics) 24 quarter hours are required, 4 of which may be in a survey or integrated course.

For an endorsement in General Science 24 quarter hours are required which must include general biology and physical science.

Mathematics and Physical Science

When endorsement in mathematics and physical science is sought in combination the applicant shall present a minimum of 21 quarter hours in mathematics (including college algebra, trigonometry, and analytical geometry) and a minimum of 36 quarter hours in the physical sciences (including at least 12 quarter hours in chemistry, 12 quarter hours in physics, and 12 quarter hours in any two of geology, geography and astronomy) plus 18 quarter hours selected from related fields in mathematics and/or physical science.

Social Studies

The applicant for endorsement in the social studies may follow one of two plans, as follows: (1) area (group) certification, or (2) individual area certification.

1. Area or Group Certification: The applicant for endorsement in social studies shall offer a minimum of 54 quarter hours distributed as follows:

a. Eighteen in history:	
American	9 quarter hours
European or World	9 quarter hours
b. Sociology	9 quarter hours
c. Geography	9 quarter hours
d. Economics	9 quarter hours
e. Government	9 quarter hours
Total	54

2. History Endorsement: The applicant for an endorsement in history shall offer a minimum of 27 quarter hours to be distributed as follows:

a. American	9 quarter hours
b. European or World	9 quarter hours
c. Electives (History)	9 quarter hours

3. Individual Area Endorsement Other Than History: The applicant for an endorsement in any one teaching area of the social studies, including Economics, Geography, Sociology or Government shall offer at least 18 quarter hours in the teaching area so specified.

Speech:

The applicant shall offer a minimum of 21 quarter hours in Speech to include such courses as Fundamentals of Public Speaking, Oral Interpretation, Debate, Discussion, and Drama. (See English).

Core Curriculum:

The applicant shall offer a minimum of 45 quarter hours in either of the broad fields of Language Arts or Social Studies, and a minimum of 36 quarter hours in each of the other broad fields of Language Arts, Social Studies, and the Sciences.

NOTE: Certificates endorsed grades 1-9 entitle the holder to teach core subjects in those grades.

ENDORSEMENTS IN SUBJECTS, GRADES 1-12

The applicant shall meet the general education requirement and the professional education requirement for grades 1-9 or grades 7-12.

Art:

The applicant shall offer a minimum of 36 quarter hours, with at least 18 quarter hours in techniques, at least 6 quarter hours in appreciation, and at least 6 quarter hours in appropriate methods and materials of teaching.

Health and Physical Education

The applicant shall offer a minimum of 36 quarter hours of health and physical education divided as follows:

Eighteen quarter hours of health which must include the areas listed below:

1. Foods and nutrition.
2. Safety education and first aid.
3. Communicable disease control.
4. Body use and care, inclding such areas as personal hygiene, diseases and disabilities other than those classed as communicable.
5. Human relations, including such areas as mental hygiene, family relations and community relations.
6. Sanitation of the home, school and community.

Eighteen quarter hours in physical education which must include the areas listed below:

1. Mass gymnastics and conditioning activities.
2. Informal games and relays.
3. Singing games and rhythmic activities.
4. Team games.
5. Individual and dual sports.
6. Safety skills in outdoor and aquatic activities.
7. Mimetics and story plays.
8. Stunts and tumbling.
9. Modified or adapted activities for the handicapped student.

NOTE: Credit on required activity courses and/or military service may not apply towards this minimum.

Library Service

The applicant shall meet all requirements for the endorsement in grades 1-9 or an endorsement in a subject area in grades 7-12, and in addition shall meet the following requirements in the field of library service:

1. Teacher-Librarian. The applicant shall offer a minimum of 18 quarter hours of library service in the following:

   Books and Related Materials for Children and Young People
   Reference Materials
   Organization of Materials
   School Library Administration

2. Librarian. The applicant shall offer a minimum of 27 quarter hours of library service. This shall include, in addition to the above 18 quarter hours, work in:

   Books and Related Materials for Adults
   Audio-Visual materials
   Principles of Librarianship

Music

The applicant may apply for endorsement in Public School Music, and/or Instrumental Music.

The applicant for either endorsement in music shall offer a minimum core of music theory and harmony, 18 quarter hours; instrumentation or orchestration, 3 quarter hours; applied music, 18 quarter hours; conducting, 3 quarter hours; history and appreciation, 3 quarter hours; a minimum total of 45 quarter hours.

The applicant for the Public School Music endorsement shall meet the core music requirements listed above, and shall offer 9 quarter hours of appropriate methods and materials of teaching, a minimum total of 54 quarter hours.

The applicant for the Instrumental Music endorsement shall meet the core music requirements listed above, and shall offer 9 quarter hours of appropriate methods and materials of teaching and 9 quarter hours of applied music beyond the 18 quarter hours in core, a minimum total of 63 quarter hours.

COURSES IN SECONDARY EDUCATION

Undergraduate

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.

242. *Educational Psychology I.* (3) See description under Psychology Department.

243. *Educational Psychology III.* (3) See description under Psychology Department.

312. *Measurement and Evaluation in Public Schools.* (3) See description under Psychology Department.

371. *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 teacher-learning process. Prerequisite for student teaching. Prerequisite: Psych. 242, 243.

387. *Curriculum Development.* (3) A critical study of the reorganization, construction, and administration of the high school curriculum in the light of modern educational principles and objectives. Prerequisites: Education, 201, Psychology 242, 243.

414. *Principles of Teaching.* (3) The formulation of basic principles of teaching and a study of how these principles are applied in the classroom. This course is taken concurrently with student teaching.

426. *Philosophy of Education.* (3) A consideration of the function or purpose of education in American schools and the bearing of this purpose on problems of organization and administration; the selection of the subject matter to classroom practice. Prerequisite: Junior or Senior classification.

462. *School and Community Relations.* (3) This course is 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.

463. *Classroom Guidance.* (3) See description under Psychology Department.

471. *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. Examples of departmental offerings are: History 471, Teaching History in Secondary Schools, etc. Students should consult their departmental offerings for the appropriate course to be scheduled.

472. *Observation and Student Teaching in the Secondary Schools.* (6-12) Actual classroom experience in secondary schools under the charge of expert teachers in nearby 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 a half day 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, Ed 371, and Specific Methods.

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.

GRADUATE COURSES

525. *Problems in Secondary Education.* (3) This course considers secondary school problems in the fields of curriculum materials and patterns, general techniques and evaluation of the outcome of instruction.

528. *The Junior High School.* (3) Designed for students who are looking forward to securing teaching positions in the junior high school and for in-service teachers who would like to concentrate their work around the problems of instruction, organization of materials, selection of materials, and evaluation of pupil growth.

Secondary Education

General Education Core

Education 502
Education 511
Education 526
Psychology 502
Psychology 543

Secondary Education Core

Education 512
Education 514
Education 500
Five Courses in Secondary major

Electives (6 quarter hours):

Education 524
Education 505
Education 551
Education 573
Education 581
Education 587
Education 473
Psychology 551
Sp. Ed. 465
Psychology 532
Psychology 531
Sociology 451
Sociology 521
Sociology 533
Sociology 542
Education 525
Education 528
Education 564
Psychology 555

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 is no exception, but 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 in the area of mental retardation.

Students who pursue the course in special education will be able to meet the requirements for State certification. Each prospective teacher qualifying for a certificate in mental retardation should have completed requirements for a degree in either elementary or secondary education (endorsement grades 1-12). Those who have certificates on the secondary level must also hold an elementary certificate. Specialized courses for certification are taken at the undergraduate level.

Students may also take additional specialized courses, courses in the related fields, and the professional "core" to fulfill the requirements for a Master's degree in the educable mentally retarded. For general requirements of admission see catalogue section on "general requirements." Students desiring to pursue work toward the Master's degree in special education must have graduated from a recognized college, and have completed the required undergraduate courses in special education (Special Education 465, 467, 471, 473).

COURSES FOR CERTIFICATION

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 Mentaly 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.
Sp. Ed. 486	Psychology of Exceptional Children	3 hrs.
Sp. Ed. 487	The Crippled Child	3 hrs.
Sp. Ed. 488	Problems, Methods, and Materials for Teaching the Slow Learner	3 hrs.
Sp. Ed. 489	The Gifted Child	3 hrs.

(The prospective teacher must have completed at least 3 hours of teaching the normal child; this is included in the requirements for the elementary certificate.)

COURSES IN SPECIAL EDUCATION

465. *Introduction to Special Education.* (3) Designed to acquaint the student with the general field of special education—its purpose and scope. The course is a pre-requisite to all courses either graduate or undergraduate credit. 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 or 467.

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. Undergraduate and graduate credit. Prerequisite—Sp. Ed. 465, 467 or 567.

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 situation. Students must have completed the sequence of courses listed in the specialized area.

486. *Psychology of Exceptional Children.* (3) Acquaints students with facts concerning the behavior characteristics of various types of exceptional children. Prerequisite—Sp. Ed. 465.

487. *The Crippled Child.* (3) A study of the common orthopedic deviations, their problems, care, education, and the auxiliary services and agencies. Offered first session of summer.

488. *Problems, Methods and Materials for Teaching Slow Learners.* (3) Designed for experienced teachers. Offered Spring quarter and second summer session.

489. *The Gifted Child.* (3) A general study of the gifted child's nature and development problems, curriculum needs and methods of teaching. Offered second summer session.

*Both graduate and undergraduate credit.

Requirements for Master of Science Degree in Special Education for Teachers of The Educable Mentally Retarded

To complete a Master's degree program in special education with emphasis in the education of the educable mentally handicapped child, the student is expected to complete a minimum of 45 quarter hours: 15 quarter hours in the core professional; 15 quarter hours in the specialized area; and 15 quarter hours in related course work.

Prerequisite—Sp. Ed. 465—Introduction To Special Education..... 3 qr. hr.

Core Professional (15 quarter hours)

Psy 502	Advanced Statistics	3 qr. hrs.
Psy 523	Advanced Mental Hygiene and Personality	3 qr. hrs.
Psy 531	Psychometrics	3 qr. hrs.
Psy 551	Emotional, Social and Mental Growth	3 qr. hrs.
Ed 511	Methods of Research	3 qr. hrs.

Specialized Area (15 quarter hours)

Ed 567	Psycho-educational Problems of Exceptional Children	3 qr. hrs.
Ed 568	Occupational Education for Mentally Retarded	3 qr. hrs.
Ed 570	Community Resources in Special Education	3 qr. hrs.
Ed 571	Administration and Supervision of Education Programs	3 qr. hrs.
Ed 512	Thesis Writing	3 qr. hrs.

Related Course Work (15 quarter hours)

Soc 452	Sociology of Child Development	3 qr. hrs.
Sp Ed 487	The Crippled Child	3 qr. hrs.
Sp Ed 489	The Gifted Child	3 qr. hrs.
Speech 531	Speech Correction for The Classroom Teacher	3 qr. hrs.
Psy 563	Diagnosis of Reading Disabilities and Remedial Reading	3 qr. hrs.
Ed 573	Audio-Visual Education	3 qr. hrs.
Psy 580	Social Psychology of The Handicapped	3 qr. hrs.

Description of Courses

567. *Psycho-educational Problems of Exceptional Children.* (3) A study of relevant research dealing with the physical, mental, emotional, and social traits of exceptional children; consideration of special school provisions needed for their education and development.

568. *Occupational Education for the Mentally Retarded.* (3) The course offers education with reference to employment opportunities, job analysis, guidance and placement procedures, and assistance available from outside agencies. Prerequisite—567.

570. *Community Resources in Special Education.* (3) The course provides for visits to agencies and schools for the handicapped, trips to rehabilitation centers, and to sheltered workshops for the physical, mental and emotional handicapped; hospital classes, special classes and schools. Representatives of coordinating agencies and informational services will visit the class for discussions of services and organizations. Prerequisites—Sp Ed 567, 568.

571. *Administration and Supervision of Education Program.* (3) Problems of local and State educational leadership in providing needed services for the handicapped and gifted child. Prerequisites—Sp Ed 567, 568.

580. *Social Psychology of the Handicapped.* (3) A study of the social and emotional adjustment of handicapped children and adults, the effects of different handicaps on adjustment, the effects of limitations imposed on different groups of handicapped children and adults by society and the attitude of the individual toward his handicap. Prerequisite—Psy. 551.

NOTE: Students who are interested in speech training and hearing may refer to the curriculum in Speech and Hearing in the Department of Speech and Drama.

THE DEPARTMENT OF ART AND MUSIC EDUCATION

EDWARD C. LEWIS, JR., *Head*

General Statement

The Department of Art and Music Education is organized to serve the State's Art and Music Education structure through teacher education, leadership, and statewide cooperation; to provide sound guidance and thorough training for its gifted students whose career goal is professional music; and to prepare students interested in art to continue art study and to meet the requirements for teaching Art in the schools of the state; 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 of study are designed to provide experiences leading to general culture, a mastery of fundamental tools, adequate performance ability, and the science and art of teaching. Three (3) courses of study in music education and one (1) course of study in art education are offered to prepare the student in that area of teaching for which he is best suited. The undergraduate programs lead to the Bachelor of Science degree in Music Education and the Bachelor of Science degree with a major in Art.

The minimum number of quarter hours required for the Bachelor of Science degree in Music Education is *200*. The minimum number of quarter hours in *Music* required is *110*. The minimum number of quarter hours in 300 and 400 level courses required for both the major in music education and for graduation is *47*. Total number of quarter hours in 300 and 400 level courses required for graduation is *68*.

The minimum number of quarter hours required for the Bachelor of Science degree with a major in Art Education is 209. The minimum number of quarter hours in Art required is 72 of which 30 hours are on the 300 and 400 levels. The minimum number of quarter hours of 300 and 400 level courses required for graduation is 66.

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 401-2-3- (9).

CURRICULUM IN ART EDUCATION

FRANCES E. THOMPSON, *Coordinator*

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 101-2-3	3	3	3
Art 101-2-3	3	3	3
Math 200	3		
Social Studies 111-12-13	3	3	3
French 101-2-3 or Spanish 101-2-3	3	3	3
Physical Education 11-2-3 (W)	1 1/3	1 1/3	1 1/3
(M)	1/3	1/3	1/3
Air Science (M)	1	1	1
	16 1/3	16 1/3	16 1/3

Sophomore Year	*Quarter Hours Credit*		
Phychology 242	3		
Phychology 243			3
Education 201			3
Natural Sci. 121-22-23	4	4	4
Amer. History 201-2-3	3	3	3
Art 121-22-23	3	3	3
Phy. Educ. 20's - 50's Women	1⅓	1⅓	1⅓
Men	⅓	⅓	⅓
Health 151		3	
Soc. Studies 114		3	
Economics 211	3		
Air Science (M)	1	1	1
	17⅓	17⅓	17⅓

Junior Year	Quarter Hours Credit		
Name of Course	I	II	III
Psychology 463	3		
Education 301		3	
Education 387			3
English 211-12-13	3	3	3
Art 131	3		
Art 221-22-34	3	3	3
Art 301			3
Clay Mod. Art 302-3		3	3
Crafts Art 241			3
Political Science	3		
Physical Educ.		3	
Elective		3	
Music 131	3		
	18	18	18

Senior Year	Quarter Hours Credit		
Name of Course	I	II	III
Psychology 312		3	
Education 472	6		
Education 471a-b	3	3	
Education 462			3
Typing 211-12-13	3	3	3
Painting 321-22-23	3	3	3
Proj. Perform. 450		3	3
Art Hist. 401-2-3	3	3	3
Elective			3
	18	18	18

Description of Courses for Art Majors

101. *Introduction to the Arts.* (3) An overview of art expression; what art refers to, for whom art is, and how art can have meaning for one by learning how art is appreciated, and by applying its principles of art performance with materials of one's choice. Aims—to aid development of good taste in making choices among the arts encountered in everyday living, and to achieve self realization through this medium.

The student has opportunity for creative experience with clay, metal, paper, papier-mache, leather, field materials, salvaged materials, and techniques such as: stenciling, block-printing, etching and others.

102-3. *Art Appreciation.* (6) An opportunity to explore both historic and present day art through reading, through pictures and objects, and to investigate the influence of art on our present day living and thinking.

121-22-23. *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.

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.

221-22-23. *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.

321-22-23. *Painting in Oils.* (3) Creative approach, study of form, color, technique.

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.

401-2-3. *Art History.* (9) Survey courses from early Egyptian through the arts of Mesopotamia, Crete, Greece, Rome, Early Christian and Byzantian times.

450. *Senior Project.* (3) Gives student opportunity to express himself in writing form related to a project of his choice.

471a-71b. *Materials and Methods-Art Education.* (6) Experience in understanding the methods and materials for teaching art-grades 1-12.

Courses Offered in the Art Curriculum for Other Majors

Elementary Education

133. *Man and Materials.* (3) Described with courses for Art majors.

201-2. *Manuscript Writing, and Expression in Two and Three Dimensions.* (6) To develop skill in simple letter forms; upper and lower case letters to facilitate the teaching of reading in the first elementary grades. For chart making and chalk-board work. To aid students in understanding the art productions of children at various levels of growth, and to realize that the child's general growth is tied up with his creative development and visa-versa.

Students experiment with devices useful in aiding release of the child's creative impulses. Students study examples of children's work for experience in evaluation of art performance at various levels of growth.

Business Education

203. *Lettering and Design.* (3) Students work freely with pens, paste, spray guns, etc. Creativeness and individuality is encouraged in each exercise.

Home Economics

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) Home furnishing. Guides the student in the application of art principles in appreciation for those things of aesthetic value already on hand, and further to apply these principles in the purchase of furniture, the care of furniture and its enhancing by stain removal, addition of stain or paint, and the understanding of upholstering problems, so as to derive a high degree of satisfaction and comfort from the home environment regardless of economic status.

203. *Costume Design.* (3) 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,n 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. Appreciation 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.

MUSIC EDUCATION

Method of Instruction

Courses in applied music are taught by means of private lessons. Beginning instruction in voice, piano, and in the string and wind instruments is offered in the group instruction method. Academic classes are taught by means of the lecture and project system with laboratory sessions as required or desirable. Upon entry and at the end of each academic year the student's accomplishment level or potential is evaluated by a jury of staff members and he is assigned to a teacher for private or class instruction. Progress is determined through examination by a jury and is based upon the student's native talent, technical advancement, and repertoire. All courses in music, whether applied or academic, must be passed with a grade of "C" or above. Each student will be expected to repeat courses in which a grade of "D" or below is earned until the grade of "C" or above is achieved. All music majors must take Comprehensive examinations in music theory, music history, music education, and applied music prior to practice teaching or during the final quarter of matriculation at the University. The time and place of these examinations will be announced periodically.

Applied Music

Applied music is defined as instruction and preparation in voice and the various instruments. Courses are offered in voice, piano, organ, violin, viola, violincello, string, bass, flute, oboe, clarinet, bassoon, saxaphone, French horn, cornet (trumpet), trombone, tuba, and the percussion instruments. Each student must declare a major applied area of performance and must concentrate in this area for the equivalent of four years, and must present a senior recital during the senior year. It is expected that each student will make numerous appearances on seminars and student recitals during the freshman, sophomore, and junior years. For all students majoring in some instrument other than piano, it is expected that piano will be the minor performance area. In most instances the choice of the major applied area and curriculum will be governed by the proficiency that the student has achieved prior to entering the University.

For those new students who demonstrate talent but are lacking in formal training, the department offers courses in theory and applied music for no credit, and these courses must be pursued until credit level of proficiency is attained. All students enrolled in theory or applied courses for no credit are probationary students and may be advised to change to another academic curriculum.

Ensemble

Membership in Music ensemble groups is open to all students of the University who qualify for admission and participation. Each music major is required to participate in a major ensemble group for the entire four years of his matriculation. Membership is not limited to one ensemble, but Instrumental majors must participate in University Band and Vocal majors must participate in University Choirs. One credit per quarter is offered for each group.

The following ensembles are offered:

University Choir, University Band, Meistersingers, and String Ensemble. These groups are organized to study and perform the standard repertoire for the various combinations of voice or instrument.

Concerts and Recitals

Organized music groups, small ensemble groups, faculty and student soloists offer concerts and recitals frequently in the University auditorium. These are open to the public without charge, and students are particularly encouraged to attend.

Lyceum Series

Each year the University Lyceum Series sponsors an Artist Course, bringing to the campus and the community artists and ensembles of national prominence. This series along with the Faculty series provides a full and diversified musical calendar.

Teacher Education

The essential orientation of the curriculum in music is that of the teacher education program. Opportunities for professional development and for artistic preparation are amply provided for within the general pedagogical framework.

CURRICULUM IN MUSIC EDUCATION

DR. EDWARD C. LEWIS, *Coordinator*

CURRICULUM I

Public School Endorsement

Piano 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 1/3	1 1/3	1 1/3
Music 104-5-7	1	1	1
Choir or Band	1	1	1
Music 11a, b, c,	2	2	2
Music 191-2-3	1	1	1
	16⅓	16⅓	16⅓

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 200	3		
Music 131			3
Soc. Std. 114		3	
Ed 201, Psy 242-243	3	3	3
P. E., AFROTC	1 1/3	1 1/3	1 1/3
Choir or Band	1	1	1
Music 21a, b, c	2	2	2
	17 1/3	17 1/3	17 1/3

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Music 137-8-9	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	3	3	
Choir or Band	1	1	1
Music 31a, b, c	2	2	2
Mus. 471a, 471b, 304 or 305	3	3	3
	19	19	19

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Music 420-21-51	3	3	2
Music 430	3		
Health 211-2, Art 133	3	3	3
Music 428		3	
Ed 462, 463, Ed. 472	3	3	6
Choir or Band	1	1	1
Music 41a, b	2	2	
	15	15	12

CURRICULUM II

Public School Endorsement

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 1/3	1 1/3	1 1/3
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
	16⅓	16⅓	16⅓

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 200	3		
Music 131			3
Soc. Stu. 114		3	
Ed. 201, Psy 242, 243	3	3	3
P.E. AFROTC	1 1/3	1 1/3	1 1/3
Choir	1	1	1
Music 24a, b, c	2	2	2
Music 21a, b, c	1	1	1
	18 1/3	18 1/3	18 1/3

Junior	*Hours Credit*		
Music 137-8-9	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, Ed 371	3	3	3
Choir	1	1	1
Music 34a, b, c	2	2	2
Mus. 471a, 471b. Mus. 304	3	3	3
	19	19	19

Senior Year	*Hours Credit*		
Music 420-21-51	3	3	2
Music 430	3		
Health 211-2, Art 133	3	3	3
Music 428		3	
Psy 462, 463, Ed. 472	3	3	6
Choir	1	1	1
Music 44a, b	2	2	
	16	15	12

CURRICULUM III

Instrumental Endorsement

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 1/3	1 1/3	1 1/3
Music 104-5-7	1	1	1
Band	1	1	1
Music 11a, b, c	1	1	1
Major Applied	2	2	2
	16⅓	16⅓	16⅓

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 200	3		
Music 131			3
Soc. Studies		3	
Ed. 201, Psy. 242-243	3	3	3
P. E. AFROTC	1 1/3	1 1/3	1 1/3
Band	1	1	1
Music, 21a, b, c	1	1	1
Major Applied	2	2	2
	18 1/3	18 1/3	18 1/3

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Music 137-8-9	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, Ed. 371	3	3	3
Band	1	1	1
Mus. 471b, 471c, Music 305	3	3	3
Major Applied	2	2	2
	19	19	19

Senior Year	*Hours Credit*		
Name of Course	*I*	*II*	*III*
Music 420-21-51	3	3	2
Music 430	3		
Health 211-2	3	3	
Art 133			3
Music 428		3	
Psy 462, 463, Ed 472	3	3	6
Band	1	1	1
Major Applied	2	2	
	16	15	12

COURSES IN MUSIC

Undergraduate

Applied Music Courses

The laboratory fees, unless otherwise stated, are for each quarter.

10A, B, C. *Beginning Piano.* (0) Must be repeated each quarter until credit level is reached. Such level includes a satisfactory performance for the music staff of some of the easier works of Bach, and other major composers, and the major and minor scales. Two one-half hour periods. Laboratory fee $7.00.

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) A major concerto, and other exacting materials requiring excellent musicianship, skills and techniques are used. Prerequisite: Music 21C. Two one-half hour periods. Laboratory fee $7.00.

*41A, B, C. *Fourth Year Piano.* (6) The study of advanced piano materials. Prerequisite: Music 41C. Two one-half hour periods. Laboratory fee $7.00.

12A, B. C. *First Year Organ.* (6) Pedal studies, major and minor scales, legato studies, little preludes and fugues of Bach, trios by Stainer Rheinberger, and others, and selected books of Guilmant, Mendelssohn and other reputable composers. Prerequisite: The highest non-credit level of piano 10, and permission from the Office of the Music Department. Two one-half hour periods. Laboratory fee $20.00.

22A, B, C. *Second Year Organ.* (6)Advanced pedal studies and scales. Prerequisite: Music 12C. Two one-half hour periods. Laboratory fee $20.00.

32A, B, C. *Third Year Organ.* (6) A continuation of pedal studies and scales in addition to the Toccate and Fugue in D Minor, and other major works, some from modern composers. Prerequisite: Music 22C. Two one-half hour periods. Laboratory fee $20.00.

*42A, B, C. *Fourth Year Organ.* (-6) A continuation of Music 32C with special emphasis on representative works from the various schools of composition including 20th Century composers. Two one-half hour periods. Laboratory fee $20.00.

13A, B, C. *First Year Violin or Viola.* (6) Instruction with standard elementary violin or viola materials. Prerequisite: Permission from the Office of the Music Department. Two one-half hour-periods. Laboratory fee $7.00.

23A, B, C. *Second Year Violin or Viola.* (6) Instruction with standard elementary violin or viola materials. Prerequisite: Music 13C. Two one-half hours periods. Laboratory fee $7.00.

33A, B, C.
*43A, B, C. } *Advanced Violin or Viola.* (6) Instruction with standard advanced violin or viola materials. Prerequisite: Music 23C. Two one-half hour periods. Laboratory fee $7.00.

14A, B, C. *First Year Voice.* (6) The study of breath control, and voice placement in tone production. Prerequisite: Permission from the Office of the Music Department. Two one-half hour periods. Laboratory fee $7.00.

24A, B, C. *Second Year Voice.* (6) The study of voice drills in voice placement, intonation, breathing, phrasing, diction, etc. Prerequisite: Music 14C. Two one-half hour periods. Laboratory fee $7.00.

34A, B, C.
*44A, B, C. } *Third and Fourth Year Voice.* (6) The study of drills in vocal techniques. Prerequisites: Music 24C. Two one-half hour periods. Laboratory fee $7.00.

191-2-3. *Voice Class.* (3) The study of breath control, voice placement, in tone production, intonation and repertoire. Prerequisite: Permission from the Office of the Music Department. Two one-hour periods per week. Laboratory fee $3.50.

15A, B, C. *First Year Cornet.* (6) Instruction with standard elementary materials. Prerequisite: Permission from the Office of the Music Department. Two one-half hour periods. Laboratory fee $7.00.

25A, B, C. *Second Year Cornet.* (6) The study of standard intermediate materials. Prerequisite: Music 15C. Two one-half hour periods. Laboratory fee $7.00.

35A, B, C.
*35A, B, C. } *Third and Fourth Year Advanced Cornet.* (6) Instruction with standard advanced materials. Two one-half hour periods. Laboratory fee $7.00.

16A, B, C. *First Year Trombone.* (6) Instruction with standard elementary materials. Prerequisite: Permission from the Office of the Music Department. Two one-half hour periods. Laboratory fee $7.00.

26A, B, C. *Second Year Trombone.* (6) The study of standard intermediate materials. Prerequisite: Trombone 16C. Two one-half hour periods. Laboratory fee $7.00.

36A, B, C.
*46A, B, C. } *Third and Fourth Year Trombone.* (6) Instruction with standard advanced materials. Two one-half hour periods. Laboratory fee $7.00.

17A, B, C. *First Year Clarinet.* (6) Instruction with standard elementary materials. Prerequisite: Permission from the Office of the Music Department. Two one-half hour periods. Laboratory fee $7.00.

27A, B, C. *Second Year Clarinet.* (6) The study of standard intermediate materials. Prerequisite: 17C. Two one-half hour periods. Laboratory fee $7.00

37A, B, C.
*47A, B, C. } *Third and Fourth Year Clarinet.* (6) Instruction with standard advanced materials. Two one-half hour periods. Laboratory fee $7.00.

18A, B, C. *First Year Flute.* (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 Flute.* (6) Instruction with standard intermediate materials. Prerequisite: Flute 18C. Two one-half hour periods. Laboratory fee $7.00.

38A, B, C.
*48, B, C. } *Third and Fourth Year Flute.* (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.

Note: Students receive two hours credit per quarter in the major applied and one hour credit for all other applied music courses.

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*Approved for graduate credit.

University Choir. (1) The study of a variety of the finest choral literature. Prerequisite: Permission from the Office of the Music Department. Five or more periods.

University Band. (1) The study and porformance 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. Five or more periods.

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.

Music Education

100. *Piano Class.* (1) An introductory course in piano for students in elementary education. Prerequisite: Recommendation of Elementary Education Dept. Three periods.

101-2-3. *Introduction to Public School Music.* (9) An introductory course in music for students in elementary education. Consists of a thorough study in music fundamentals, terminology, scales, keys, rhythms, and sight singing drills and dictation. Prerequisite: Permission from the Office of the Music Department. Three lectures.

471a. *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.

471b. *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 lecture periods.

471c. *Instrumental Methods.* (3) A study of methods, philosophies, materials, and objectives for teaching instrumental music from grade four (4) through grade twelve (12). Prerequisite: Junior standing in Department of Music. Three lectures.

304. *Choral Methods and Materials.* (3) A study of the principles and problems of teaching voice, managing and directing choral organizations, and the analysis and evaluation of choral materials. Prerequisite: Permission from the Office of the Music Department. Three lectures.

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.

Music History, Literature, and Appreciation

131-2-3. *Music Appreciation, History and Literature.* (9) 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.

137-8-9. *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. *Basic Theory.* (0) Elementary instruction in basic language of music, scale formation, rhythms, sight singing, melodic dictation. Three lectures.

120-1-2. *Freshman Theory.* (12) Basic notation, intervals, scales and modes, rhythms, contrapuntal harmony, written and keyboard, sight singing and ear training; harmonic and form analysis. Prerequisite: Pass the basic Theory Test. Three lectures.

220-1-2. *Sophomore Theory.* (9) Aural and written harmony; keyboard harmony; figured bass; counterpoint, sight singing; ear training; analysis. Prerequisite: Music 122. Three lectures.

320-1. *Counterpoint.* (6) A study of the techniques underlying the principles used in writing good melodies and their association without losing independence Prerequisite: Music 222. Three lectures.

*420-1. *Form and Analysis.* (6) A study of composition in the smaller and larger forms. Prerequisite: Music 225. Three periods.

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 322. Three lectures.

*428. *Physics of Music.* (3) Theoretical 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) Offered only during second quarter. 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.

450. *Senior Project.* (3)

451. *Senior Recital.* (2) Credit given only upon successful completion of public senior recital. Prerequisite: Permission of major applied instructor.

GRADUATE PROGRAM OF STUDIES IN MUSIC EDUCATION

The privileges of graduate study in the music department are open to those applicants who have satisfactorily completed a four-year curriculum, and who have received an undergraduate degree in music at a school or college of recognized standing.

Admission to graduate standing on the basis of a baccalaureate degree to the graduate division does not in itself imply acceptance or candidacy for a degree by the faculty of the music department.

The intensity and extent of music study in the undergraduate years will be a factor in determining the length of time it will take a student to complete the requirements for the graduate degree in music education.

In addition to meeting graduate division requirements, the student must pass music placement and proficiency examinations, and must have a transcript of undergraduate work from the institution from which he received his degree sent to the Office of the Director of Music.

*Approved for graduate credit.

Department of Admission Procedure

The music department maintains three (3) levels of admission. They are as follows:

1. Admission as a Graduate Degree Candidate
2. Provisional Graduate Admission
3. Admission as an unclassified Graduate student

Graduate Degree Candidate

The requirements for admission as a graduate degree candidate are that:

1. The student presents a good undergraduate record with the same major from an accredited Institution.
2. Records indicate that the student's courses in music and general education comprises 20 to 25 per cent of undergraduate courses taken.
3. The student passes satisfactorily proficiency examinations in the following areas:

   Theory through Music 222
   Music History and Literature up to and through Music 139
   Music Form and Analysis up to and through Music 421
   Conducting up to and through Music 305
   Orchestration up to and through Music 430.

If the undergraduate major applied instrument was a band or an orchestral instrument, the student must satisfactorily pass the examination in materials equivalent to the department's fourth year and third quarter course contents. For these students the requirement for Piano is through Piano 21C in addition to a demonstrated functional facility before the music faculty in playing accompaniments for vocal and instrumental solos, orchestral and choral groups, elementary and secondary school materials.

If the undergraduate major applied instrument is Voice, the student must satisfactorily pass the examination in materials equivalent to the department's fourth year, and third quarter contents. For these students, the requirement for Piano is through Piano 21C in addition to a demonstrated functional facility before the music faculty in playing accompaniments for vocal and instrumental solos, orchestral and choral groups, elementary and secondary school materials.

If the student had a combination of Piano and Voice, or Organ and Voice, or Organ and Piano, as undergraduate major applied instrument, the student must satisfactorily pass the examination in materials equivalent to the department's third year and third quarter contents, in applied areas of combination chosen.

If the combination is Organ and Voice, the requirement for Piano is through Piano 21C in addition to demonstrated functional facility before the music faculty in playing accompaniments for vocal and instrumental solos, orchestral and choral groups, and elementary and secondary school materials. The Graduate Record Examination is also required.

Credit earned as a graduate degree candidate counts toward both degree and minimum residence requirements.

Provisional Graduate

Provisional graduate admission is extended to students with poor undergraduate records, or who have graduated from a non-accredited institution. These students must achieve a satisfactory record in all music courses, and other required courses in order to bring up quality point average to at least 2.5. (See Graduate School Bulletin.)

Unclassified Graduate

A student who is not able to qualify as a degree candidate or as a provisional graduate may upon advice from the Office of the Department elect courses both from the undergraduate and graduate levels. Such a student must be qualified to pursue such courses without regard to sequence patterns.

If examinations are taken in these courses, grades earned will be recorded. Credit in these courses will not be counted toward minimum residence require-

ments. Accepted residence requiremnts begin only after the student qualifies as Degree Candidate.

Admittance on any level, that is, as a Degree Candidate, Provisional, or as an Unclassified Graduate student, does not imply that graduation with a M.S. Degree is assured. The responsibility of meeting all requirements satisfactorily rests with the student.

Graduate Courses in Music Education

The department of music offers the Master of Science degree in music education in cooperation with the School of Education. Each candidate for the degree must expect to complete the required core of education as outlined by the chairman of the Graduate School. In general, this core would consist of between eighteen and twenty-one quarter hours of graduate course work. A total of between fifty-five and forty-eight quarter hours must be satisfactorily completed with a grade of "B" or above.

The department of music requires a core of eighteen quarter hours selected from the following graduate music courses: Seminar in Music Education, Advanced Conducting, Advanced Instrumental Technics and Materials, Advanced Vocal Methods and Materials, and Supervision and Administration of School Music. The required core in education courses plus the required core in music education should result in a total of between thirty-six and thirty-nine quarter hours.

Candidate for the Master of Science degree may elect the remaining eleven to eighteen quarter hours of course work from the following three groups of graduate courses, but at least one course must be elected from each group:

Group I—Music Education Electives:
- Introduction to Graduate Study
- Psychology of School Music
- Band Pageantry
- Thesis

Group II—Music Theory:
- Advanced Theory
- Harmonic Counterpoint
- Acoustics of Music

Group III—Musicology:
- The Symphony
- The Opera
- Twentieth Century Music

Note: (See Catalogue for numbers of graduate music courses.)

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

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

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

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

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

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

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

511. *Fundamentals of Research.*

512. *Thesis Writing in Music Education.*

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

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

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

532-533. *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 HEALTH AND PHYSICAL EDUCATION

LUA S. BARTLEY, *Head*

The undergraduate curriculum in the Department of Health Education, and Physical Education is designed to serve all students in the University by contributing to their health, organic vigor, and good mental and physical habits. The department aims (1) to provide incentives for students to engage in some physical activities as a balance to the demands of college life; (2) to provide opportunities for students to develop a reasonable degree of skill in a variety of leisure-time activities both for immediate and later use; (3) to offer opportunities for worthwhile social contacts in the activities of the service program, in intramural activities, and in intercollegiate athletics; and (4) to prepare prospective teachers in the field of health education, physical education, and athletic coaching and to train leaders in the field of recreation.

A minimum total of 192 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 61 quarter hours in the General Education Curriculum and 36 quarter hours in Core Professional Education as outlined and prescribed by the University.

A *major in health and physical education* requires sixty (60) quarter hours of which thirty-six (36) quarter hours must be in courses numbered in the 300 and 400 series.

A *minor in health education* requires thirty-three (33) quarter hours as outlined. A *minor in physical education* requires thirty-six (36) quarter hours as outlined.

An applicant for *certification in health and physical education* must complete a total of thirty-six (36) quarter hours of which eighteen (18) quarter hours are in health eduaction and eighteen (18) quarter hours are in physical education as outlined.

THE PHYSICAL EDUCATION SERVICE PROGRAM

All freshman and sophomore men are required to take two hours of physical education activity each week until six quarters of work have been completed. All freshman and sophomore women are required to take three hours of physical education activity each week until six quarters of work have been completed. A student is not admitted to the upper division of the University until he has fulfilled his physical education requirements. Students whose physical conditions do not permit them to pursue the regular activity courses must take courses in "adapted physical education." These students must secure an admit through the University Physician following a health examination.

Required Courses for All Freshman Students:		*Credit Men*	*Women*
P.E. 11	Body Conditioning and Group Games	1/3	1 1/3
P.E. 12	Elementary Swimming	1/3	1 1/3
P.E. 13	Volleyball	1/3	1 1/3

Required Courses for All Sophomore Students—Select any three:

P.E. 21	Basketball	1/3	1 1/3
P.E. 22	Folk and Square Dancing	1/3	1 1/3
P.E. 23	Soccer and Speedball	1/3	1 1/3
P.E. 25	Stunts, Tumbling, and Pyramid Building	1/3	1 1/3
P.E. 26	Tennis	1/3	1 1/3
P.E. 27	Clog and Tap Dancing	1/3	1 1/3
P.E. 28	Modern Dance	1/3	1 1/3
P.E. 29	Softball	1/3	1 1/3
P.E. 30	Touch Football	1/3	
P.E. 31	Archery	1/3	1 1/3
P.E. 32	Badminton and Deck Tennis	1/3	1 1/3
P.E. 33	Boxing	1/3	
P.E. 34	Track and Field	1/3	1 1/3
P.E. 35	Wrestling	1/3	
P.E. 36	Field Hockey		1 1/3
P.E. 37	Small Craft	1/3	1 1/3
P.E. 38	Bowling	1/3	1 1/3
P.E. 39	Handball and Shuffleboard	1/3	1 1/3
P.E. 41	Golf	1/3	1 1/3
P.E. 42	Social Dancing	1/3	1 1/3
P.E. 91-96 (incl.)	Individually—Adapted Physical Education	1 1/3	1 1/3

Uniform Regulations.—Students enrolled in physical education activity courses are required to provide themselves with the following apparels to be secured through the channel set up by the University:

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

Men

One white "T" shirt	$ 1.00
One pair of blue shorts	1.50
One pair of socks	.50
One pair of gymnasium shoes	4.00
One pair of swimming trunks	2.50
One athletic supporter	.75
Total	**$10.25**

These prices are subject to change. Uniform regulations for elected courses as bowling, dancing, and golf are governed by the activity (for example: Leotards $4.25, Bowling shoes $4.95).

There will be a charge of two dollars and fifty cents ($2.50) laboratory fee per person for each physical education activity course. Of this amount one dollar and fifty-cents ($1.50) is refunded when lock and towel are returned.

Courses Required for Health Instruction as a Minor. In addition to certain prescribed courses, a minor in health education must include 33 quarter hours of work as follows.

Course		*Credit*
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 and Care of Injuries	3
Health 304	Family Health	3
Nutrition 212	Nutrition for Teachers	3
HPE 401	Seminar in Health and Physical Educ.	3
HPE 402	Organization and Administration of Health and Physical Education	3
HPE 403	Individual Physical Education for Handicapped Students	3
	Total	33

Courses Required for Certification in the Area of Health Instruction

Course		*Credit*
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 and Care of Injuries	3
Health 304	Family Health	3
	Total	24

Courses in Health Education

Undergraduate

111. *Orientation in Health Education.* (2) Fall Quarter. A broad overview of the field of health education and its contributions to healthful living. Learning experiences in health provided to orient the student to the relationships which exist among the home, school, and community. The role of the health education teacher in helping the school to realize the broad objectives of education emphasized. Opportunities for service in the recognized areas of health education surveyed in addition to training requisites. Required of all majors in health and physical education.

151. *Personal Hygiene.* (3) Winter and Spring Quarters. Emphasis 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) Fall Quarter Designed to give a general knowledge of those procedures set up to determine the health status of the child and to relate ways and means of enlisting the cooperation of pupils, teachers, and parents in health protection. Required of all majors in health and physical education.

212. *Nutrition for Teachers.* (3) See Department of Foods and Nutrition for description. Required of all majors in health and physical education.

212. *School Hygiene.* (3) Winter Quarter. Concerned with giving general information concerning the total environment in which the child lives while at school. Stress placed on classroom conditions that are conducive to healthful living and the part the teacher, pupil, and janitor must play in maintaining a healthful situation. Required of all majors in health and physical education.

213. *Health Instruction.* (3) Spring Quarter. Emphasis placed on a knowledge of child nature, sources of health information and materials, and ways of gathering such information. Suggestions made regarding techniques and procedures for discovering health needs, with special stress on practice in methods of planning, preparing, and presenting instructional units. Required of all majors in health and physical education.

301. *Community Hygiene and Sanitation.* (3) Fall and Spring Quarters. 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 suburban areas. Various methods of ventilating, heating, and lighting in their relationship to health stressed. An elective for students fulfilling the 60-hour core curriculum in general education.

302. *First Aid and Care of Injuries.* (3) Winter Quarter. Planned for students, teachers, and athletic coaches who often are faced with common emergencies that may arise in the home, school, and gymnasium or on the athletic field and playground. Special emphasis placed on safety procedures to prevent common accidents that arise in these areas. Major consideration given to demonstration and practice of general first aid care of emergencies with specific stress placed on bandaging, the controlling of bleeding, administering artificial respiration, and the treatment of strains, bruises, sprains, wounds, and shocks. A Red Cross certificate is given for successful completion of the course. Required of all majors in health education, physical education, and recreation.

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 emphasized. Stress placed upon the provision and use of health services for material and child care, and for the prevention of illness. The mental, physical, and emotional aspects of the family health also considered. Prerequisites: Nine quarter hours in health education. Required of all majors in health and physical education.

305. *Fundamentals of Public Health.* (3) Designed to present the fundamentals of health and to show the relationship of public health to other welfare interests and activities. Special emphasis on the place of health-medical factors in a comprehensive program of personal and community health. An elective.

*306. *The Teaching of School Health Education.* (3) Stresses the integration of health education with the total school program. Presents materials and appropriate methods of teaching health to children at various age levels. Problems incident to the teaching of school health education investigated. Prerequisites: Nine quarter hours in health education. An elective.

307. *Correlation of Health Education with Other Curricular Subjects.* (3) The relationship of health education to the closely related areas of physical education, the biological sciences, home economics, the social sciences, and recreation. Ways of strengthening health teaching through learning experiences from these related teaching fields discussed, in addition to the logic of teaching combinations selected from these areas. Prerequisites: Nine quarter hours in health education. An elective.

401. *Seminar in Health and Physical Education.* (3) Fall Quarter. Designed to acquaint the prospective teacher with changing trends in health education and in physical education as related to present educational practices. Conducted on a problem—project basis. Required of all majors in health and physical education and minors in health education or physical education. Prerequisites: Twenty-one quarter hours in health education and physical education courses.

402. *Organization and Administraion of Health and Physical Education.* (3) Winter Quarter. Considers the philosophies, policies, procedures, and

financing of school health services and of the physical education program. Effective approaches are discussed for setting up a program and initiating it in relation to the entire curriculum of the school and community needs. Includes utilization and care of facilities and equipment, scheduling of classes, teaching loads, classification of pupils, selection of content, record keeping, and evaluation. Required of all majors in health and physical education and minors in health education or physical education. Prerequisite: Twenty-one quarter hours in health education and physical education courses.

403. *Individual Physical Education for Handicapped Students.* (3) Spring Quarter. A study of the types of cases 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 or physical education. Prerequisite: Health Education 302 and twenty-one quarter hours in health and physical education cour.ses.

GRADUATE COURSES IN HEALTH EDUCATION

501. *Materials and Methods in Health Education.* (3) Concerned with the progressive methods and use of teaching aids and materials in health education on the junior and senior high school levels. Especially designed to acquaint prospective teachers with the fundamentals necessary for discovering health needs of the pupils. Emphasis placed on the methods and techniques for incorporating health activities into the school curriculum.

502. *School Health Problems.* (3) Organized to acquaint the prospective teacher, the in-service teacher, and the administrator with prominent health problems in the school. Special attention given to the health significance of the school environment and pupil progress. Discussion of the protective and corrective services in the school health program with emphasis on the teacher's contribution including health teaching materials, health inspection, testing instruments, charts and techniques, first aid and safety supplies, and school sanitation.

503. *Communicable Disease Control.* (3) Covers the epidemiology principles, and control of communicable diseases. Essential facts regarding communicable diseases presented and the practical use of control measures in the community emphasized. Primarily designed for teachers, school administrators, and other school personnel.

504. *School and Community Health Services.* (3) The types of health services avialable in schools and communities are identified and analyzed. Emphasis is placed on the role of the teacher in the utilization of school and community health resources in the improvement of the health of children. The components of health service programs on both school and community levels are analyzed.

505. *Elements of Community Sanitation.* (3) The etiological relationships existing between water, sewage, insects, food, milk, meat, refuse, soil and milk are identified and analyzed. The sanitary controls governing public facilities as schools, industrial concerns, markets, camps, swimming pools and bathing beaches are discussed. Field experiences are provided for participants in this course.

512. *Thesis Seminar.* This course is designed to assist students in the selection of and adequate conduct of research problems in the area of public health education. Credit is given upon completion of the research problems and the submitting of the thesis.

513. *Fundamentals of Public Health.* (3) The history of the public health movement in America is traced. Underlying philosophy and principles of public health are emphasized. Essential facts concerning the effects of diseases, debilities, defects, injuries and deaths on the human rac are analyzed.

514. *Community Health Processes.* (3) Health problems peculiar to various types of American communities, social classes and ethnic groups are identified and their preventions and solutions are emphasized. Experiences are provided students in the conduct of public health surveys to analyze the nature and extent of health problems confronting communities, classes and groups.

CURRICULUM FOR BACHELOR OF SCIENCE 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 151	3		
Art 133		3	
Music 131			3
HPER Orientation 111, 112, 113	2	2	2
Phy. Educ. 102-3	1	1	2
Required Phy. Education (Wom.) 11, 12, 13	1 1/3	1 1/3	1 1/3
Required Phy. Education (Men) 11, 12, 13	1/3	1/3	1/3
Air Science: AFROTC 151, 152, 153	1	1	1
	17 1/3	17 1/3	18 1/3

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English Lit. 211, 212, 213	3	3	3
Edu. 202	3		
Psychology 242, 243		3	3
Mathematics 200	3		
Nutrition 212		3	
Phy. Educ. 243			3
Health 211, 212, 213	3	3	3
Phy. Educ. 202	1	1	1
Required Phy. Educ. (Women)	1 1/3	1 1/3	1 1/3
Required Phy. P. E. Educ. (Men)	2 1/3	1/3	1/3
Air Science: AFROTC 251, 252, 253	1	1	1
Soc. Studies 114		3	
Minor or Elective.			3
	16⅓	17⅓	17⅓

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Zoology (Human Physiology) 202, 203		4	4
Edu. 301, 372	3	3	
Psych. 312	3		
Phy. Educ. 311, 312, 333	3	3	3
HPE 471			3
Health 301, 302, 304	3	3	3
Phy. Educ. (Fund and Tech)	1	2	2
Minor or Elec.	3	3	3
	16	18	18

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Educ. 472, 462	6	3	
Psychology 463			3
HPE 401, 402, 403	3	3	3
Phy. Educ. 421, 422, 423 or 434.			2
Phy. Educ. 450		3	
Phy. Educ. (Fund) and Tech.		2	2
Minor or Elec.	6	3	6
	15	14	16

SUMMARY OF REQUIREMENTS FOR HEALTH AND PHYSICAL EDUCATION MAJORS

Area	*Quarter Hours*
General Education	61
Core Professional	36
Major: Health and Physical Education	63*
Zoology 202, 203	8
Minor and/or Electives	24
Total	192

*Of these sixty-three (63) quarter hours, thirty-six (36) must be in courses numbered in 300 and 400 series.

		Quarter Hours
Freshman:	Physical Education 103*	2
Sophomore:	Health 211, 212, 213 Physical Education 202*, 221*, 243	15
Junior:	Health 301, 302, 304 Physical Education 311, 312, 331, 333, 381, 383	27
Senior:	Health and Physical Education 401, 402, 403 Physical Education 413, 421 or 422/423/434, 450, 471	22

A minimum of twelve (12) quarter hours is required in fundamentals and techniques from the three groups as outlined below in addition to PE 103 Conditioning, Apparatus, Stunts and Tumbling and PE 202 Intermediate Swimming.

GROUP I INDIVIDUAL AND DUAL SPORTS (any four) 4

231	Archery	236	Golf
233	Tennis	235	Badminton
234	Track and Field	237	Handball and Shuffleboard

GROUP II TEAM SPORTS (any four) 4

101M	Football	203	Volleyball and Deck Tennis
101W	Field Hockey	212	Basketball
201	Soccer and Speedball	213	Softball

GROUP III RHYTHMS 4

211	Modern Dance	223	Modern Dance Composition
*221	Folk Rhythms	240	Social Dancing
222	Tap Rhythms		

*Specifically required.

Courses Required for Physical Education as a Minor: Thirty-six (36) quarter hours.

Course		*Credit*
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 or 422	Athletic Coaching and Officiating—Football Athletic Coaching and Officiating—Basketball	2 3
Physical Education 471	Methods in Physical Education	3
Health 302	First Aid and Care of Injuries	3
Health and Physical Educ. 402	Organization and Administration of Health and Physical Education	3
Health and Physical Educ. 403	Individual Physical Education for HMandicapped 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	241	Fundamentals and Techniques—Boxing	
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*
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 and Care of Injuries	3
Health	304	Family Health	3
			18
Physical Education	103	Conditioning, Apparatus, Stunts and Tumbling	2
Physical Education	202	Intermediate Swimming	1
Physical Education	243	Play and Games for Elementary Schools	3
Health and Physical Educ.	403	Individual Physical Education for Handicapped Students	3
Electives from Rhythmic Activities one course:			
Physical Education	221	Folk Rhythms or	
Physical Education	222	Tap Rhythms	2
Electives from Team Sports four courses:			4
Physical Education	101M	Fundamentals and Techniques—Football or	
	101W	Fundamentals and Techniques—Field Hockey	
Physical Education	201	Fundamentals and Techniques—Soccer and Speedball	
Physical Education	203	Fundamentals and Techniques—Volleyball and Deck Tennis	
Physical Education	212	Fundamentals and Techniques—Basketball	
Physical Education	213	Fundamentals and Techniques—Softball	
Electives from Individual and Dual Sports three courses:			3
Physical Education	231	Fundamentals and Techniques—Archery	
Physical Education	233	Fundamentals and Techniques—Tennis	
Physical Education	234	Fundamentals and Techniques—Track and Field	
Physical Education	235	Fundamentals and Techniques—Badminton	
Physical Education	236	Fundamentals and Techniques—Golf	
Physical Education	237	Fundamentals and Techniques—Handball and Shuffleboard	
			18
Total			**36**

Undergraduate

Courses numbered in the 100's and 200's include theoretical and practical work and are designed for majors in health education, physical education and in recreation only.

101M. *Fundamentals and Techniques in Football.* (⅓) Fall Quarter. Required of men major.

101W. *Fundamentals and Techniques in Field Hockey.* (1 1⅓) Fall Quarter. An elective.

102. *Fundamentals and Techniques in Swimming.* (1/3 for men) (1 1/3 for women). Winter Quarter. Required of majors.

103. *Conditioning, Apparatus Work, Stunts and Tumbling.* (2) Spring Quarter. Required of majors.

112. *Orientation in Physical Education.* (2) Winter Quarter. General introduction to physical education including a brief history, modern trends, professional organizations, and opportunities in the field. Acquaints the freshman student with the nature and content of course offerings of the department. Required of majors in health education, physical education, and recreation.

201. *Fundamentals and Techniques in Soccer and Speedball.* (1/3 for men) (1⅓ for Women). Fall Quarter. An elective for majors.

202. *Intermediate Swimming.* Formerly P.E. 322. (1/3 for men) (1 1/3 for women). Winter and Summer Quarters. 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.* (1/3 for men) (1⅓ for women). Spring Quarter. An elective for majors.

211. *Fundamentals and Techniques in Modern Dance.* (1) Fall Quarter. An elective of majors.

212. *Fundamentals and Techniques in Basketball.* (1) Fall Quarter. An elective for majors.

213. *Fundamentals and Techniques in Softball.* (1) Spring Quarter. An elective for majors.

221. *Folk Rhythms.* Formerly P.E. 211. Fall and Summer Quarters. Dances that are peculiar to foreign countries such as Hungary, Germany, Sweden, Russia, and England are taught with emphasis upon the relationship of movements to custom and habits of each particular country. Opportunity for participating in mixers, rounds, and square dances with stress on the western cowboy type suitable for use at the upper elementary and secondary school levels. Required of majors.

222. *Tap Rhythms.* Formerly P.E. 212. (2) Winter Quarter. Materials included which serve as a functional basis both for in-school and out-of-school activities. Modern music used to develop routine in slow and fast fox trot and waltz-time. An elective for majors in physical education.

223. *Modern Dance Composition.* Formerly P.E. 213. (2) Spring Quarter. Experimentation in applying the basic laws of movement to contemporary dance and fundamental principles governing the development of dance movement into an art form for high school and college levels. An elective for majors. Prerequisite: P.E. 211.

231. *Fundamentals and Techniques in Archery.* (1) Fall Quarter. An elective for majors in physical education.

232. *Advanced Swimming and Life Saving.* Formerly P.E. 323. (1) Winter and Summer Quarters. A professional course for training 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) Spring Quarter. An elective for majors.

234. *Fundamentals and Techniques in Track and Field.* (1) Fall Quarter. An elective for majors.

235. *Fundamentals and Techniques in Badminton.* (1) Winter Quarter. An elective for majors.

236. *Fundamentals and Techniques in Golf.* (1) Spring Quarter. An elective for majors.

237. *Fundamentals and Techniques in Handball and Shuffleboard.* (1) Fall Quarter. An elective for majors.

239. *Fundamentals and Techniques in Bowling.* (1) Winter Quarter. An elective for majors.

240. *Social Dancing.* (1) Spring Quarter. An elective for majors.

241. *Fundamentals and Techniques in Boxing.* (1) An elective for men majors.

242. *Fundamentals and Techniques in Wrestling.* (1) An elective for men majors.

243. *Play and Games for Elementary Schools.* Formerly P.E. 401. (3) Fall, Spring, Summer Quarters. 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) Fall Quarter. Elementary course in gross anatomy designed to offer the student in health education, physical education, and recreation an opportunity to acquire a general knowledge of the gross structure of the human body. Required of all majors.

312. *Kinesiology.* Formerly P.E. 412. (3) Winter Quarter. A study of the bones, joints, ligaments, and muscles and their functions in the various movements involved in games, sports, and other physical education activities. Stresses ways of incorporating health education and physical education. Required of majors in physical education. Prerequisite: P.E. 311.

331. *Tests and Measurements in Physical Education.* (3) Fall Quarter. Acquaints the student with tests available in physical education. Deals with the theory, application, and administration of tests for use in evaluating the content and methods, measuring students' achievements, and grading. An elective.

*333. *Principles and Philosophy.* (3) Spring and Summer Quarters. 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.

381. *Organization and Administration of Intramural Activities.* (3) Fall Quarter. Lectures, discussions, and projects dealing with finance, equipment, types of tournaments, schedules, policies, and officiating. An elective.

383. *History of Physical Education.* (3) Spring Quarter. 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.

401. *Seminar in Health and Physical Education.* (3) Fall Quarter. Designed to acquaint the prospective teacher with changing trends in health education and in physical education as related to present educational practices. Conducted on a problem—project basis. Required of all majors in health and physical education and minors in health education or physical education. Prerequisites: Twenty-one quarter hours in health education and physical education courses.

402. *Organization and Administration of Health and Physical Education.* (3) Winter Quarter. Consider the philosophies, policies, procedures, and financing of school health services and of the physical education program. Effective approaches are discussed for setting up a program and initiating it in relation to the entire curriculum of the school and community needs. Includes utilization and care of facilities and equipment, scheduling of classes, teaching loads, classification of pupils, selection of content, record keeping, and evaluation. Required of all majors in health and physical education and minors in health education or physical education. Prerequisites: Twenty-one quarter hours in health education and physical education courses.

403. *Individual Physical Education for Handicapped Students.* (3) Spring Quarter. A study of the types of cases requiring modified physical education activity with instruction in specific activities for each type. Class work organized on a laboratory basis to provide practiced experience in conducting the program. Required of majors in health and physical education and minors in health education or physical education. Prerequisite: Health Education 302 and twenty-one quarter hours in health and physical education courses.

*413. *Program Planning in Physical Education.* (3) Spring and Summer Quarters. Acquaints the student with the state and recommended programs in physical education. Stresses ways of incorporating physical education into the total school program. Emphasis is placed on plans and procedures for adapting programs to local conditions. An elective for majors and minors in health and physical education. Prerequisites: P.E. 243, 333, and 471.

421. *Athletic Coaching and Officiating in Football.* (2) Fall Quarter. Examinations and explanations of rules, methods of organizing, practice and handling of teams, strategy, team offense and defense, and various fundamentals and techniques in football. Required of men majors in health and physical education. Prerequisite: Approval of the instructor.

422M. *Athletic Coaching and Officiating in Basketball.* (2) Winter Quarter. Fundamentals of basketball from a coach's and an official's point of view. Required of men majors in health and physical education. Prequisite: Approval of the instructor.

422W. *Athletic Coaching and Officiating in Basketball and Volleyball.* (2) Winter Quarter. Fundamentals of basketball and volleyball from a coach's and an official's point of view. An opportunity given for the student to qualify as a local or national official in basketball and/or volleyball. Required of women majors in physical education. Prerequisite: Approval of the instructor.

423. *Athletic Coaching and Officiating in Track and Field.* (2) Spring Quarter. Fundamentals of track and field are studied. Lectures, discussions, and practice of the form and conditioning included. An elective for men majors. Prerequisite: Approval of the instructor.

434. *Festivals and Demonstrations.* (2) Spring Quarter. Organized to acquaint the student with materials, methods, and techniques of presenting pageants, festivals, exhibitions, athletic events, special celebrations, and events of a similar nature. Includes a study and discussion of activities calling for a large number of participants and methods of combining a number of areas as dancing, dramatics, crafts, and athletics. An elective for majors. Credit for this course satisfies two of the four hours required in athletic coaching.

450. *Senior Project.* (3) Designed to give the student an opportunity to work upon and develop a problem of interest to him in the area of physical education. A student may follow one of two plans: namely, (1) prepare a junior thesis utilizing the techniques of professional writing which adhere to an acceptable form or (2) present a laboratory problem which may be a dance recital, intramural or recreational program, pageant, or play day. If plan (2) is followed the student must write a synopsis of the project accompanied by photographs or drawing and diagrams. Required of prospective graduating seniors. A senior should enroll in this course at least one quarter prior to the expected date of graduation. Offered each quarter.

*471. *Materials and Methods in Physical Education.* (3) (Formerly 303) Fall and Spring Quarters. Special attention to content of the program methods, procedures, techniques, and devices relative to individual and dual sports, team games, rhythms, self-testing activities, and related events for boys and girls at the secondary school level. Required of majors and minors in physical education. Prerequisites: P.E. 221, 222, and 243.

GRADUATE COURSES IN PHYSICAL EDUCATION

501. *Seminar in Administration.* (3) Consideration given to the operation of physical education activities in the public schools from the standpoint of administration. Includes a study of objectives, principles, and philosophy of physical education in secondary schools. Emphasis placed on a knowledge and understanding of the methods and procedures for selecting and embodying physical education activities in a program. Ample consideration given to the modern trends in the area of administration.

503. *Playground and Camp Supervision.* (3) Includes the theories of play, the place of play in education, and the organization and supervision of playground and camp activities. Special attention given to recreational activities for various age groups in accordance with their physical, mental, and social characteristics. Selecting, planning, and equipping the playground and camp site emphasized. Consideration also given to program planning for playgrounds and camping in nature study, first aid, camp cooking, water safety, and recreational activities.

511. *Methods of Instruction and Supervision in Physical Education.* (3) Practical suggestions for teaching play actiivties, fundamental skills, and athletic games. Special attention given in in-service training of personnel; program evaluation and improvement; adequacy of facilities and equipment; association with principals and administrators; and community relationships.

512. *Thesis Seminar.* (3) A critical discussion of related literature and research studies. Credit is given upon completion and acceptance of the thesis.

513. *Tests and Measurements.* (3) Designed to acquaint the prospective teacher with the important part that testing plays in the field of physical education. Covers a study in anthropometric measurements, strength indices, cardiac functional tests, and statistical methods used to determine motor ability achievements in physical education activities.

521. *Current Problems in Physical Education.* (3) Designed to help teachers, supervisors, and administrators to solve problems of physical education facing America today in the light of social and economic reconstruction. A study of philosophies and policies in the classification of students, the staff, teaching load, marking (grading), time schedule, graduation of activities, and finance.

523. *Community Recreation.* (3) Deals with the nature, significance, and extent of recreation. A study of city, county, state, and national organizations along with principles and techniques for organizing and promoting leisure time activities for home, school, and community. Consideration of the essential elements in community recreation program-leadership, areas and facilities, and distinct program features. Various methods of recruiting and training volunteer workers discussed to the extent that the student is able to adapt the most suitable ones to his particular needs. Opportunity given to students to organize and lead in recreational activities.

Courses in Recreation

Undergraduate

113. *Orientation in Recreation.* (2) Spring Quarter. An introductory survey of the field of recreation. Aims to give the student general information about the field of recreation and to emphasize the duties and responsibilitis of all recreation personnel. Also attempts to acquaint the student with knowledge, skills, and techniques needed by recreation personnel, and the job oportunities for those successfuly completing the recreation curriculum. Required of all majors in health and physical education.

253. *Principles of Recreation.* (3) Spring Quarter. 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. Required of majors in recreation.

353. *Playground Management and Supervision.* (3) Proposes 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. Required of majors in recreation.

Phy. Educ. 311. *General Anatomy.* (3) Fall Quarter. Elementary course in gross anatomy designed to offer the student in Health Education, Physical Education, and Recreation an opportunity to acquire a general knowledge of the gross structure of the human body. Required of majors in recreation.

410. *Seminar in Recreation.* (3) Aims to give the student assistance in integrating and coordinating the various curriculum contributions made throughout his professional study. Further presents and discusses problems which arise from his theoretical and practical work in the field of recreation.

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 met 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. Required of majors in recreation.

414. *Organization and Administration of Camping and Scouting.* (3) 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 outdor activities. Required of majors in recreation.

450. *Senior Project.* (3)

GRADUATE

503. *Playground and Camp Supervision.* (3) See Physical Education 503.

523. *Community Recreation.* (3) See Physical Education 523.

DEPARTMENT OF PSYCHOLOGY

M. I. CLAIBORNE, *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 desire 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 course 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.

Courses in other departments required for a major in psychology are: Biology 101-2-3, Zoology 311 (Heredity and Genetics), Mathematics 131-32-33, Sociology 211-12-13, two years French or German, Art Appreciation, and Music Appreciation.

Recommended electives: Human physiology, physics, philosophy and advanced courses in the areas of sociology, and mathematics.

Graduation requirements for Bachelor of Arts degree in Psychology: complete the basic Liberal Arts Core, fulfill the general college requirements for Bachelor of Arts degree (two years college foreign languag, one year laboratory science, one year college mathematics), earn a minimum of 195 hours credit, 72 of which must be in 300 and 400 level courses including the 36 hours of advanced psychology required for major.

Psychology majors preparing for a public school teaching career, or who are majoring in psychology as a background for social work or personnelP work may waive the two-year foreign language requirement and earn the Bachelor of Science degree.

Psychology majors who desire to earn a teacher's certificate should take the General Education Core (instead of the Liberal Arts Core), elect as a minor the subject field for which they wish to be certified, and choose their electives from that area and from the area of secondary education. (See Secondary Education, page——, for certification requirements).

Graduate Program in Psychology

The psychology department offers graduate programs in psychology leading to the master's degree in:

1. Educational Psychology—designed for students preparing for public school work or college teaching.
2. Educational Guidance—designed for students preparing for personnel work and guidance in public schools or colleges.
3. General Psychology—designed for students preparing for a professional career in Psychology.

A description of graduate course offerings follows under Description of Courses. See Graduate Bulletin for detailed statement of requirements for admission to graduate study in psychology.

Psycho-Educational Clinic

Children's Level: The clinic offers a children's service to public schools that consists of mental testing and diagnosis of learning disabilities, with recommendations for treatment.

College Level: The clinic offers the following services to college students: educational guidance based on mental testing, aptitude testing, and interest and

personality inventories; and diagnosis of academic failure followed by counseling relative to removing the causes of failure.

Reading Clinic: The reading clinic is designed to diagnose and offer training leading to the correction of reading disabilities on both the child and the adult level.

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

CURRICULUM FOR BACHELOR OF ARTS DEGREE WITH A MAJOR IN PSYCHOLOGY

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 101-2-3	3	3	3
Biology 101-2-3	4	4	4
French or German	3	3	3
History 121-22-23	3	3	3
Mathematics 131-32-33	3	3	3
Phy. Ed. 11-12-13. (Women)	1 1/3	1 1/3	1 1/3
Phy. Ed. 11-12-13. (Men)	1/3	1/3	1/3
Air Science	1	1	1
Orientation			
	17 1/3	17 1/3	17 1/3

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Psychology 221-22-23	3	3	3
Sociology 211-12-13	3	3	3
French or German	3	3	3
Biology 311	4		
Psych. 311, 242, 243	3	3	3
Music and Art Appreciation		3	3
Phy. Ed. 20's to 50's (Women)	1 1/3	1 1/3	1 1/3
Phy. Ed. 20's to 50's (Men)	1/3	1/3	1/3
Air Science 251-52-53	1	1	1
	17 1/3	16 1/3	16 1/3

Junior Year	*Quarter Hour Credit*		
Name of Course	*I*	*II*	*III*
Psychology 321-22-23	3	3	3
Psychology 341-351-352	3	3	3
Psychology 411-12-13	3	3	3
Electives	9	9	9
	18	18	18

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Psychology 431-32	3	3	
Psychology 481			3
Electives	12	12	12
	15	15	15

Psychology Courses Recommended for Education Students

Psychology courses included in the "Core Program of Professional Education," and required for teacher certification in the State of Tennessee:

Educational Psychology I, Human Development, 242
Educational Psychology II, Psychology of Learning, 243
Measurement and Evaluation, 312
Guidance for Classroom Teachers, 463

Psychology courses which may be used for education credit, but which are not included in the Core Program of Professional Education, and are not required for certification in Tennessee. (These courses may *not* be substituted for Core Professional courses for certification in Tennessee.)

General Psychology, 221-22
Child Psychology, 253
Adolescent Psychology, 263
Mental Hygiene, 323

Sequence of Courses

Non-Credit Courses

Orientation, 100 (Majors only)
Remedial Reading, 101
How to Study, 102

Undergraduate Courses

General Psychology, 221-22-23
Educational Psychology I, Human Development, 242
Educational Psychology II, Psychology of Learning, 243
Child Psychology, 253
Adolescent Psychology, 263
Elementary Statistics, 311
Measurement and Evaluation, 312
Abnormal Psychology, 321-22
Mental Hygiene, 323
Social Psychology, 341
Genetic Psychology, 351-52
Machine Scoring of Tests, 400
Experimental Psychology, 411-12-13
Physiological Psychology, 431-32
Senior Project, 450
Differential Psychology, 461
Introduction to Psychological Testing, 462
Guidance for Classroom Teachers, 463
History and Schools of Psychology, 481

Graduate Courses

Advanced Statistics. 502.
Advanced General Psychology. 505.
Advanced Experimental Psychology. 506-07.
Research in Psychology. 511.
Psychology Thesis Seminar. 512.
Advanced Mental Hygiene. 523.
Theories and Measurement of Personality. 525.
(Psychometrics, 531)
Introduction to Guidance. 532.
Techniques of Guidance. 533.
Student Personnel and Coordination of Personnel Services. 534.
Interviewing and Counseling. 535.
Individual Diagnosis. 536.
Vocational Guidance and Placement. 537.
Occupational Information, 538.
Advanced Social Psychology. 541.
Advanced Educational Psychology. 543.
Psychology of Learning. 545.
Emotional, Social, and Mental Growth. 551.
Diagnosis and Remedial Techniques. 561.
Diagnosis and Correction of Reading Disability. 563.
Clinical Testing. 571-72.
Clinical Psychology. 573-74.
Projective Techniques. 575.
Practicum for School Psychologist, 585-86.

Description of Courses

100. *Orientation for Psychology Majors.* (0) General college orientation and introduction to the area of psychology as a profession. Student given the opportunity to discover his own abilities, aptitudes, interests, reading level, and study habits. Non-credit course.

101. *Remedial Reading.* (0) Designed to give the student an opportunity to diagnose and correct reading deficiency. Special attention to increasing speed and comprehension. Non-credit course.

102. *How to Study.* (0) Offers training in developing desirable study habits. Non-credit course.

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.

253. *Child Psychology.* (3) Emphasis on the physical, emotional, social, and mental growth of the child from infancy to puberty; attention given to the behavior characteristics of children at various levels of growth, and to psychological factors which influence behavior. (Students may not receive credit for both Psy. 242 and Psych. 253.)

263. *Adolescent Psychology.* (3) Emphasis on the development of and the problems of adolescents in the home, school, and community environment. Attention given to the guidance of adolescents. (Students may not receive credit for both Psych. 242 and Psych. 263.)

311. *Elementary Statistics.* (3) Offers training in tabulating and processing scores and other data; covers measures of central tendency, measures of varibility, the normal curve, and simple correlation.

312. *Measurement and Evaluation in Public Schools.* (3) Offers training in administering, scoring, processing, and using the results of standardized tests and other measures of progress in public schools; also training is offered in the construction of objective tests. Prerequisite Psych. 242 and 243. Laboratory fee, $1.00. Required in the Professional Education Core.

321-22. *Abnormal Psychology.* (6) Lectures, discussions, and review of case studies concerning the nature, causes, and treatment of pathological behavior. Observation trips shall be made to institutions for the care and treatment of mental patients.

323. *Mental Hygiene.* (3) Primarily concerned with examining and interpreting procedures for protecting and preserving the mental health of the individual through wholesome adjustment to the environment; attention is given to the practice of mental hygiene in the classroom.

341. *Social Psychology.* (3) Lectures and discussions of social behavior and application of principles of psychology to social behavior.

*351-52. *Genetic Psychology.* (6) Concerned with the origin and development of behavior in the individual, giving special attention to differentiating between the effect of heredity, maturation, and learning on the development of behavior. Behavior development is tracd both phylognetically and ontogenetically.

401. *Machine Scoring of Tests.* (1) Offers training in scoring tests on an I.B.M. machine. One hour practice per day required. Prerequisite: course in testing, junior classification, and approval of instructor.

411-12-13. *Experimental Psychology.* (9) Offers training in applying the scientific procedure of experimentation to the study of psychological phenomena in the various fields of psychology.

*431-32. *Physiological Psychology.* (6) A study of the sensory, motor, and adjustor (brain) mechanisms as they relate to behavior.

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; offers 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.

Graduate Courses

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.

505. *Advanced General Psychology.* (3) Basic course required for a major in general psychology. Deals with the history and present status of psychology including an examination of an 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 teachnical consideration of the principles of mental

*Approved for graduate credit.
*May be taken by graduate students for graduate credit.

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 meausres of intelligence, achievement, aptitude and personality.

532. *Introduction to Guidance.* (3) The development and aspects of guidance in secondary schools and colleges; the place in guidance of occupational information, exploratory courses, tests, records, group and individual counseling, and placement; duties of guidance functionaries; types of guidance organizations.

533. *Techniques of Guidance.* (3) Critically examines the techniques used in guidance, and offers the student an opportunity to acquire skill in using the techniques.

534. *Student Personnel and Coordination of Personnel Services.* (3) Critically examines student personnel problems and services in both the public school and the college, and offers training in 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 Diagnosis.* (3) Designed to give training and practice in diagnosing the individual pupil to discover the eitology of his problem or difficulty, and to recommend or effect a solution. Attention is given to behavior, personality, and social problems, as well as to learning difficulties.

537. *Vocational Guidance and Placement.* (3) Designed to give training and practice in the application of guidance and counseling techniques to vocational problems, including placement.

538. *Occupational Information.* (3) Designed to give information leading to a knowledge of occupations and occupational trends, as well as competence in evaluating and handling occupational information.

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

543. *Advanced Educational Psychology.* (3) A critical examination of psychological concepts basic to learning in the school situation. Topics critically examined: growth and development, motivation, and theories of learning, with emphasis on application to the classroom situation. Attention is given to experimental investigation in educational psychology. (Core course, required of all students majoring in education.)

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

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

561. *Diagnosis and Remedial Techniques.* (3) Offers training in the selection, use, and interpretation of diagnostic tests and other techniques for discovering the causes of learning disabilities in the regular school subjects (except reading) and methods for correcting the learning difficulties.

563. *Diagnosis of Reading Disability and Remedial Reading.* (3) Offers training and practice in techniques the regular classroom teacher may use to discover the retarded reader, to analyze the nature and cause of the reading difficulty, and correct the difficulty. The students will be given an opportunity to work with a retarded reader.

571-72. *Clinical Testing.* (6) Offers training and practice in administering, scoring, and interpreting tests used for clinical purposes, with emphasis on the use of individual verbal, and non-verbal mental tests, and measures of personality. The student is required to acquire proficiency in administering, scoring, and interpreting the Stanford Binet Test and the WISC Test.

573-74. *Clinical Psychology.* (6) Applies clinical procedures to the diagnosis and treatment of behavior problems, with emphasis on the behavior problems of children. Prerequisite: An undergraduate major or minor in psychology.

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

585-86. *Practicum for School Psychologists.* (3 or 6 Hrs) Practice in the work of a school psychologist in a public school under the direction of a school psychologist. Open only to students who have completed the course of study for School Psychologists. Three hours credit for sixty hours practice, including the time spent in scoring and interpreting tests.

DIVISION OF BUSINESS

WILLIAM L. CRUMP, *Director*

Objectives

The primary objectives of the Division of Business are: (A) To provide training in the methods, techniques, and principles underlying modern business as a foundation for business careers; (B) 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; (C) To provide training in those phases of business that concern every member of organized society; and (D) to train students for the teaching of Business subjects in secondary schools.

Organization

The Division of Business is organized into the departments of Business Administration and Business Education. The Department of Business Administration offers curricula leading to the bachelor's degree with a major in accounting, general business administration, and economics. The Department of Business Education offers curricula leading to the bachelor's degree in business teacher education and office administration. Special curricula may be followed by students who do not wish to obtain college degrees.

The Department of Business Administration sponsors Future Business Leaders of America—an organization open to all students of the Division. Students majoring in business education may become members of Pi Omega Pi, a national business teachers fraternity, and the Flash Writers Transcription Club.

DEPARTMENT OF BUSINESS ADMINISTRATION

WILLIAM L. CRUMP, *Head*

The curricula of the department are offered to those students who are planning for careers in accounting, insurance, finance, marketing, real estate, salesmanship, and other business pursuits. The courses are designed to prepare students for leadership in our complex economy, as well as for graduate study and professional training in the area of their choice.

Requirements for the Degree

The department offers the Bachelor of Arts, the Bachelor of Science, and the Master of Science degrees in business administration. The bachelor's degree is awarded for the attainment of knowledge and skills in the fields of business and related fields demonstrated to the satisfaction of the university.

A minimum of three full quarters of residence must be completed in the department.

A departmental program of study must be followed. The nature and extent of this program, in general, depends upon the student's previous training and experience. Normally, one-third is in the field of concentration, one-third in related fields, and one-third general education and electives.

The student must complete at least forty-eight quarter hours in the field of Business Administration, with a major emphasis in Accounting, Finance, Insurance, or Marketing, twenty-seven hours of which must be completed in courses on the 300 and 400 level. 197 hours are required for graduation.

A total of 197 hours are required for graduation, of which 72 hours must be completed in the 300 and 400 level courses. A total of 48 hours is required for a major in Business Administration, of which 24 hours must be completed in the 300 and 400 level courses. A total of 36 hours is required for a major in Accounting and in Economics, of which 18 hours must be completed in the 300 and 400 level courses.

GENERAL CURRICULUM FOR FRESHMEN AND SOPHOMORES BUSINESS ADMINISTRATION STUDENTS

Bachelor of Science Degree

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 101-2-3	3	3	3
Science 121-22-23	4	4	4
History 121-22-23 or Amer. Hist. 201-2-3	3	3	3
Math. 171-72-73	3	3	3
Bus. Orient 101-2-3	1	1	1
Phys Educ (Men)	⅓	⅓	⅓
Phy. Educ (Women)	1⅓	1⅓	1⅓
Air Science 151-2-3	1	1	1
	15⅓	15⅓	15⅓

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 211-12-13	3	3	3
Economics 211-12-13	3	3	3
Accounting 211-12-13	3	3	3
OA Typing 211-12-13	3	3	3
Eco Geog 271-72-73	3	3	3
Phys Educ (Men)	⅓	⅓	⅓
Phy. Educ (Women)	1⅓	1⅓	1⅓
Air Science 251-2-3	1	1	1
	16⅓	16⅓	16⅓

Bachelor of Arts Degree

Name of Course *Freshman Year*	*Quarter Hours Credit* *I*	*II*	*III*
English 101-2-3	3	3	3
Science (Biol., Chem., of Phys.)	4	4	4
Math. 131-32-33	3	3	3
History 121-22-23 or History 201-2-3	3	3	3
Foreign Language*	3	3	3
Phys Educ (Men)	⅓	⅓	⅓
Phy. Educ (Women)	1⅓	1⅓	1⅓
Air Science 151-2-3	1	1	1
	17⅓	17⅓	17⅓

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 211-12-12	3	3	3
Economics 211-12-13	3	3	3
Accounting 211-12-13	3	3	3
Polit. Sci. 221-22-23 or Sociology 211-12-13	3	3	3
Foreign Language*	3	3	3
Phys Educ (Men)	⅓	⅓	⅓
Phy. Educ (Women)	1⅓	1⅓	1⅓
Air Science 25-2-3	1	1	1
	16⅓	16⅓	16⅓

CURRICULUM FOR MAJORS IN BUSINESS ADMINISTRATION

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Accounting 311-12-13	3	3	3
Psychology 221-22	3	3	
Business Law 311-12-13	3	3	3
Bus. English 321			3
Business Org. & Management 331-32	3	3	
Polit. Sci. 221-22-23 or Sociology 211-12-13	3	3	3
Marketing 311-12	3	3	
Electives			6
	18	18	18

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Statistics 311-21-22	3	3	3
Finance 312-13		3	3
Personnel Adm. 323-24	3	3	
Insurance 325-26	3	3	
Real Estate 422			3
Senior Project 450	3		
Electives	6	3	6
	18	15	15

CURRICULUM FOR MAJORS IN ACCOUNTING

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Polit Sci. 221-22-23 or Sociology 211-12-13	3	3	3
Psychology 221-22	3	3	
Business Law 311-12-13	3	3	3
Accounting 311-12-13	3	3	3
Business English 321			3
Business Org. 331-32	3	3	
Marketing 311-12	3	3	
Accounting 321			3
Elective			3
	18	18	18

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Statistics 311-21-22	3	3	3
Accounting 411-12	3	3	
Accounting 421-22-23	3	3	3
Insurance 325-26		3	3
Real Estate 422			3
Accounting 461			3
Personnel Adm. 423-24	3	3	
Senior Project 450	3		
Electives	3		
	18	15	15

CURRICULUM IN ECONOMICS

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Economics 311-12-13	3	3	3
Ag. Economics 201			3
Sociology 301		3	
Sociology 312			3
Statistics 311-21-22	3	3	3
Economics 431	3		
Bus. Law 311-12-13	3	3	3
Electives	6	6	3
	18	18	18

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Economics 432-33	3	3	
Polit. Sci. 441-42-43	3	3	3
Senior Project 450	3		
Electives	9	9	12
	18	15	15

ACCOUNTING

211-12-13. *Elements of Accounting.* (9) A basic course in bookkeeping, accounting theory and practice. A prerequisite to all other courses in accounting. Two one-hour laboratory periods.

311-12-13. *Intermediate Accounting.* (9) Theory and practice relating to the theory of the various balance sheet accounts, working papers, and statements. Prerequisite: Accounting 213. Two one-hour laboratory periods.

321. *Introductory Cost Accounting.* (3) A study of the principles of manufacturing and distribution cost accounting. Material, labor, and overhead costs in job order and process cost accounting; determination analysis of costs of distribution; and related problems treated. Prerequisite: Accounting 312.

400. *Advanced Accounting Problems.* (3) Theory and problems in advanced topics, including partnership problems, insolvency, estates and trusts and consolidated statements. Prerequisite: Accounting 312.

402. *Machine Accounting.* (1) Acquaints the student with the fundamental principles of machine accounting. Provides automatic and mechanically-controlled features which eliminate certain manual operations and insure greater accuracy.

411-12. *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.

421-22. *Advanced Cost Accounting.* (6) Devoted to estimating cost systems predetermined costs through ideal and basic standards, flexible budgets, and the analysis and treatment of cost variances for managerial purposes. Prerequisites: Accounting 321.

423. *Auditing Procedures.* (3) Principles of auditing which include a critical examination of financial statements. The text materials are amplified by special problems. Prerequisite: Only advanced students in Accounting.

461. *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: Accounting 323.

462. *Comptrollership.* (3) A study of the fiscal functions assigned the comptroller in a large enterprise in connection with construction, control, and intrepretation of accounts for internal use.

INSURANCE

325-6. *Principles of Insurance.* (6) Designed (1) to precede advanced work in insurance and (2) to acquaint the non-specialist with the economic and social services of the institution of insurance.

425-26.. *Life Insurance.* (6) A consideration of various types of life insurance policies and companies; personal and business uses of insurances; rates reserve, surrender value. Prerequisite: Insurance 325-6 or consent of the professor.

MARKETING

Nine quarter hours in general economics are prerequisite to all courses in marketing.

311-12. *Principles of Marketing.* (6) A general survey of the marketing structure as it exists and functions. Problems involving marketing procedures, policies, and techniques are considered.

313. *Salesmanship.* (3) A study of the basic principles underlying the sales process and their application to the problems of salesmen. Prerequisites: Psychology 221-22 or being registered therein.

321. *Principles of Retailing.* (3) A basic survey course for students interested in retailing. Special consideration given to store organization, operation, and current distribution problems.

411-12. *Advertising Principles.* (6) A study of the economics of advertising, the use of research in advertising, analysis of current advertising policy, and methods and procedures in selecting appeals and media, writing copy, and constructing layouts. Prerequisites: Marketing 311-12.

BUSINESS LAW

311-12-13. *Business Law.* (9) Fundamental principles of law most frequently involved in business transactions, including contracts, sales, partnerships, master and servant, principal and agent, corporations, negotiable instruments, property, bailments, and common carriers, with the view of enabling businessmen to avoid litigation.

FINANCE

312-13. *Money and Banking.* (6) Objective—To develop a sound understanding of the role of banks in our economy. Specific emphasis on central bank functions such as: the control or reserves, the supervising of bank operations, controlling the supply of money, and carrying out the fiscal functions of the government. (Same as Economics 312-313.)

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 stocks, bonds, and other instruments of finance. The work of promotion, underwriting securities, internal financial management, reorganization and receivership treated.

420. *Corporation Finance.* (3) Corporate organization and control; corporation securities; the management of fixed capital, working capital and income; reserve, surplus, and undivided profits; investment banking and the securities market; failure and reorganization. Prerequisite: Finance 331-332.

STATISTICS

321. *Elementary Business Statistics.* (3) A study of statistical sources and collection of data, the presentation of data in tables, charts, and reports; the computation of ratios and percentages, averages, dispersion, and sampling errors. Prerequisite: Statistics 311.

322. *Business Statistics.* (3) Statistical theory and methods directly applicable to the solution of business and economic problems. Major topics: index numbers; analysis of time series; simple correlation. Prerequisite: Statistics 321.

PERSONNEL ADMINISTRATION

423-4. *Personnel Administration.* (6) An examination of the principle and methods of efficient labor management in the maintenance of harmonious relationships between management and employees, personnel organization and procedures, employee relationships.

Undergraduate

211-12-13. *Economic Principles.* (9) Principles and problems associated with the production, exchange, and the use of wealth.

224. *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.

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.

311. *Intermediate Economy Theory.* (3) A major treatment of the problems of price determination, demand, and costs, and price determination and output under a system of pure competition and monopolistic competition.

312-313. *Money and Banking.* (6) Aims to develop a sound understanding of the role of banks in our economy. Specific emphasis placed on central bank functions such as: the control of reserves, the supervising of banks operations, controlling the supply of money, and carrying out the fiscal functions of the government.

314. *Recent Labor Legislation.* (3) A study of labor legislation from the Sherman Anti-Trust Law to the present, with emphasis on the sociological aspects of the legislation.

431. *Economic Development of the United States.* (3) A study of the progress in agriculture, industry, communications, transportation, banking and trade, and the developments in governmental economic policy.

432. *State and Local Taxation.* (3) Survey course devoted to tax problems of state and local governments; special emphasis on state questions.

433. *Introduction to Government Finance.* (3) Survey of institutions and theories of government finance. Effects of public expenditures; functions of public revenues; forms of taxation; tax criteria; determination of tax policy; public borrowing; debt management; fiscal policy.

Graduate

Prerequisites for a major: Thirty-six quarter hours of courses, including Economics 211-12-13 or equivalent, Accounting 211-12-13 or equivalent and eighteen quarter hours in related business susjects on the 300 and 400 levels.

BA 511. *Research Methods and Techniques.* (3) A survey of research methods in the field of business, including a study of source materials and evolution of typical research studies. Required of all students working for the master's degree in the department of Business Administration.

BA 512. *Research and Thesis.* (3) A continuation of BA 511, and completion of thesis.

ACCOUNTING

451. *Governmental Accounting.* (3) Accounting theory and practice applicable to institutions, municipalities, states and local units of government organization, fiscal procedures, budgetary control, classification and use of funds, auditing, financial statements and reports.

467. *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.

513. *Advanced Cost Accounting.* (3) Recent development in cost procedures with special emphasis on cost analysis, standard and distribution costs, uniform cost system and trade association accounting.

514. *Analysis of Financial Statements.* (3) Analysis of corporation reports with particular reference to statement structure, meaning of accounts and ratios.

515. *Advanced Auditing.* (3) Audits of certain specialized businesses, special investigations, reorganization and refinancing problems. Securities and Exchange Commission and State Securities Commission requirements.

521. *Seminar in Accounting Theory.* (3) A study of accounting concepts in the light of present conditions. Bases underlying accounting policy types of economic society, statutory requirements, objectives of accounting, and unsettled problems. Prerequisite: Graduate standing.

522. *Seminar in Accounting Theory.* (3) A continuation of Accounting 521 with emphasis on current problems and contemporary development of accounting theory as exemplified by the accounting research bulletins of the American Institute of Accountants, recent monographs, statements of the American Accounting Association, and other current periodicals and materials. Prerequisite: Graduate standing.

523. *Seminar in Accounting Theory.* (3) A continuation of Accounting 522 with emphasis on individual projects assigned to each student. Such projects

assigned will be in fields wherein it is deemed to students' background needs the most strengthening. Projects may be assigned in any of the specialized fields of accounting. Prerequisite: Graduate standing.

533. *Preparation for Public Accountancy.* (3) The field of public accountancy state accountancy laws experience requirements examinations leading to the certificate preparation for examinations.

521-22-23. *Seminar in Finance.* (9) Comprehensive and intensive consideration of selected problems of current and permanent import in financial administration. Individual research, class reports and group discussion. Prerequisite: Graduate standing.

521-22-23. *Seminar in Marketing.* (9) Methods of research and critical analysis as applied to selected problems in the field of distribution. Prerequisite: Graduate standing.

ECONOMICS

513. *Development of Economic Thought.* (3) A survey of economic principles with emphasis on the development of theories of value and distribution. Special attention given to recent literature in the field.

514. *Economic Systems.* (3) Study and appraisal of the operation of, and theories underlying Capitalism, Fascism, Socialism, Communism, and other economic systems.

515. *Fiscal Policy.* (3) Government fiscal operations as they affect the magnitude of national income, distribution of income, allocation of resources, fiscal theories, fiscal practices and price stability; fiscal policy aspects of federal-state relations, interrelations of tax debt, and expenditures policies; political and administrative aspects.

516. *Economics of Competition.* (3) Survey of theories of competition and monopoly in various industries. Analysis of the factors contributing to the changed character of competition and the implications of growing imperfections in competition in relation to the problems of industrial self-regulation and of social control of industry.

521. *Modern Monetary Theory.* (3) Survey of the current concepts of money and its significance in economic affairs, with emphasis on the relation of money to prices, employment income, and business activity.

522. *Business Cycle Theory.* (3) Survey of business cycle theory and a critical examination of the various proposals for stabilizing and controlling cyclical fluctuation in business activity.

524. *International Trade and Finance.* (3) Theory of international balances, foreign-exchange theory, the international aspects of monetary and banking theory, and tariff theory.

534. *Federal Taxation.* (3) The structure and major policy issue of the federal tax system analyzed with reference primarily to economic, administrative, and political criteria, individual and corporate income taxes, excess profits tax, estate and gift taxes and excise and sales taxes.

541-2-3. *Economics.* (9) Seminar in Economic Theory. Critical discussion of debatable topics in the field of economic theory, particularly value, distribution, and price, together with reports on recent or contemporary theories and theorists. (Formerly 521-22-23).

DEPARTMENT OF BUSINESS EDUCATION

MARY CLAY PINKSTON, *Head*

The program of instruction in the Department of Business Education prepares teachers of business subjects and professional secretaries. Three degree programs of instruction are offered: program of work leading to the Bachelor of Science degree in Teacher Education; program of work leading to the Bachelor of Science degree in Office Administration (Secretarial Science), and program of work leading to the Master of Science degree in Teacher Education.

The Department is a member of the National Association of Business Teacher Education. 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 in the first two years of college work.

Requirements for Undergraduate Degree

A total of 197 hours is required for graduation, of which 70 hours must be completed in the 300 and 400 level courses. 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.

Students following the program of study for Office Administration will obtain a 45-quarter hour minor in English and 36-quarter hour minor in Business Administration. Students following the program of study for Business Education may obtain state certification in business subjects.

Certification in Tennessee

There are 197 quarter hours required for graduation in the Departments of Business Education and/or Administration. Students majoring in either department qualify for certification in one or several of the 13 subjects listed as business, provided that they follow the prescribed curriculum for General Education, Professional Education, and the specific hours required for each subject listed below.

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 and be endorsed in General Business.

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 the respective state Bulletins in the Departmental Office.

DESCRIPTION OF PLANS FOR SUPERVISED STUDENT TEACHING

In the senior year, students are required to register in BE 472, Student Teaching in Business Subjects for one quarter (9 hours credit) and OA 402-403, Office Internship (6 hours credit), totaling 15 quarter hours credit, the equivalent to a full load. Students must spend a total of 240 clock hours in actual office experience.

During this quarter, prospective business teachers spend six weeks at an off-campus student teaching center, and six weeks in one of the large cities offering opportunity for employment under our training organization.

Off-campus student teaching centers are selected on the following basis:

1. The High School must offer business subjects (at least two or more).
2. The High School must be accredited by the State.
3. There must be a full-time business education teacher with the following qualifications:
   a. At least two years teaching experience
   b. Holds the Bachelor's degree in Business Education
   c. Cooperative attitude with the training program

Offices selected for Office Internship are provided as follows:

1. Those offices requiring the services of a full-time secretary.
2. Offices furnishing minimum wages.
3. Offices with necessary and up-to-date equipment.
4. Offices with employers willing to cooperate with our training program.

Minor

The department of Business Education offers a minor to students in other departments requiring 36 quarter hours in Business Education and Office Administration courses. The minor may be in Secretarial Training or Teacher Education. Advisers in the Department should be consulted early in the four-year college period concerning a course of study.

Requirements for Graduate Degree

The graduate curriculum in Business Education, leading to the Master of Science degree, is designed to give instruction in the improvement of teaching in business subjects, to offer opportunity for guided research in experimental problems, and to develop leaders in Business Education throughout the state and nation. The program contains courses which are of interest to (a) prospective teachers for business subjects, (b) business teachers in secondary schools, colleges, and universities who are interested in securing additional training or advanced degrees in the field of Business Education, and (c) school administrators and supervisors of a Business Education program.

A graduate student in Business Education would select one of three curriculums:

Curriculum A—Prospective Teachers on the secondary level
Curriculum B—Prospective Teachers on the collegiate level
Curriculum C—Administration and Supervision of Business Education

Requirements for Admission:

Applicants for the Master of Science degree in Business Education must follow the application procedure as outlined by the director of the graduate school.

A student must have completed at least 45 quarter hours of undergraduate work in Business with not les sthan a 2.50 average. A student pursuing Curricu lum A or B must have the following undergraduate courses or equivalent:

Shorthand	9 quarter hours
Typewriting	9 quarter hours
Methods of Teaching	9 quarter hours
Student Teaching (or teaching experience)	6 quarter hours
Principles of Business Education	3 quarter hours
Principles of Economics	9 quarter hours

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Eng. 101-2-3	3	3	3
Sci. 121-2-3	4	4	4
Math. 171-2-200	3	3	3
Mus. 131, Art. 133, *Hlth. 151	3	3	3
Typing	3	3	3
BE 101-2-3	1	1	1
Phy. Ed. 11-12-13	1⅓	1⅓	1⅓
	18 1/3	18 1/3	18 1/3

Sophomore Year	*Quarter Hours Credit*		
Eng. 211-2-3	3	3	3
Social Studies 111, 112, 113	3	3	3
Econ. 211-2-3	3	3	3
Psych. 221-42-43	3	3	3
OA 204-5-6	3	3	3
Phy. Ed.	1 1/3	1 1/3	1 1/3
	16 1/3	16 1/3	16 1/3

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
OA 304-5-6	3	3	3
Eng. 321-22, OA 201	3	3	3
BL 311-2-3	3	3	3
Acct. 211-2-3	3	3	3
Ed. 201-301, BE 400	3	3	3
Soc. Stud. 114, OA 222			
Ec. Geo. 272	3	3	3
	18	18	18

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
BE 471A, B, C	6		
OA 401-2-3	3	6	
BE 472, 413		9	3
BA 331-2, 450	3	3	3
Psych. 463, 312	3		3
Statistics			3
Electives	3		6
	18	18	18

Suggested Electives—18 hours

OA 434—Office Management
Ec. 312—Money and Banking
Additional Accounting
Additional Office Machines
Additional English

*Three additional hours in Health are required of men.

Program of Study

Bachelor of Science Degree in Office Administration

(Secretarial Training)

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Typing	3	3	3
English 101-2-3	3	3	3
Science 121-2-3	4	4	4
Math 171-2-200	3	3	3
BE 101-2-3	1	1	1
Hlth 151, Music 131, Art 133	3	3	3
Physical Ed 101-2-3	1 1/3	1 1/3	1 1/3
	18 1/3	18 1/3	18 1/3

Sophomore	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 211-2-3	3	3	3
Economics 211-2-3	3	3	3
OA 204-5-6	3	3	3
OA 201-2-3	3	3	3
Speech 221 Eng 272 Art 203	3	3	3
Physical Education	1 1/3	1 1/3	1 1/3
	16⅓	16⅓	16⅓

Junior Year	Quarter Hours Credit		
Name of Course	I	II	III
English 321-2-3	3	3	3
OA 304-5-6	3	3	3
Act 311-2-3	3	3	3
B L 311-2-3	3	3	3
Electives	3	3	3
Psych 221, Geog. 272 OA301	3	3	3
	18	18	18

Senior Year	Quarter Hours Credit		
Name of Course	I	II	III
English 301-2-3	3	3	3
Hist 201-2-3	3	3	3
OA 401-2-3	3	3	3
BA 331-2 OA 434	3	3	3
BE 450 Statistics EC 312	3	3	3
Electives	3	3	3
	18	18	18

Short Programs of Training

Short programs of training leading to a certificate may be followed by students who do not wish to matriculate for a college degree. Academic credit will be granted for these courses. This training is designed on a two year terminal basis, leading to a certificate of proficiency in one of the following curricula:

A—Secretarial Science

B—General Clerical and Office Machines

C—Clerk-Typist

DESCRIPTION OF COURSES

Business Education

BE 101-2-3. *Guidance and Orientation to Business.* (1) A guidance, business and library orientation course for freshmen and new students. Includes orientation to the University, to the area of business, and survey of library resources and techniques.

*BE 400. *Principles of Business Education.* (3) A study of the basic principles and trends in business education. Topics include the purpose and relationships of business education, curriculum evaluation and current problems in the field.

BE 471A. *Methods of Teaching Typewriting.* (⅔) Methods and materials in teaching typewriting. (Pre-requisite, BE 400, courses in typewriting and all education courses). Seniors only. See requirements for student teaching.

BE 471B. *Methods of Teaching Shorthand.* (⅔) Methods and materials of teaching Gregg Shorthand and transcription. (Pre-requisites: BE 400, shorthand courses, and all other education courses). Seniors only.

BE 471C. *Teaching the Social Business Subjects.* (⅔) Methods of classroom procedure in the teaching of general business subjects, business law, business organization, elementary economics, bookkeeping, and other business subjects.

BE 413. *Curriculum Construction in Business Education.* (3) Aims, principles, practices, and problems involved in the construction of business curricula for the various types of educational institutions in which business subjects are taught.

BE 414. *Teaching of Bookkeeping and Business Arithmetic.* (3) Methods of teaching and classroom procedures in bookkeeping, accounting, and business arithmetic on the secondary level.

BE 450. *Senior Project Writing.* (3) Designed to aid the senior student in writing the project required for graduation.

BE 472. *Observation and Practice Teaching in Shorthand and Typewriting.* (9) Student teaching in the field in an accredited high school, in shorthand, typewriting, and other business subjects. (Prerequisite: methods courses).

* May be used for graduate credit also.

BE 473. *Observation and Practice Teaching in Social and General Business Subjects.* (6) Students teaching in an accredited high school in bookkeeping, and/or accounting, and/or business arithmetic, general business subjects which may include: economics, business law, general business, business organization, and other business subjects.

Office Administration

OA 201. *Office Machines.* (3) Instruction and training to develop reasonable skill in the operation of the calculating, duplicating, and other common office appliances. Fee $3.00.

OA 202. *Office Machines.* (3) Instruction and training to develop reasonable skill in the operation of the three major duplicating machines: also includes the vari-typer, addressograph, and other office appliances. Prerequisite: OA 201. Fee $3.00.

OA 203. *Office Machinery.* (3) Designed to give students an opportunity to become thoroughly familiar with the operation of the telephone switchboard. IBM, key punch, and transcribing machines. Fee $3.00.

OA 204-5-6. *Beginning Shorthand.* (9) Designed to develop an understanding of the basic principles of simplified method of Gregg Shorthand, and the ability to apply these principles to an extensive shorthand vocabulary. Fee $3.00. (205-6).

(205-6). Prerequisite: A "C" average in Freshman English.

OA 211-2-3. *Beginning Typewriting.* (9) Beginning typewriting for business majors, and so far as facilities permit, for other students who wish to acquire a working knowledge of typewriting. Fee $3.00 (per quarter).

OA 221-222. *Typewriting Speed.* (6) Development of superior skill in typewriting, to enable students to meet the demand for higher production rates for typewritten material. Fee $3.00. (per quarter).

OA 21-22-23. *Record Keeping.* (9) Designed to give students practice in the handling of important reports, documents, and records which are common to every business. For two-year terminal certificate program.

OA 31-32-33. *Office Training.* (9) Instruction in general office procedures, personality and human ethics, and correlation of instruction in typewriting, English and office machines. For two-year terminal certificate program.

OA 301. *Office Systems.* (3) Routine and procedures for handling correspondence and mailing, filing system, oral communication, office planning and layout. Systems of control are applied to each type of office work. Prerequisite: OA 221.

OA 304-5. *Advanced Shorthand and Transcription.* (6) Skill in taking dictation and in typewritten transcription is developed concurrently in this course in the process of building a usable skill in maximum production of mailable type transcripts. $3.00 lab fee per quarter.

OA 306. *Secretarial Training.* (3) Instruction in office procedures, performance of upper-level secretarial duties, filing, business ethics, and personality development. $3.00 lab fee per quarter.

OA 401-2-3. *Office Internship and Secretarial Problems.* (9) Based on an active program which provides opportunity for practical experience under actual business conditions. Includes voice-writing and audio-visual techniques. For seniors only.

OA 434. *Problems of Office Management.* (3) Problems involved in planning and directing the functions of business and professional offices, including office building, layout, management and preparation of office manuals.

OA 311-2-3. *Secretarial Accounting.* (9) Principles of Accounting, financial reporting, and record keeping for secretarial training students.

* May be used for graduate credit also.

Graduate Courses

BE 501. *Improvement of Instruction in Shorthand and Typing.* (3) For experienced and prospective teachers of typewriting, shorthand, and related office practice. Materials of instruction available to teachers presented and methods of developing original materials considered and applied through lectures, demonstrations, reading, and reports.

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

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

BE 504. *Teacher Training in Business Education.* (3) The improvement of teacher training programs for Business Education: recent trends; significant problems; suggested training patterns, and teacher aids and materials. For supervisors of Business Education programs in institutions of higher learning.

BE 521. *Current Problems in Business Education.* (3) Significant problems as evidenced by the study and evaluation of the current literature considered. The course develops a better understanding of the underlying factors of business education problems, enabling the student to deal with them more effectively. Particular attention given to specific problems of members of the class.

BE 522. *Tests and Measurements in Business Education.* (3) Study of recent tests in commercial education; achievement, instructional predictive, and diagnostic. Evaluation and rating of tests; construction of objective tests.

BE 523. *Guidance in Business Education.* (3) Principles, problems and programs of guidance in business education. Participants will be required to design guidance programs for specific school situations.

BE 524. *The Administration and Supervision of Business Education.* (3) Deals with administration and supervisory problems; departmental organization; pupil records; rendering service to administrative officers and other school departments; guidance in business education; tests and measurements; placement and follow-up; equipment; in-service training of teachers; new materials; current publications; state and national testing programs.

Courses in Research

BE 512. *Research in Business Education.* (3) Study of significant research investigations in commercial education other than tests. Includes surveys, job analysis method investigations, and criteria of good research.

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

UNIVERSITY EXTENSION AND FIELD SERVICE

PURPOSE

The Division of University Extension is an administrative unit of Tennessee A. and I. State University organized for the purpose of granting educational services to those citizens of the State's social and economic structure not enrolled as resident students of the University. The division serves to integrate off-campus services with campus facilities.

SCOPE OF INSTRUCTION

Extension courses at Tennessee A. and I. State University are classified into three groups to meet certain definite needs that are apparent in the State of Tennessee.

Group 1. Courses of university grade are offered in the interest of those persons who have adequate preliminary training but whose occupations or means will not permit their attendance as residence students at the University. Students who find their college careers postponed or interrupted may well avail themselves of the opportunities in this group. By meeting certain requirements, students may secure credit toward the Bachelor Degree at Tennessee A. and I. State University; however, not more than 48 credit hours of work taken in extension will be counted toward resident credits for the Bachelor Degree. The last 45 quarter hours or the last year's (9 months) undergraduate work must be taken in residence at the University.

Group 2. *Effective September 1, 1953.* Only 9 quarter hours of credit taken through Extension will be allowed toward the fulfillment of the requirements for the Master's Degree. Credits earned in Extension will not reduce the minimum 3 quarters of required resident study. A minimum of 36 graduate credit quarter hours must be earned in residence. Credit hours earned in Extension will be counted toward the minimum 45 credit hours requirement only when they meet the specific need of the student as outlined by his graduate committee.

Group 3. Non-credit courses are designed as general cultural courses or as vocational courses for the person who is employed and who desires to further his efficiency in a particular field, or for general cultural improvement. College credit or college entrance credit may be secured through these courses and certificates of proficiency will be awarded where justified. Courses offered in Group No. 3 are not designed for college credit nor college entrance credit. These courses are offered to meet certain specific needs of common interest groups, however, college credit, or college entrance credit may be arranged for under certain special circumstances upon the approval of the administration of the University.

COURSES AVAILABLE

Courses will be organized to meet specific needs provided such courses are described in the latest edition of the regular University catalog. Only courses offered during the fall, winter and spring quarters at the university will be offered through extension during these respective quarters. A list of available graduate courses will be provided at the time of registration.

OTHER EXTENSION SERVICES

In addition to courses found in the university catalog, provisions are made to meet the specific needs of special interest groups in the following areas: workshops, lectures, demonstrations, conferences and institutes. Arrangement for these services may be made through the Director of University Extension, Tennessee A. and I. State University, Nashville, Tennessee.

WHO MAY ENROLL

While most students admitted to extension courses are high school graduates, anyone over 21 years of age qualified by industrial, business or military experience may enroll. Additional information regarding enrollment in extension courses may be secured by writing to the Director of University Extension, Tennessee A. and I. State University or by calling Nashville, Chapel 2-4311, Station 204.

ORGANIZATION OF EXTENSION COURSES

Extension courses, where offered for college credit, parallel similar courses offered in resident instruction and are taught by members of the university extension faculty. A three-hour credit course is divided into at least twelve assignments. The time necessary for preparation of a satisfactory report by a student on any assignment should be six hours. Each assignment requires certain reading in specified textbooks and the reflection necessary for proper organization of the material read and its application to the principles that are expected to be developed. The student is required to write his conclusions (in clear English) in the form of a report on each assignment, which is to be returned to the instructor for criticism and correction. Supplementary reading and reports may be demanded of the student on any assignment, when, in the judgement of the Committee on Extension, they are necessary. University entrance courses and vocational subjects are taught in much the same manner as collegiate courses.

ADMISSION AND REGISTRATION

No entrance examination is required for admission to the extension courses, but the right is reserved to reject any applicant who does not furnish complete or satisfactory data upon the official application form furnished him. Application for entry may be made at any time but courses will not be organized until the following procedures are expedited.

1. The prospective student should read carefully the announcements of the courses offered before selecting the one he or she wishes to pursue, and should choose the ones he or she is prepared to pursue with profit. Students desiring college credit must state this fact in advance, and comply with the requirements indicated in the latest edition of the catalog.
2. Having made the course selection, the applicant should fill in the application blank supplying all the data requested thereon and submit with the fee of $5.00 per credit hour to the Director of the extension center located in his area.
3. When the local Extension Director or supervisor receive a minimum of fifteen applications or the equivalent in registration fees for each course desired, he will file an application with the Director of University Extension, Tennessee A. and I. State University, along with the fee of $5.00 per credit hour for each prospective member of the proposed class.
4. Upon receipt of course application from the local official, the Director of University Extension will submit the application to the University Extension Committee for approval. (The fee for extension courses is $5.00 per credit hour, or $15.00 per three credit hours. *All registration fees must be paid on or before the date of registration.*
5. The Director or persons designated by the Committee on University Extension Services will contact the local official for the purpose of registering applicants and organizing the course or courses.
6. *Refunds of registration fees will be made only to persons who withdraw before the first class meeting, providing the refund is requested within thirty days after the date of registration.* The applicant requesting the refund shall send a written statement including the official receipt number and a statement by the instructor of the class and/or the director of the center to Mrs. E. P. Johnson, Bursar, Tennessee A. and I. State University, Nashville, Tennessee.

GRADUATE SCHOOL

1. *Requirements for Admission*—Requirements for admission are the same for Extension Graduate students as for regularly enrolled graduate students. (See Handbook of the Graduate School.)
2. *Procedure for Admission to Extension Graduate Courses*—
   a. Make application for admission to the Graduate School through the Office of Admission on forms provided.
   b. Have transcript (s) of all previous college work sent immediately to the Office of Admissions.
   c. Notification of acceptance to pursue graduate work in Extension will be sent candidates by Office of Admissions.
   d. Students whose transcripts have not been received and evaluated by the Committee on Admissions, may be permitted to register on a temporary basis until admission procedures have been completed. (See Graduate Handbook).

INSTRUCTIONAL STAFF

The University Extension Committee is desirous of securing the best qualified personnel to teach Extension courses. Instructors employed on the Extension Staff must meet the same general qualifications as Instructors in comparable fields employed to teach courses in residence. Persons desiring to teach in Extension shall make application to the University Extension Committee. These applications are reviewed by the Committee and approved by the respective heads of the Department of the field in which the applicant plans to teahc, and the Administration of the University.

GENERAL CREDIT

University credit or university entrance credit, as the case may be, will be given for completion of the courses in Group I, (See page 4) when requirements of the instructor concerned have been met and examinations have been passed and officially approved by the head of respective departments through which the course is offered. Students who enroll for degree credit, however, must meet the entrance requirements of the University. (See University Bulletin or Graduate Handbook).

Extension credits earned in other institutions will be accepted only if these have been earned in an institution which is a member of the Teachers College Extension Association or the University Extension Association. In no case will credits be accepted in excess of the maximum totals allowed for extension work as set forth in the above paragraphs regarding credits, and/ or grades earned indicate that the student has profited from course or courses pursued.

1. *Undergraduate credit*—Not more than 48 credit hours in Extension courses will be accepted towards the Bachelor Degree. Of the total credits approved for certification, not mor than six hours of such credit will be allowed for renewal of certificates. Courses numbered 300 (Junior) and 400 (Senior) earned through extension will not be accepted as meeting certification requirements for the elementary certificates granted on the two year college level.
2. *Graduate Credit*—Credit not exceeding nine (9) quarter hours may be accepted from Extension study but such credit does not reduce the minimum residence period of one academic year (3 quarters), (See Graduate Handbook of Graduate School).

VETERANS

Veterans of World War II and Korea may enroll in any of these courses under provisions set forth by the G.I. Bill and Education Bill which may be obtained from Veterans' Administration office before registering for any course.

GRADES

Awarding of grades in Extension Classes follow the same procedure as listed in the University Bulletin. (This also applies to "Incomplete Grades").

Notes

SCHOOL OF ENGINEERING
JAMES A. PARSONS, Chairman

SCHOOL OF ENGINEERING

JAMES A. PARSONS, *Chairman*

GENERAL INFORMATION

The School of Engineering is divided into three articulated components of technical education, namely:

1. A Bachelor of Science Degree program with curricula in Architectural, Civil, Electrical and Mechanical Engineering. Electrical Engineering is offered under two options of power and communicaions and Mechanical Engineering with a choice of power or metallurgy options.
2. An Industrial Education Program with teacher training curricula in Industrial Arts Eduation and Aviation Education both of which lead to the Bachelor of Science Degree. A third curriculum of Vocational Technical Training of two years under graduate courses in Aero Mechanics, Auto Mechanics, Cabinet Making, Carpentry, Commercial Refrigeration, Drafting, Electricity, Electrical Household Appliances, Foundry, Masonry, Plumbing and Heating, Radio and Sheet Metal Work.

The aim of the School of Engineering is to train students rigorously and thoroughly on a broad basis of a coherently related sequence of subjects in three major fields: physical science and mathematics; social-humanistics; and the respective professional or vocational disciplines. To these ends, the instructional facilities of the School of Arts and Sciences and the School of Education are available to the students of the Engineering School. Out of such program, graduates will possess also the general education for a well-rounded and wholesome life in their communities.

The School of Engineering offers in cooperation with the several schools of the University, undergraduate courses of study, normally four years (i.e. twelve quarters of twelve weeks each) in length, leading to the Bachelor of Science degree in Architectural Engineering, Civil, Electrical, Mechanical, Metallurgical Engineering, Industrial Education and Aviation Education.

The School also offers undergraduate courses on a vocational technical level for two years in: Aero Mechanics, Auto Mechanics, Cabinet Making, Carpentry, Commercial Refrigeration and Air-Conditioning, Drafting, Electricity, Electrical Household Appliances, Foundry, Masonry, Plumbing and Heating, Radio, Sheet Metal, all leading to a certificate. Related college instruction is also given in the courses.

The School may revise from time to time any of its curricula in order to conform with technological advancement or for purposes of accreditation. Students may, however, graduate under the course outline required at the time of their entering, or they may elect, with the approval of their adviser, equivalent revised courses. All students must satisfactorily complete the prescribed courses under their curriculum in order to qualify for their Bachelor of Science degree.

The School of Engineering of Tennessee A & I State University is located in the greatest area of industrial expansion in the Southeast. It is within two hundred miles of the Tennessee Valley Authority and the Atomic Energy Commission's Oak Ridge Plant; near the foundry and steel mills of Middle Tennessee and Alabama and in the midst of the largest source of hydro-electric power in the East. In Nashville, unusual opportunities for first-hand study of foundries, waterworks, large construction projects and other similar engineering enterprises are on hand; together with engineering organization to provide field instruction.

The school of Engineering has a physical plant of over one and one-half million dollars consisting of:

1. Engineering Building—In this building are located the foundry, electrical, physical testing, cement and soils, combustion engines, refrigeration and air-conditioning, hydraulics, and model-making laboratories, four drafting rooms; auditorium; classrooms and reading rooms; and offices.

2. Industrial Arts Building—In this building are located the machine, welding, sheet metal, refrigeration, radio and electrical vocational technical training shops. The building is fully equipped with lathes, milling machines, sheet metal and welding machines.
3. The Vocational Shop Building—The aero and auto mechanics shops; aviation education and masonry shops are located in this building with equipment for flight training and aviation mechanics. Equipment consists of testing equipment, link trainer and radial engines.
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.

COURSES IN ENGINEERING

Undergraduate

The following core courses in general are offered in all degree programs.

Engineering Orientation

Offered by the Faculty of the individual departments

101. *Engineering Orientation.* (1) A survey of the application of mathematics to engineering problems. Use of geometry and application of basic physical laws. One lecture period.

102. *Engineering Orientation.* (1) A continuation of Engineering 101, with emphasis on exponential quantities, simultaneous equations, graphs in the solution of elementary technical problems. One lecture period. Prerequisite Engineering 101.

103. *Engineering Orientation.* (1) Problems in the use of the slide rule involving multiplication, division, roots, powers and trigonometric functions. One lecture period. Prerequisite Engineering 102.

Engineering Mechanics

Offered by the Faculty of Department of Civil Engineering

202. *Analytical Mechanics Statics.* (4) The theory of analytical mechanics and the principles of statics. Instruction given in force system, equilibrium, centroids, center of gravity, friction, and moment of inertia. Prerequisites: Math 262; Physics 221. Four lecture periods.

203. *Analytical Mechanics Dynamics.* (4) Instruction in principles of kinetics and Kinematics. Includes the theory of rectlinear, curvilinear and rotary motion, impact stresses, and impulse and momentum. Prerequisites: Eng. 202; Math 263. Four lecture periods.

342-43. *Strength of Materials.* (6) Stress and strain, direct and shearing stresses, torsion and bending, riveted and welded joints, short column, tension members, shafts and beams, deflection, statically indeterminate beams, combined stresses, column theory, non-homogeneous beams. Prerequisites: Eng. 203, Physics 221, Math. 261-62. Three lecture periods.

403. *Materials Testing.* (3) Testing properties of wood, metal and refactory products; control of concrete mixtures; instruction in field tests for determining quality of cement; analysis of and fine aggregates. Prerequisites: Eng. 342. One lecture and four laboratory periods. Fee $2.00.

311-12. *Fluid Mechanics.* (6) Fundamentals of fluid behavior. It deals with the properties of fluids; theory of hydrostatics; basic principles of fluid flow and measurements, study of applied flow in pipes, open channels; and water power machinery. Prerequisite: C. E. 202, 203. Three lecture periods.

123. *Elementary Surveying.* (3) An elementary and basic course in the theory of plane surveying. Emphasis will be placed on the development of the following skills: The ability to locate and set machinery, to lay out buildings, and other structures. A technical knowledge of surveying instruments and a knowledge of the theory of errors. Prerequisite: Math 162. One lecture and two field periods.

Engineering Drawing

Offered by Faculty of Department of Architectural Engineering

111. *Engineering Drawing.* (3) Instruction in the use of drawing instruments, freehand lettering and technical sketching, orthographic projection and auxiliary views. Required of all engineering and industrial education students. Prerequisite: Plane Geometery. Six laborator periods. Fee $2.00.

112. *Engineering Drawing.* (3) Sections and dimensions practice, pictorial representation, freehand lettering and technical sketching. Required of all engineering and industrial education students. Prerequisite: Engineering 111 or equivalent. Six laboratory periods. Fee $2.00.

113. *Engineering Drawing.* (3) Representation of screw threads, fasteners, springs, gears, pipe drawing. Working drawings of machine parts. Freehand lettering and technical sketching. Required of all engineering and industrial education students. Prerequisite: Engineering 112 or equivalent. Six laboratory periods. Fee $2.00.

211. *Descriptive Geometry.* (3) An elementary study of the point, line and plane, with theoretical and practical problems. Six laboratory periods. Required of all mechanical, architectural and civil engineering students. Prerequisite: Engineering 113.

212. *Descriptive Geometry.* (3) Curved surfaces, their tangent lines and planes; the intersection of surfaces, developments, shades and shadows, perspective. Required of all civil, mechanical and architectural engineering students. Prerequisite: Engineering 211. Six laboratory periods. Fee $2.00.

Engineering Metallurgy

Offered by Faculty of Department of Mechanical Engineering (Metallurgy Option)

221. *Fundamentals of Physical Metallurgy.* (3) An introductory course based upon the physics of the metallic state. The internal structure of metals and its influence upon the attendant properties, phase equilibia and transformations in the solid state are emphasized. Prereuqisites: Chem. 113, Physics 222. Three lecture periods.

Engineering Thermodynamics

Offered by Faculty of Department of Mechanical Engineering

301. *Elementary Thermodynamics.* (3) Thorough treatment of the laws of heat; transformation of energy, theoretical limitations; second law, absolute temperature, entropy and available energy; properties of gases, liquids, vapors and vapor mixtures. Prerequisites: Math 261-2-3. Three lecture periods.

DEPARTMENT OF ARCHITECTURAL-ENGINEERING

L. QUINCY JACKSON, *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 in the search for organic order.

Upon completion 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 232.

CURRICULUM IN ARCHITECTURAL-ENGINEERING

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Mathematics 161-62-63	5	5	5
English 101-2-3	3	3	3
Architectural Engineering 111-12-13	1	1	1
Engineering 111-12-13	3	3	3
Architectural Engineering 101-2-3	3	3	3
Air Science I	1	1	1
Engineering 101-2-3	1	1	1
Physical Education			
Speech 202			3
Architectural Engineering 221		3	
	17⅓	20⅓	20⅓
	17 1/3	17 1/3	17 1/3

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Mathematics 261-62-63	5	5	5
English 211	3		
Physics 221-22-23	4	4	4
Engineering 202		4	
Engineering 123			3
Architectural Engineering 223			3
Architectural Engineering 211-12-13	1	1	1
Architectural Engineering 201-2-3	3	2	3
201-2-3	3	2	3
Engineering 211-12	3	3	
Air Science II	1	1	1
Physical Education 20's to 50's	1/3	1/3	1/3
	20 1/3	20 1/3	20 1/3

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Architectural Engineering 301-2-3	4	4	5
Engineering 342-43	3	3	
Civil Engineering 441			3
Architectural Engineering 311	2		
Architectural Engineering 312		3	
Architectural Engineering 321	2		
Architectural Engineering 322		4	
Architectural Engineering 331	3		
Architectural Engineering 332		3	
Architectural Engineering 333			2
Architectural Engineering 342			1
Civil Engineering 301-3	3		3
Electives	3	3	3
Engineering 403			3
	20	20	20

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Architectural Engineering 401-2-3	5	5	5
Architectural Engineering 411	3		
Architectural Engineering 412		2	
Architectural Engineering 422			2
Civil Engineering 452		3	
Architectural Engineering 421	2		
Civil Engineering 432		3	
Architectural Engineering 431			4
Civil Engineering 431	3		
Architectural Engineering 432		2	
Architectural Engineering 441	2		
Architectural Engineering 442		2	
Architectural Engineering 443			2
Electives		3	3
Architectural Engineering 453			3
	15	20	19

COURSES IN ARCHITECTURAL-ENGINEERING

Undergraduate

101. *Architectural Design I Elements of Composition.* (3) Elements and their use in design, two and three dimensional design problems emphasizing the relationship of elements in composition, emphasis on point, line and plane, color and form. Required of all students. Three three-hour laboratory periods per week. Laboratory fee $3.00.

102. *Architectural Design I Drawing Techniques.* (3) Freehand sketching, graphics, methods, lettering and representational drawings in several medium, as related to art techniques and individual development. Prerequisite Arch. Engr. 101. Three three-hour laboratory periods per week. Laboratory fee $3.00.

103. *Architectural Design I Presentation Drawing.* (3) Sketchings and presentation drawings, perespective drawing, lettering, photography, display layouts and exhibits. Prerequisites Arch. Engr. 102-112. Three three-hour laboratory periods per week. Laboratory fee $3.00.

111-12-13. *Nature of Materials.* (3) Nature of forms, growth and geological development, source, uses new and old, aesthetic properties, color and design, related reading, sketchbooks. Required of all students. Two two-hour laboratory periods per week. Laboratory fee $1.00.

201. *Architectural Design II Small Structures.* (3) Introduction to architectural design; expressions of principles, in structural and aesthetic relationship. Prerequisites Arch. Engr. 103, 113. Three two-hour laboratory periods per week. Laboratory fee $3.00.

202. *Architectural Design II Small Structures.* (2) Problems of more complex nature involving principles, materials, space concepts and site relationship. Prerequisites Arch. Engr. 201-223. Four two-hour laboratory periods per week. Laboratory fee $3.00.

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. 202-212. Three three-hour laboratory periods per week. Laboratory fee $3.00.

211-12-13. *Advanced Study of Materials I, II, and III.* (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. 103, 113, 201, 212. Two two-hour laboratory periods per week. Laboratory fee $2.00.

221. *History of Ancient Architecture.* (3) Architecture and related arts prior to Roman culture including fundamental expression of social, religious and political life. Prerequisite, Arch. Engr. 103. Three lecture periods per week.

223. *History of Medieval Architecture.* (3) Architectural expressions of civilizations from the Christian era to the beginning of the Renaissance period. Prerequisite, Arch. Engr. 221. Three lecture periods per week.

301-2. *Architectural Design III Composition.* (8) 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. 103-203-223-301-311. Four-two hour laboratory periods per week. Laboratory fee $3.00 each course.

303. *Architectural Design III Principles.* (5) A systematic study of elements of a complex nature. Analysis and resynthesis of existing cultural patterns as related to other arts. Principles as a tool in the search for forms; applications and presentation of drawings, through models and other medium. Prerequisites, Arch. Engr. 321-322. Four-two hour laboratory periods per week. Laboratory fee $3.00.

311. *History of Renaissance Architecture.* (2) Principles of Renaissance architecture and related arts of sculpture, painting in Europe. Prerequisites: Arch. Engr. 223, 203. Three lecture periods per week.

312. *History of American Architecture.* (3) American architecture of the past and present. A study of leading architects and their contribution to American architecture of our times. Prerequisites: Arch. Engr. 221, 223. Three lecture periods per week.

321. *Architectural Construction.* (2) Methods of building construction and the assembly and use of building materials. Studies on building types old and new. Prerequisite: Arch. Engr. 213. Two lecture periods per week.

322. *Working Drawings.* (4) Development of various techniques in drafting, representating materials and methods. Elementary construction drawing for small buildings and furnishings. Prerequisite: Arch. Engr. 301. Four-two hour laboratory periods per week. Laboratory fee $1.50.

331. *Sanitation.* (3) 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. Laboratory fee $1.00.

332. *Heating and Air-conditioning.* (3) 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. Three lecture periods per week.

333. *Electrical Wiring.* (3) A study of local and national codes, regulating the use and methods of installation of electric wiring and fixtures, various kinds of current, wiring and consideration involved. Prerequisites: Physics 223, Arch. Engr. 321-22. Three lecture periods per week.

342. *Graphic Statics.* (1) Graphical methods of attack on physical problems, development of the possibilities of graphic solutions through geometric solutions. Development of the graphic modes of thought as a tool of attack; emphasis on representational graphics from the architectural view point. Prerequisite: Physics 223, Engr. Draw. 202. One-two hour lecture per week.

401. *Architectural Design IV Planning.* (5) 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. Laboratory fee $3.00.

402. *Architectural Design Planning.* (5) For completion of senior standards in 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. Laboratory fee $3.00.

403. *Architectural Design—Advanced Planning.* (5) Continuation of Architectural Design 402. One single problem guided by the faculty; working drawings, 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. Laboratory fee $3.00.

411. *History of World Architecture.* (3) Laboratory with lectures and discussion covering the creative spirit and principles underlining the development of arts and architecture both past and present. Prerequisites: Arch. Engr. 223, 312. Three lecture periods per week.

412. *Electrical Illumination.* (2) Physical and psychological aspects of illumination; illumination design and the application of light and lighting equipment in architecture. Prerequisites: Arch. Engr. 223-333. Two lecture periods per week.

421. *Professional Practice.* (2) 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.

422. *Architectural Acoustics.* (2) Basic studies in the design and use of materials that effect the hearing conditions; sound absorption analysis, noise control and the effect of form and size and finish surface materials in sound control. Prerequisites: Arch. Engr. 401, 431, Physics 223. Two lecture periods per week.

431. *Architectural Working Drawings.* (4) Architectural detailing for finishes, methods and investigation of structural systems; preparation of shop and erection drawing. Prequisites: Arch. Engr. 303, 402. Four two-hour laboratory periods per week. Laboratory fee $2.00.

441. *City and Regional Planning.* (2) Elementary application of planning theory to towns, cities and regions; studies involving problems of social and natural nature; must have senior standing to schedule course. Two two-hour laboratory periods per week. Laboratory fee $1.00.

442. *City and Regional Planning Seminar.* (2) Continuation of 441; problems associated with replanning and redevelopment in existing communities; individual treatist to supplement with group projects. Students must have senior standing. One-two hour lecture period per week.

443. *City and Regional Planning Theory.* (2) Lectures on historical background of city planning; reports on relation of architecture and engineering to needs of city development and design, special problems involving civil engineering and engineering projects, lectures, discussions and written reports. Two lecture periods per week.

453. *Building Equipment.* (3) The selection, use and design of electrical and mechanical equipment for buildings; problems involving cost, maintenance and purchasing of standard and custom design equipment. Three lecture periods per week.

DEPARTMENT OF CIVIL ENGINEERING

NAPOLEON JOHNSON, *Head*

The oldest branch of the engineering profession, civil engineering is concerned primarily with the planning, design and construction of the permanent works of modern industrial and urban life, such as transportation routes, water supply and power developments, sewage, irrigation, bridges, tunnels, airports and other structures. Dealing, as he does, with both the forces of nature and with projects that influence the economic and social conditions of many people, the Civil Engineer must combine fundamental knowledge of science and engineering with experience and judgment, and with personal characteristics of the highest order.

The curriculum in Civil Engineering is arranged so that all students receive training in the basic principles of mathematics and science and in engineering applications such as surveying, engineering geology and structural theory and design.

The curriculum in Civil Engineering leads to the degree of Bachelor of Science in Civil Engineering upon the completion of a minimum of 231 quarter hours.

CURRICULUM IN CIVIL ENGINEERING

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Mathematics 161-62-63	5	5	5
English 101-02-03	3	3	3
Chemistry 111-12-13	4	4	4
Engr. 111-12-13	3	3	3
*Shop Practice	3	3	
Engr. 123			3
Engineering 101-02-3	1	1	1
Air Science I	1	1	1
Phy. Ed. 11-12-13	1/3	1/3	1/3
	20 1/3	20 1/3	20 1/3

Sophomore Year	*Quarter Credit Hours*		
Name of Course	*I*	*II*	*III*
Mathematics 261-62-63	5	5	5
English 211	3		
Speech 202-03		3	3
Physics 221-22-23	4	4	4
Engineering 202-3		4	4
Civil Engr. 212	3		
Engr. 211-12	3	3	
**Civil Engr. 321			3
Air Science II	1	1	1
Phy. Ed. 20's to 50's	1/3	1/3	1/3
	19 1/3	20 1/3	20 1/3

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Civil Engr. 301-2-3	3	3	3
Engr. 311-12	3	3	
Civil Engr. 313			3
Civil Engr. 332		3	
Engr. 342-43	3	3	
Economics 211			3
Engr. 221			3
Elect. Engr. 301-2-3	3	3	3
Engr. 301	3		
Civil Engr. 213	3		
Non-technical elect.		3	
Civil Engr. 333			3
	18	18	18

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Civil Engr. 421-22-23	3	3	3
Civil Engr. 441-42-43	3	3	3
Civil Engr. 452-53		3	3
Civil Engr. 451	3		
Civil Engr. 450			3
Mathematics 462-63	3	3	
Engr. 403			3
Civil Engr. 401-02	3	5	
Civil Engr. 431-32-33	4	2	3
	19	19	18

* Students may elect two of the following shop courses: Woodwork 101, Electricity 101, Masonry 101, and Plumbing 101.

COURSES IN CIVIL ENGINEERING

Undergraduate

*212. *Advanced Surveying.* (3) Computation of latitudes closure of traverses, land area problems, U. S. System of Public Land surveying, field astronomy, triangulation and hydrographic surveying. Prerequisite, Civil Engr. 211. One lecture and two laboratory periods.

*213. *Mapping.* (3) Use of plane table, transit and stadia, application of principles of photogrammetry, topographical maps from stadia notes. Prerequisite, Civil Engr. 211. One lecture and two laboratory periods.

301. *Theory of Structures.* (3) Analysis of stresses due to fixed loads on statically determinate structures. Application of shear and moment diagrams to beams, columns and girders. Prerequisites: Physics 221, Math. 261-62. Three lecture periods.

302. *Theory of Structures II.* (3) Analysis of stresses due to movable loads on statically determinate structures. Application of principles of highway and railroad moving load diagrams; use of shear and moment influence lines in the design of bridges. Prerequisite: C. E. 301. Three lecture periods.

303. *Theory of Structures III.* (3) Application of elastic theory, moment distribution and method of least work in the application of elastic theory in the analysis of statically indeterminate structures. Prerequisites: C. E. 301-2. Three lecture periods.

313. *Hydraulics.* (3) Fundamentals of fluid behavior. It deals with the properties of fluids; theory of hydrostatics; basic principles of fluid flow and measurements, study of applied flow in pipes, open channels; and water power machinery. Prerequisite: C.E. 203,301. One lecture and two laboratory periods.

*321. *Route Surveying.* (3) Curves and earthwork problems with application to heavy construction; practice in estabilshing line and grade for highways, railways, sewers, water and steam distribution lines and other underground utilities; setting slope stakes; and erection of batter boards. Prerequisites: C. E. 211-12-13. One lecture and four laboratory periods.

332. *Concrete Construction.* (3) Design and control of concrete mixes and methods of forming, placing and curing concrete. One lecture and two laboratory periods. Laboratory fee $2.00.

333. *Engineering Geology.* (3) Materials of the earth and their structures; physiography. The practicum consists of field work; the study of topographic and geologic maps; and of rocks and minerals.

401. *Elements of Railway Design.* (3) Civil Engineering problems of railway design and construction with application to preliminary investigation of traffic, gradient, alinement and earthwork; nomenclature of railway track and switching devices; and construction of rock bed. Prerequisite: C. E. 321. Three lecture periods.

402. *Highway Engineering.* (5) Principles of geometrical design, design of rigid and flexible pavements, traffic studies, highway materials, highway economics, principles of highway administration, and methods of construction. Prerequisites: C. E. 321-33-431. Five lecture periods.

421. *Hydrology.* (3) Elements of the processes governing the depletion and replenishment of the water resources of the land areas of the earth. Prerequisites: Math. 311, C. E. 313.

422 *Waterworks Engineering.* (3) Theory and Design of the collection, purification and distribution of public water supplies. Prerequisite: C. E. 421. Three lecture periods and field trip.

423. *Sewerage and Sewage Disposal.* (3) Theory, design, construction and operation of sanitary and storm water sewers, treatment plants and appurtenances. Prerequisites: C. E. 421-22. Three lecture periods and field trip.

431. *Soil Mechanics.* (4) Principles of Soil Mechanics as applied to design of foundations for buildings, highways and bridges. Theory of consolidation, Lateral Earth pressure, Theory of pressure distribution. Soil Stabilization. Prerequisites: Eng. 343, C. E. 333. Four lectures.

* Field practice for two weeks prior to opening of Fall Quarter (required of all Civil Engineering students of both options).

433. *Foundations.* (3) Design of dry and sug aqueous foundations, such as piers, footings, abutments; principles and practices in piling and underpinning; and application of soil mechanics to designing of foundations. Prerequisites: C. E. 302, 431. Three lecture periods.

432. *Soil Mechanics Laboratory and Field Exercise.* (2) Laboratory tests to determine Shearing resistance, Un-confined compression, Aherberg Limits, Maximum Density. Grain size analysis, Seepage analysis and the analysis of Intergranular and porewater pressures will be made. Stress-strain characteristics of clays will be investigated by the use of consolidation tests. Field exercises will consist of subsurface explorations, soil surveys, field density and permeability tests. Prerequisites: C. E. 333, C. E. 431, Engr. 343. 2 laboratory periods.

441. *Structural Design—Timber.* (3) Design of frame structures, such as mill buildings, trusses, and bridges; use of T E C O connectors in laminated trusses; and beam and girder construction. Prerequisites: C. E. 301, Engr. 343. One lecture and four laboratory periods. Laboratory fee $1.00.

442. *Structural Design—Steel I.* (3) Design of steel building frames and grillage footings. Prerequisites: C. E. 301. Engr. 343. Two lectures and two laboratory periods.

443. *Structural Design—Steel II.* (3) Design of steel roofs and bridge trusses; plate girders and built-up columns and main compression members. Prerequisite: C. E. 442. Two lectures and two laboratory periods.

450. *Senior Project.* (3) All seniors are required to select and execute a project under the supervision of their major adviser to be approved by the chairman of the school. It may involve the design and making of a project complete with drawings, pictures, specification and detail data involved in its construction; or, a research and compilation of a subject within the field of the student's interest.

451. *Engineering Law.* (3) Emphasis upon negotiable instruments; real property; contracts; riprarian rights and condemnation proceedings; writing and interpretation specification. Three lecture periods.

452. *Structural Design—Concrete I.* (3) Design of concrete beams and girder structures; concrete joist of metal pan and terra cotta construction. Two lectures and two laboratory periods.

453. *Structural Design—Concrete II.* (3) Design of flat slab structures; retaining walls; and bridges. Two lectures and two laboratory periods.

454. *Structural Design—Cylindrical Concrete Shell Roof.* (3) Design of thin shell concrete roof, major emphasis to be placed on the design of the barrel type of concrete shell. Prerequisite: Civil Engr. 452. Three lecture periods.

DEPARTMENT OF ELECTRICAL ENGINEERING

FRED W. BRIGHT, *Head*

The field of eletcrical engineering is very broad. It embraces the techniques and devices for the generation, transmission and use of electrical energy to supply light and power in the home, the shop and in industry. It includes the areas of radio, television and radar. It emcompasses the new and rapidly developing areas of control, measurement and calculation where electronics has made possible the achievement of hitherto undreamed accuracy.

The graduate in electrical engineering is equipped to take his place as a junior engineer, with either industry or government in one or more of these areas of the profession. Here he will work under close supervision until he has acquired the experience requisite to the assumption of responsibility. His progress in the profession will depend to a large degree upon how well he has mastered his college courses and upon how assiduously he applies himself to his work. He is prepared to study at the graduate level in preparation for a career in research.

The minimum quarter hours required to receive the Bachelor of Science degree in Electrical Engineering are 236.

CURRICULUM IN ELECTRICAL ENGINEERING

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Mathematics 161-62-63	5	5	5
English 101-02-03	3	3	3
Chemistry 111-12-13	4	4	4
Engr. 111-12-13	3	3	3
Engr. 123			3
*Shop Practice 101	3	3	
Engineering 101-02-03	1	1	1
Air Science I	1	1	1
Phys. Ed. 11-12-13	1/3	1/3	1/3
	20 1/3	20 1/3	20 1/3

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Mathematics 261-62-63	5	5	5
Physics 221-22-23	4	4	4
English 211	3		
Speech 202		3	
Elect. Engr. 211-12-13	3	3	2
Elect. Engr. 311			3
Engineering 202-3		4	4
Air Science II	1	1	1
Elect. Engr. 233			1
Economics 211	3		
Phys. Ed. 20's to 50's	1/3	1/3	1/3
	19 1/3	20 1/3	20 1/3

POWER OPTION

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Engineering 342-43	3	3	
Speech 203			3
Elect. Engr. 363			3
Elect. 321-22	1	1	
Elect. Engr. 383			1
Elect. Engr. 373			3
Elect. Engr. 351-52	3	3	
Engr. 301	3		
Mech. Engr. 302		3	
Mathematics 462-63	3	3	
Engr. 221			3
Engr. 311-12	3	3	
Physics 311-12-13	3	3	3
Non Technical elective.			3
	19	19	19

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Elect. Engr. 411-12-12	3	3	3
Elect. Engr. 414-15-16	1	1	1
Mech. Engr. 411-12-13	3	3	3
Elect. Engr. 450			3
Elect. Engr. 361-62	3	3	
Elect. Engr. 372		1	
Engr. 403			3
Economics 212		3	
Civil Engr. 451	3		
Major electives	6	6	6
	19	20	19

* Electrical Engineering majors may elect any two of the following shop courses: Household Appliances Rep. 101, Radio 101, Electricity 101, and Sheet Metal 101.

COMMUNICATION OPTION

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Engineering 342-43	3	3	
Speech 203			3
Elect. Engr. 351-52	3	3	
Elect. Engr. 363			3
Elect. Engr. 373			3
Elect. Engr. 321-22	1	1	
Elect. Engr. 383			1
Engr. 301	3		
Mech. Engr. 302		3	
Engr. 221			3
Mathematics 462-63	3	3	
Physics 311-12-13	3	3	3
Elect. Engr. 361-62	3	3	
Elect. Engr. 372		1	
Non Technical elective			3
	19	20	19

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Elect. Engr. 411-12-13	3	3	3
Elect. Engr. 414-15-16	1	1	1
Major Electives	6	6	6
Elect. Engr. 450			3
Technical Electives	3	3	3
Engr. 403			3
Economics 212		3	
Civil Engr. 451	3		
Engr. 311-12	3	3	
	19	19	19

COURSES IN ELECTRICAL ENGINEERING

Undergraduate

211-12-13. *Fundamentals of Electrical Engineering.* (8) Introduction to electrical theory, including electrical units, direct current circuits, magnetic circuits, induced and generated emf., circuits containing resistance, inductance and capacitance, and electrostatic and magnetostatic fields. Three hours per week the first two quarters and two hours per week the last quarter. Prerequisite: Mathematics 161-2-3.

233. *Direct Current Machinery Laboratory.* (1) Laboratory experiments paralleling the theory of Electrical Engineering 311, taken concurrently with 311. One laboratory period per week. Fee $2.00.

301-02-03. *Elements of Electrical Engineering.* (9) Direct and alternating current theory. Direct and alternating current generators and motors, transformer theory, the amplidyne and synchro. For non-majors, Prerequisite, Math 262; Physics 221-22-23. Three lecture periods and one laboratory period. Fee $2.00.

311. *Direct Current Machinery.* (3) Basic theory of generator and motor action; dynamo magnetization curve; armature windings and armature reaction; voltage characteristics. Direct current generator; generation and control of e.m.f.; performance characteristics of shunt and compounds types; parallel operation. Direct current motor; counter e.m.f., speed and torque characteristics; starting, reversing and speed control; performance characteristics of series, shunt and compound types. Starters and controllers, losses and efficiency of generators and motors. Prerequisites: E. E. 211-12-13. Three lecture periods.

321-22. *Alternating Current Measurements Laboratory.* (2) Laboratory experiments paralleling the theory of 351. One laboratory period per week. Fee $2.00.

351-52. *Alternating Current Theory.* (6) Instantaneous and effective currents, voltage, power, complex numbers, vector algebra, series and parallel circuits, resonance, network theorems, circle diagrams, balanced and unbalanced polyphase circuits, fourier series, and non-sinsusoidal voltages and currents. Introduction to Heaviside notation. Prerequisite: E. E. 211-12-13; Mathematics 263. Three lecture periods.

361-62. *Electronics.* (6) A study of electron ballistics thermal and high field emission with application to the cathode ray tube and vacuum tubes. The diode and multi-element tubes, rectifiers and amplifiers, including ripple factor and feedback, large signal amplifiers and distortion, gas tubes. Three lecture periods. Prerequisites: E. E. 351-52.

EE 363. *Introduction to Electrical Transients.* (3) Direct and alternating current transients in electrical circuits. Spectrum coefficient calculations by means of the fourier integral. Classical and transform solution of problems. Three hours lecture. Prerequisite: EE 352—Math 462.

372. *Electronics Laboratory.* (1) Experimental determination of the operating characteristics of the diode, triode and multigrid vacuum tube circuits, cathode ray oscilloscope, circuits using gas-filled tubes and photo-tubes. Take concurrently with E. E. 362. One two-hour laboratory period per week. Fee $3.00.

373. *Electrical Networks.* (3) Kirchoff's laws. Mesh and node analysis. Network Theorems. Symmetrical and Asymmetrical T and pi networks. Bridge circuits.

383. *Electrical Networks Laboratory.* (1) Laboratory experiments paralleling the theory of E. E. 373. One laboratory period per week. Fee $2.00.

411-12-13. *Alternating Current Machine Theory.* (9) Theory of the transformer, polyphase and single phase motors, synchronous motors, alternators and converters. Prerequisites: E. E. 233-311, 351-52, 321-22. Three lecture periods.

414-15-16. *Alternating Current Machine Laboratory.* (3) Laboratory experiments paralleling the theory of E. E. 411-12-13. One two-hour laboratory period. Fee $2.00.

421-22-23. *Communication Engineering.* (6) A study of the principles of communication systems. The Fourier integral. Pole-zero method of circuit-behavior analysis. Resonance, infinite lines and reflection. Filters and equalizers. Impedance transformation and impedance matching by means of stubs. Modulation and demodulation.

424-25-26. *Communication Engineering Laboratory.* (6) Laboratory experiments paralleling the theory of E. E. 421-22-23. One four-hour laboratory per week. Fee $2.00.

441. *Power Transmission Lines.* (3) Inductance and capacitance of transmission lines. Long line equations. Steady state operation of transmission lines, circle diagrams of transmission lines. Three lecture periods.

442. *Electrical Power Networks.* (3) Solution of circuits by the methods of symmetrical components. Sequence impedances of power equipment. Determination of fault current in electrical systems. Three lecture periods.

443. *Power System Stability.* (3) The operation of power systems under abnormal conditions. Switching and lighting disturbances, transient stability, traveling waves and surge impedances. Three lecture periods.

444. *Electrical Machine Design.* (3) Principles of design of D C Machinery including complete design problems. Prerequisites: E. E. 231-352. Two one-hour lectures and one computation period.

445. *Electrical Machine Design.* (3) Principles of design of the transformer and induction motor including complete design problem. Prerequisites: E. E. 411-12. Two lecture periods and one computation period.

446. *Electrical Machine Design.* (3) Principles of design of A C Generators, synchronous converters, including complete design problem. Prerequisites: E. E. 411-12-13. Two one-hour lectures and one computation period.

EE 450. *Senior Project.* (3) A technical paper on a special topic in Electrical Engineering. Prerequisites: Senior Standing.

453-54-55. *Ultrahigh Frequency Engineering.* (9) A general study of the techniques associated with ultrahigh frequency systems. Prerequisites: Math 462-63; E E 363. Three lecture periods.

471. *Industrial Electronics.* (3) Theory and operation of commercial industrial electronic equipment, with special reference to the practical applications. Three lecture periods.

472. *Industrial Control Equipment.* (3) Fundamental control circuits and operation. Basic types of power and control relays for power systems and industrial applications. Three lecture periods.

E E 473. *Fundamentals of Servomechanisms.* (3) A study of elementary control systems. Viscous and error-rate damping. Integral control. Transfer function analysis. Prerequisites: E E 363-472.

DEPARTMENT OF MECHANICAL ENGINEERING

JAMES A. PARSONS, JR., *Acting Head*

The mechanical engineer is concerned with the design, construction, selection, operation, and maintenance of machines, whether constituting running or stationary equipment. His services are thus involved directly or indirectly wherever machines or mechanical equipment are made or used. Engines and turbines together with their associated equipment for the generation of power by steam, hydro or internal-combustion processes in stationary or transportation services, are of particular concern to the mechanical engineer in the power field. Yet, while power generation is basic and important, it is essential to recognize the even greater field of power utilization for transportation as in ships, aircraft, rail and highway vehicles, as well as in transport and conveyor systems, and through the use of machine tools in modern manufacturing processes. The branches of mechanical engineering are, indeed older than the field of power generation. The mechanical engineer has always been concerned with production, wherever hand tools, machine tools or process equipment are employed. There are, thus, an almost limitless number of problems and opportunities in the better design, utilization, operation, and maintenance of such apparatus.

The young man entering engineering will find ample opportunity for the exercise of his best abilities not only in one of the above mentioned branches of the profession but also, if he prefers to follow them, in the operating, management, sales activities of industry. Minimum quarter hours required for Bachelor of Science degree in Mechanical Engineering are 229.

Metallurgical Engineering Option for Mechanical Engineers

Nine hours of physical metallurgy are required of all mechanical engineers. These include Fundamentals of Physical Metallurgy 211, Physical Metallurgy 322 and Metallography 333. In addition Mechanical engineers may elect twelve hours of mechanical metallurgy including Foundry Theory 313, Foundry Practice 323, Advanced Foundry Theory 451 and Advanced Foundry Practice 461. The option is completed with Application Metallurgy 413 and a senior project in Metallurgy 450. All courses in Mechanical Metallurgy are based upon Metal Processing designed to prepare engineers for the rapidly developing foundry industry. The Foundry Educational Foundation is encouraging engineering students to enter this branch of industry where opportunities for engineers capable of assuming supervisory positions are significant both in quantity and quality.

CURRICULUM IN MECHANICAL ENGINEERING

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Mathematics 161-2-3	5	5	5
English 101-2-3	3	3	3
Chemistry 111-12-13	4	4	4
Engr. 111-12-13	3	3	3
*Shop Practice 101	3	3	
Engr. 123		3	
Engineering 101-2-3	1	1	1
Air Science I	1	1	1
Phys. Ed. 11-12-13	1/3	1/3	1/3
	20 1/3	20 1/3	20 1/3

Sophomore Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 211	3		
Mathematics 261-62-63	5	5	5
Physics 221-22-23	4	4	4
Engr. 211-12	3	3	
Engr. 202-3		4	4
Mech. Engr. 312	3		
Air Science 11	1	1	1
Speech 202-3		3	3
Phy. Ed. 20's to 50's	1/3	1/3	1/3
Engr. 221			3
	19 1/3	20 1/3	20 1/3

* Mechanical Engineering majors may elect any two of the following shop courses: Foundry 101-2, Metal Bench Work 101, Sheet Metal 101-2.

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Engr. 342-43	3	3	
Sociology 302		3	
Engr. 301	3		
Mech. Engr. 302-3		3	3
Mech. Engr. 311			3
Met. Engr. 322	3		
Engr. 311-12	3	3	
Mech. Engr. 333			3
Mech. Engr. 341-42-43	3	3	3
Mathematics 462	3		
*Electives		3	3
Met. Engr. 333			3
	18	18	18

Senior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Economics 211	3		
Elect. Engr. 301-2-3	3	3	3
Civil Engr. 442		3	
Mech. Engr. 452-53		3	3
Mech. Engr. 411-13-23	3	3	3
Mech. Engr. 403-32-42	3	3	3
Mech. Engr. 450			3
Civil Engr. 451	3		
*Electives	3	3	3
Engr. 403			3
	18	18	21

COURSES IN MECHANICAL ENGINEERING

Undergraduate

302. *Thermodynamics.* (3) Energy relations of one-dimensional steady flow of compressible fluids applied to the DeLaval nozzle, smiple orifice, and long pipe, simple single-stage impulse turbine; ideal power cycles; thermodynamics and processes of moist air; and other application. Prerequisite: Engr. 301. Three lecture periods.

303. *Thermodynamics.* (3) Application of principles of thermodynamics to selected problems of power production, heat transfer, fluid flow of a compressible medium, cycle analysis. Prerequisite: Mech. Engr. 302. Three lecture periods.

311. *Heat Power Engineering.* (3) A study of the principles involved in the utilization of heat in the steam boiler, steam turbine, and power plant auxiliaries; theory of heat transfer; fuels and combustion. Prerequisites: Math. 261-2-3. M. E. 302. Three lecture periods.

312. *Pattern-Making.* (3) The fundamental operations in sheet metal practice; developing and laying out patterns, shop practice in the use of sheet metal working tools and machines. One lecture period and four laboratory periods. Fee $2.00.

333. *Advanced Machine Shop Practice.* (3) Experiments on machine tool performance, tool and fixture design, shop management and production problems. One lecture period and four laboratory period. Fee $2.00.

341. *Kinematics.* (3) Analysis of mechanisms. A study of instantaneous centers, velocities, accelerations, and forces in plane mechanisms both analytical and graphical. Prerequisites: Math 263, Engr. 212 and Engr. 203. One lecture period. Two laboratory periods.

342. *Machine Elements.* (3) A study of rolling and sliding contact including belts, chains, cams and tooth gearing in plain and epicyclic train. Introduction to the design of machine elements. Prerequisites: Mech. Eng. 341. One lecture period. Two laboratory periods.

343. *Machine Design.* (3) The design of machine parts including shafting, gears, brakes, clutches, bearings, (sliding and anti-friction), springs, flywheels and frames. Prerequisites: Mech. Eng. 342. Three lecture periods.

401. *Fuels and Lubricants.* (3) Laboratory practice in the analysis of solid, liquid and gaseous fuels and flue gas, followed by a short boiler test; lubricating oil tests, such as fire, flash, carbon residue, viscosity, corrosion and specific gravity. One lecture and four laboratory periods. Fee $5.00.

403. *Heat and Air Conditioning.* (3) Theory design and installation of hot air, direct and indirect steam, hot water and fan heating systems; central heating and temperature control; air distribution, humidity control and conditioning equipment. Prerequisites: M. E. 303. Three lecture periods.

411. *Steam Engineering I.* (3) Study of steam boilers and turbines; (steam generators and prime movers with emphasis on the application of thermodynamic principles). Operation and economics of power plants. Prerequisite: M. E. 311. One lecture and four laboratory periods.

412. *Steam Engineering II.* (3) Laboratory practice and study of centrifugal and reciprocating pumps; force induced draft fans; feed water heaters, pumps and softening equipment; coal conveyors; ash handling equipment; flash tanks. One lecture and two laboratory periods.

413. *Steam Engineering III.* (3) Tests for determining the economy, efficiency, and operating characteristics of steam and gas engines, steam turbines, pumps, boilers and other plant equipment. Standard practice is followed the power test code of the American Society of Mechanical Engineers being used as a laboratory menual. Six laboiatory periods.

421. *Machine Design.* (3) The proportioning of machine elements by the application of mechanics and the principles of strength of materials modified by pratical considerations, together with an elementary study of friction and lubrication. Prerequisite: M. E. 343. One lecture period. 1-2 Lab. periods.

422. *Machine Design.* (3) The actual design of a simple machine, including making of the necessary calculations, detail and assembly drawings. Prerequisite: M. E. 421. Three laboratory periods.

423. *Steam Plant Design.* (3) A general plant layout is made for the equipment combination which will generate and distribute steam at the lowest cost for assigned conditions of load, location, type of fuel and other factors affecting design. Cost estimates required for alternate proposals; a term project. Six laboratory periods. Fee $2.00.

432. *Refrigeration Engineering.* (3) An application of general thermodynamic theory to mechanical refrigeration and its commercial applications, including consideration of refrigerants and their properties, compounds and multiple effect compression and absorption systems, and recent developments. Three lecture periods.

442. *Refrigeration Laboratory.* (3) Tests on refrigeration machinery; cooling towers, and air-conditioning equipment. Prerequisite: M. E. 432. Six laboratory periods.

450. *Senior Project.* (3) A written thesis on a project in the students major field of study.

452. *Internal Combustion Engines.* (3) The study of spark ignition and compression ignition engines; combustion, detonation, carburetion and fuels. Prerequisite: M. E. 303. One lecture period. Two laboratory periods.

453. *Internal Combustion Engines Laboratory.* (3) The testing of internal combustion engines; fuels and combustion products; brakes and dynamometers; lubricating oil tests. Prerequisite: M. E. 452. Three laboratory periods.

Note: Students choosing the metallurgy option in Mechanical Engineering may do so by devoting all electives in the junior and senior years to the following Metallurgical Engineering courses: 313, 323, 413, 415 and 461.

COURSES IN METALLURGICAL ENGINEERING

Undergraduate

313. *Foundry Theory.* (3) Principles and processes of foundry operations; foundry materials including sands, clays, fluxes and core binders, calcination, thixotropy and the mechanism of bonding. Principles of soil mechanics as applied to molding and core making. Prerequisite: Met. Engr. 322. Three lecture periods. (Formerly Foundry Engineering 313).

322. *Physical Metallurgy.* (3) Application of equilibrium diagrams to the physical and mechanical properties of metals and alloys and their heat treatment. Recrystallization and grain grown, a quick coordinated practical working understanding of the various types of steel with special application to engineering design is offered. Prerequisite: Met. Engr. 211. Three lecture periods. (Formerly Foundry Engineering 312).

323. *Foundry Practice.* (3) Testing of bonding material for foundry and core sands. Control of foundry sand mixtures. Melting, refining and alloying of aluminum and copper bearing alloys. Prerequisite: Met. Engr. 313. One lecture and four laboratory periods. Laboratory fee $2.00. (Form. F. E. 323).

333. *Metallography.* (3) Microstructure of alloys, as related to composition, thermal history and mechanical properties. Preparation of specimens. Principles and use of the metallurgical microscope. Prerequisite: Met. Eng. 322, Two lectures and two laboratory periods. (Formerly F. E. 462).

413. *Application Metallurgy.* (3) Selecting of Engineering alloys as a result of their ease of fabrication, resistance to high strength and toughness, wear and abrasion and other special physical and mechanical properties, alloy design, quality control and service behavior. Prerequisite: Met. Engr. 401. Three lecture periods.

450. *Senior Project.* (0) A written thesis on a project for Metallurgical Option majors. (formerly F. E. 450).

451. *Advanced Foundry Theory.* (3) Basic principles of solidification. The physics of gating and risering. Gases in liquid and solid metal, theory of hot tearing. Prerequisite: Met. Engr. 313. Three lecture periods. (Formerly F. E. 451).

461. *Advanced Foundry Practice.* (3) Electric melting practice. Induction furnace melting of low carbon stainless and tool steel, arc furnace melting and refining of carbon and lloy steels. Oxygen lance practice as applied to the production of low carbon stainless steel in the electric arc furnace. Prerequisite: Met. Engr. 323. One lecture and four laboratory periods. Laboratory fee $5.00. (Formerly F. E. 461).

**Courses now required in the metallurgy option in mechanical engineering.

QUARTER HOUR DISTRIBUTION OF 300 AND 400 COURSES IN THE SCHOOL OF ENGINEERING

Department	*Major*	*Non-Major*	*Major*	*Non-Major*	*Total*
	300 Courses		*400 Courses*		
Engineering					
1. Architectural	34	9	37	12	92
2. Civil	27	21	44	6	98
3. Electrical Power Option	25	30	45	9	109
Communications Option	25	30	45	9	109
4. Mechanical Power Option	30	24	36	9	99
Metallurgy Option	36	24	36	9	105
5. Industrial Education Industrial Arts Educational Curriculum	13	17	22	11	63
Aviation Education Curriculum	19	23	19	11	72

Notes

DEPARTMENT OF INDUSTRIAL EDUCATION

W. V. HARPER, *Head*

The major function of the Department of Industrial Education is to offer instruction for the purpose of preparing and upgrading teachers of industrial arts, vocational industrial education and aviation education. A curricula is provided for persons preparing to teach industrial arts and aviation education, and professional courses are provided for the upgrading of vocational industrial education teachers. The department also provides a terminal curriculum to train technicians for industrial pursuits.

The department of industrial education offers a graduate program of studies leading to the Master of Science degree in industrial education. This program is designed to improve future and in-service industrial teachers, supervisors, administrators and skilled workers. Graduates of industrial education curricula can pursue the industrial education graduate course of study providing they can succesfully meet all other requirements set forth by the Graduate School.

To qualify for the Bachelor of Science degree in Industrial Arts Education, the student must complete 212 quarter hours of which 63 quarter hours must be 300 and 400 level courses. A major is required to complete 93 quarter hours in Industrial Arts Education, of this number 27 quarter hours must be taken on the 300 and 400 levels. To qualify for the Bachelor of Science degree in Aviation Education, the student must complete 212 quarter hours, of which 72 must be in 300 and 400 level courses. A major is required to complete 39 quarter hours in Aviation Education, of this number 30 quarter hours must be taken on the 300 and 400 levels.

CURRICULUM IN INDUSTRIAL ARTS EDUCATION

Persons pursuing the industrial arts education curriculum will be qualified to teach industrial arts in general education programs in the schools of Tennessee. Successful completion of this curriculum leads to the degree of Bachelor of Science and qualifies one to obtain a state teaching certificate in the area of industrial arts. Professional industrial education courses are offered for the upgrading of Vocational-industrial education teachers and persons who are qualifying for certification to teach trade and industrial subjects.

CURRICULUM IN AVIATION EDUCATION

The curriculum in aviation education is designed to meet requirements of the Tennessee State Department of Education for certification as a public school teacher of aviation education. It covers material in the five basic areas as follows:

1. Theory of Flight—Why the airplane flies
2. Flight Techniques—How the airplane is flown
3. Meterology—The problem of weather
4. Navigation—How to get there
5. Specialized training—Skilled trade for industry

CURRICULUM IN VOCATIONAL-TECHNICAL TRAINING

Vocaional Technical-Training is organized to meet the demand for technically trained personnel necessitated by the increasing industrial development. The laboratories, classrooms, and shops of the School of Engineering are utilized for this training.

Terminal programs are two years in length and are offered for the purpose of (a) meeting the needs of persons who prefer to take training leading to immediate employment; (b) training for positions which occupy an area between the skilled crafts and highly scientific professions. It should be of interest to and effectively serve the following:

1. High school graduates who for financial or other reasons cannot devote four years or more to study.

2. High school graduates who have acquired a good general educational background, and desire to take concentrated training to enter a technical field of their special interest.

3. High school graduates who have had industrial experience and who have found the particular occupation in which they are interested, but who need further training to advance in this field, and

4. High school graduates who possess the aptitude, ability, and interest to develop by actual going rather than by formal study alone.

Those who complete vocational technical training and who possess the necessary personal qualities of leadership should, with some experience be qualified to successfully become: (a) Production and Maintenance Supervisors in industrial plants, commercial printing or publishing houses, and servicing and repairing establishments, (b) Foremen of Building Construction and Repair Firms, (c) Civil Aeronautics Administration Licensed Aircraft and Engine Mechanics, (d) Engineering Aides and Craftsmen and other skilled industrial workmen.

Certificates for vocational technical training will be granted those who satisfactorily complete the respective technical training curricula which includes one successful period of not less than 300 clock hours of on-the-job experience in the field in which the student is concentrating.

The vocational technical training curriculum is so arranged that many of the courses taken can be credited in other four-year curriculums of the School of Engineering should the student elect to work towards a degree after the completion of the certificate requirements.

All students enrolled in vocational technical training will be required to purchase or furnish an approved minimum list of tools based upon the major area of concentration.

INDUSTRIAL ARTS-EDUCATION CURRICULUM

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 101-2-3	3	3	3
Engr. Drawing 101-2-3	3	3	3
Woodworking 101-2-3 or 111-12-13	3	3	3
Mathematics 131-2-3	3	3	3
Health 151	3		
Art 102; 133		3	3
Phys. Educ. 11-12-13	⅓	⅓	⅓
Air Science 151-2-3	1	1	1
Engineering 101-2-3	1	1	1
	17⅓	17⅓	17⅓

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Social Studies 114			3
Electricity 101-*2-3	3	3	3
Psychology 242-3; 312	3	3	3
Educ. 201; 301; 387	3	3	3
Indus. Educ. 331-2	3	3	
Indus. Educ. 311	3		
Health 212		3	
Mathematics 200			3
Shop Electives	3	3	3
	18	18	18

Sophomore Year	*Quarter Credit Hours*		
Name of Course	*I*	*II*	*III*
English 211-12-13	3	3	3
Engr. Drawing 211	3	3	3
Indus. Educ. 12-13	3	3	3
Sheet Metal 101-2-3	3	3	3
Social Studies 111-12-13	3	3	3
Physics 211-12-13	4	4	4
Phy. Educ. 20's to 50's	⅓	⅓	⅓
Air Science 251-2-3	1	1	1
	17⅓	17⅓	17⅓

Senior Year	*Quarter Credit Hours*		
Name of Course	*I*	*II*	*III*
Psychology 463	3		
Education 462			3
Industrial Education 471; 450; 412	3	3	3
Indus. Educ. 472		6	
Industrial Arts 401	3		
Shop Electives	3	3	3
Electives**	6	3	6
Philosophy 323		3	
Education 371			3
	18	18	18

* Electrical Appliance Servicing 101 may be substituted for Electricity 101.

AVIATION EDUCATION CURRICULUM

Freshman Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
English 101-2-3	3	3	3
Engr. Drawing 101-2-3	3	3	3
Aero Mechanics 101-2-3	3	3	3
Mathematics 131-2-3	3	3	3
Engr. Orientation 101-2-3	1	1	1
Air Science 151-2-3	1	1	1
Aviation Educ. 111	3		
Health 151		3	
Art 133			3
Phys. Educ. 11-12-13	⅓	⅓	⅓
	17⅓	17⅓	17⅓

Sophomore Year	*Quarter Credit Hours*		
Name of Course	*I*	*II*	*III*
English 211-12-13	3	3	3
Engr. Drawing 211	3		
Aero Mechanics 201-2-3	3	3	3
Physics 211, 212, 213	4	4	4
Social Studies 111-12-13	3	3	3
Air Science 251-2-3	1	1	1
Aviation Educ. 202-3		3	3
Phy. Educ. 20's to 50's	⅓	⅓	⅓
	17⅓	17⅓	17⅓

Junior Year	*Quarter Hours Credit*		
Name of Course	*I*	*II*	*III*
Social Studies 114			3
Psychology 242-243-312	3	3	3
Education 201-301-387	3	3	3
Health 212		3	
Mathematics 200	3		
Shop Electives	3	3	3
Aviation Educ. 321-22-23	3	3	3
Aviation Educ. 311-12	3	3	
Education 342			3
	18	18	18

Senior Year	*Quarter Credit Hours*		
Name of Course	*I*	*II*	*III*
Psychology 463			3
Education 462	3		
Shop Electives	3	3	3
Electives Restricted to 300 and 400 level Courses	6	3	9
Aviation Educ. 471-450-403	3	3	3
Aviation Educ. 472		6	
Education 371	3		
Philosophy 323		3	
	18	18	18

CURRICULUM IN VOCATIONAL TECHNICAL TRAINING

The Curriculum in Vocational Technical Training is arranged for several options to satisfy the interests of the students. The options are:

Group I
Foundry
Machine Shop
Sheet Metal
Welding

Group II
Masonry
Carpentry
Plumbing

Group III
Radio and Electronics
Electricity

Group IV
Aero Repairs
Auto Repairs

Group V
Heating
Air Conditioning
Refrigeration

Group VI
Printing

OPTONS

First Year *Groups I, IV, V, VI* *Name of Course*	*Quarter and Credit Hours* *I*	*II*	*III*
English 101-2-3	3	3	3
Mathematics 131-2-3	3	3	3
Engr. Drawing 101-2-3	3	3	3
Phys. Educ. 11-12-13	⅓	⅓	⅓
AF-ROTC 151-2-3	1	1	1
*Major Shop 101-2-3	3	3	3
*Allied Shop 101-2		3	3
Chemistry 111	4		
	17⅓	16⅓	16⅓

First Year *Groups II, III* *Name of Course*	*Quarter and Credit Hours* *I*	*II*	*III*
English 101-2-3	3	3	3
Mathematics 131-2-3	3	3	3
Engr. Drawing 101-2-3	3	3	3
Phys. Educ. 11-12-13	⅓	⅓	⅓
AF-ROTC 151-2-3	1	1	1
*Major Shop 101-2-3	3	3	3
*Allied Shop 101-2-3	3	3	3
	16⅓	16⅓	16⅓

Second Year *Group I* *Name of Course*	*Quarter and Credit Hours* *I*	*II*	*III*
*Major Shop 201-2-3	6	6	6
*Allied Shop 101-2		3	3
Physics 211	4		
Foundry Engr. 311	3		
Business Law 311			3
Accounting 311		3	
Sociology 211-301 313	3	3	3
AF-ROTC 251-2-3	1	1	1
	16⅓	16⅓	16⅓

Second Year *Group II* *Name of Course*	*Quarter and Credit Hours* *I*	*II*	*III*
*Major Shop	6	6	6
*Allied Shop	3	3	3
Phys. Educ. 20's to 50's.	⅓	⅓	⅓
Sociology 211-301-312	3	3	3
Business Law 311			3
Vocational Tech 201 (Mechanics of Materials)	3		
Accounting 211		3	
AF-ROTC 251-2-3	1	1	1
	16⅓	16⅓	16⅓

Cooperative Work Experiences

(On-The-Job-Experience)

Vocational Tech. Training 200 — 15 Quarter Hours Credit

(300 Clock Hours Minimum)

Second Year *Group III* *Name of Course*	*Quarter and Credit Hours* *I*	*II*	*III*
*Major Shop 210-2-3	6	6	6
*Allied Shop 101-2-3	3	3	3
Phys. Educ. 20's to 50's.	⅓	⅓	⅓
Sociology 211-301-313	3	3	3
Accounting 211	3		
Business Law 311		3	
Typing 211			3
AF-ROTC 251-2-3	1	1	1
	16⅓	16⅓	16⅓

Second Year *Group IV* *Name of Course*	*Quarter and Credit Hours* *I*	*II*	*III*
*Major Shop 210-2-3	6	6	6
*Allied Shop 101-2-3	3	3	3
Business Law 311		3	3
Business Law 311		3	
Accounting 211	3		
Typing 211			3
Sociology 211-301-313	3	3	3
AF-ROTC 251-2-3	1	1	1
Phys. Educ. 20's to 50's.	⅓	⅓	⅓
	16⅓	16⅓	16⅓

Cooperative Work Experiences

(On-The-Job-Experience)

Vocational Tech. Training 200 — 15 Quarter Hours Credit

(300 Clock Hours Minimum)

Second Year *Group V* *Name of Course*	*Quarter and Credit Hours* *I*	*II*	*III*
*Major Shop 201-2-3	6	6	6
*Allied Shop 101-2-3	3	3	3
Physics 221	4		
AF-ROTC 251-2-3	1	1	1
Phys. Educ. 20's to 50's.	⅓	⅓	⅓
Sociology 211-301-313	3	3	3
Accounting 211		3	
Business Law 311			3
	17⅓	16⅓	16⅓

Second Year *Group VI* *Name of Course*	*Quarter and Credit Hours* *I*	*II*	*III*
English 301-2-3	3	3	3
*Major Shop 201-2-3	6	6	6
AF-ROTC 251-2-3	1	1	1
Phys. Educ. 20's to 50's.	⅓	⅓	⅓
Art 101-131-121 or 122 or 123	3	3	3
Business Law 311		3	
Business Organization & Finance 331	3		
Accounting 211			3
	16⅓	16⅓	16⅓

Cooperative Work Experiences

(On-The-Job-Experience)

Vocational Tech. Training 200 — 15 Quarter Hours Credit

(300 Clock Hours Minimum)

COURSES IN AVIATION EDUCATION

Undergraduate

111. *Model Building.* (3) A course specifically designed for prospective teachers of aviation education. It deals with the structure and design for various model assembly. Six laboratory hours. Fee $2.00.

202. *Aircraft Familiarization.* (3) Designed to acquaint the student with the operation, parts and assembly and routine inspection of light aircraft.

203. *Implications of Aviation.* (3) Deals with the social, geographic, economic and political implications of the air age.

311. *Communications.* (3) The development of methods of communication, radio navigation, morse code, etc.

312. *Civil Air Regulations.* (3) Federal, State and local safety regulations with its application to aviation.

321. *Theory of Flight and Engines.* (3) The laws of nature as applied to aviation, also the principles, familiarization and operations of the internal combustion and jet engines.

322. *Aerial Navigation.* (3) The principles involved in scientifically going from one place to another by means of air travel. Practical experience is offered in this course.

323. *Elementary Flight.* (3) How to fly with actual flight experience and instruction. Ten clock hours of dual flight instruction. One lecture and two laboratory periods. Laboratory fee $2.00 plus fuel expenses.

401. *Link Trainer Operation.* (3) The principles involved in the Link Trainer, its operation and maintenance.

402. *Advanced Flight.* (3) Supervised solo with dual flight instruction and experience. One lecture and two laboratory periods. Laboratory fee $2.00 plus fuel expenses.

403. *Meterology.* (3) General effects of weather phenomena. Special study of its relation to aviation.

412. *Aerodynamics.* (3) A general course dealing with the properties of air flow, air foil characteristics, wing theory, parasite drag, introduction of stability and control, and wind tunnel experiments.

413. *Aviation Education 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.

450. *Senior Project.* (3) All seniors are required to select and execute a project under the supervision of his major advisor to be approved by the Chairman of the School of Engineering. It may include the development of a complete course outline or research and compilation of a subject within the field of a student's interest.

471. *Materials and Methods for Aviation Education.* (3) A detailed study of selected teaching aids, effective methods of preparing and using patterns for blackboard drawings, charts, diagrams, posters, audio visual aids, design and construction of models, static and dynamic selected for use in specific teaching units.

472. *Directed Practice Teaching in Aviation Education.* (6) Observation of aviation education classes of all types. Preparation of lesson plans and directed teaching in at least three classes. Prerequisite: All required subjects in junior year of aviation education curriculum. Open only to majors in the Department of Aviation Education.

COURSES IN INDUSTRIAL EDUCATION

Undergraduate

201-2-3. *Basic Experience in Trade and Industrial Education.* (9) Effective methods of teaching and the use of specialized instructional aids and devices.

311. *History and Philosophy of Industrial Education.* (3) History and development of Industrial Education; social and economic reasons for present educational movements; types of modern industrial schools and courses; apprenticeship systems and training of workers in modern industry.

212. *Architectural Drafting.* (3) This course is designed to give instruction in the fundamentals of Drafting of small building constructions and plans such as; schoolshops, home garages, and small homes.

212. *Advanced Architectural Drafting.* (3) This course is a continuation of Industrial Education 212 (Architectural Drafting) and gives instruction and practices of drafting details in small construction.

321-2-3. *Part-time Program in Diversified Occupations.* (9) Principles of organizing and promoting such programs, analyzing needs, preparing schedules of processes, selecting materials for related-subjects teaching, and carrying on supervised study and coordination.

331. *Shop Organization and Management.* (3) Securing equipment, making inventories and arranging for proper storage of materials, supplies and tools. Typical shop layouts, arrangements for tool rooms, stock rooms and storage facilities; keeping records and accounts. Personnel management of students and the organization of students' participation in shop management and safety.

332. *Industrial Aids.* (3) This course is designed to motivate and teach industrial education students to use, design and construct teaching aids for industrial classrooms and shops. Students are actually required to construct three-dimensional teaching aids.

333. *Materials and Methods for Shop and Related Subjects Teachers.* (3) Detailed study, combined with actual operation of each of the several standard types of projects, lesson planning for teaching specific units involving audio-visual aids; maintenance, and repair of projection equipment. The design and construction of models, static and dynamic selected for use in specific teaching units.

400. *Elementary Driver Education.* (3) Set up to teach the beginning driver to drive according to standards of the American Automobile Association. Six lecture and laboratory periods. Laboratory Fee, $2.00.

410. *Teaching, Methods in Driver Education.* (3) Designed to prepare teachers, administrators and supervisors of driver education. It involves practice in both class-room and behind-the-wheel phases of the program. Prerequisite: 400. Six lecture and laboratory periods. Laboratory Fee, $2.00.

411. *Foremanship Training by the Conference Method.* (3) The use of the conference as an instructional device; special methods, techniques, and procedures to be used in foreman training; duties and responsibilities of the typical industrial foreman. How to follow up foreman conferences by means of foremen's clubs, plant educational programs.

412. *Job Analysis.* (3) The principles of job analysis for the purpose of listing teaching content in trade and industrial education. Practice in analyzing trade jobs for production, auxiliary and related technical content; instructional difficulties and progression factors.

413. *Job Analysis.* (3) A continuation of 412. Analytical study of the related knowledge necessary for certain type jobs and typical industries. Emphasis on development of the best instructional methods for teaching industrial subjects.

431-2. *Curriculum Building in Trade and Industrial Subjects.* (6) Arranging course material in trade subjects; following up results of job analyses, preparing checking sheets and individual job sheets in both trade and related subjects. Prerequisite: 412.

435-6-7. *Problems in Trade and Industrial Teaching.* (9) Individual or group work on assigned or chosen problems involving the preparation, use and evaluation of instructional material for use in vocational industrial classes. Research involving compilation and study of student records, employment placement, job progress, earning, wage scales and similar items may also be carried out.

450. *Senior Project.* (3) All seniors are required to select and execute a project under the supervision of their major advisor to be approved by the Chairman of the School of Engineering. It may involve the designing and making of a project complete with drawing, pictures, specifications and detail date involved in its construction; or a research and compilation of a subject within the field of the students' interest.

471. *Methods of Teaching Industrial Education.* (3) Lesson planning, techniques of the demonstration, plans for related instruction; and methods of testing are studied.

472. *Directed Teaching.* (6) This course provides an opportunity for each prospective industrial education teacher enrolled at this institution to engage in the actual observation and teaching of industrial education classes in the secondary schools in this state.

Graduate

502-3. *Thesis Writing.* (6) Involves the actual writing of the thesis.

511-12-13. *Administration and Supervision of Industrial Education.* (9) Fundamental principles of vocational education and their application, objectives, methods and policies. Special emphasis on the relationship, between public vocational education and general education; the methods of securing cooperation of trade and labor organizations; modern apprentice programs and the administration and supervision of various types of schools and classes under the Federal Vocational Education Act.

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

541. *Improving Teachers In-Service.* (3) Study on seminary basis of problems of improving teachers in service; problems of coordination 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 Adminitsration and Management.* (3) The preparation and use of records, reports and rating sheets. Planning shop layouts of providing for equipment and maintenance for vocational classes.

COURSES IN INDUSTRIAL ARTS

Undergraduate

301. *Art Metal.* (3) Projects are designed and constructed of brass, copper, aulminum, pewter and silver. Projects are selected that involve the use of hand processes and simple machine work in forming heat treating, soldering, spinning, etching, polishing and finishing art metal. Six combined lecture and laboratory periods. Laboratory fee $2.00.

302. *Leather Craft.* (3) Deals with the sources and procurement of tools and materials for the construction of leather projects. The processes of tooling, modeling, dyeing and lacing of leather are studied. Six combined lecture and laboratory periods. Laboratory fee $2.00.

303. *Plastics.* (3) Plastic materials and their application to industrial arts shop work; principles and techniques of constructing plastic projects. Six combined lecture and laboratory periods. Laboratory fee $2.00.

401. *Industrial Arts Design.* (3) The application of the fundamental principles of design and construction to all types of school shop projects. Working drawings are made of projects. Six combined lecture and laboratory periods. Laboratory fee $2.00.

402. *Wood and Metal Finishing.* (3) Different kinds of finishes applicable to both wood and metal are studied. Hand painting, varnishing, rubbing, polishing and using power spray equipment will be emphasized. Six combined lecture and laboratory periods. Laboratory fee $2.00.

Graduate

*501. *Advanced Drafting Projects.* (3) Designed to enable qualified students to select individual problems in drawing, such as: architectural planning, drafting, specifications and estimations; problems in the calculating and designing various types of gear tooth forms and general machine construction. Six combined lecture and laboratory periods. Laboratory fee $2.00.

*502. *Advanced Metal Working Projects.* (3) All types of advanced metal projects will be designed and constructed. Six combined lecture and laboratory periods. Laboratory fee $2.00.

*503. *Industrial Handicrafts.* (3) Individual projects in art metal, plastics and leather are made. Emphasis is placed upon original design and production methods. Six combined lecture and laboratory periods. Laboratory fee $2.00.

*511. *Advanced Applied Electricity.* (3) Designed to assist industrial education teachers to evaluate and construct electrical projects for instructional purposes. Six combined lecture and laboratory periods. Laboratory fee $2.00.

*512. *Furniture and Cabinet Construction.* (3) Advanced projects in woodturning, cabinet construction and furniture will be constructed. Six combined lecture and laboratory periods. Laboratory fee $2.00.

*513. *Aircraft Power Plant.* (3) Complete construction and maintenance of small modern aircraft power plant will be studied. Six combined lecture and laboratory periods. Laboratory fee $2.00.

COURSES IN AERO MECHANICS

Undergraduate

101. *Aircraft Basic Science.* (3) Covers those subjects which are generally regarded as essential for both aircraft mechanics and aircraft engine mechanics. This includes foundation in: theory of flight, airfoil design, blue print reading, aircraft materials and standards, internal combustion engine principles; and fundamentals of aircraft electrical and ignition systems. Six lecture and laboratory periods. Laboratory fee $2.00.

102. *Elementary Engines.* (3) Chemistry of combustion. Two and four stroke cycle engine design. Basic engine parts including their mechanical functions and requirements. Carburetion and fuel induction system design, magneto and ignition system design and operation; and engine firing orders and ignition timing. Heat transfer, cooling and lubrication. Six lecture and laboratory periods. Laboratory fee $2.00.

102. *Elementary Aircraft.* (3) Aircraft structural designs and reuqirements. Welded steel tube, aluminum alloy and wood fuselage and wing structures; dope and fabric covering. Aircraft system design and requirements. Fuel, oil, and hydraulic system control mechanism design. Fabrication procedures for metal and composite structures. Six lecture and laboratory periods. Laboratory fee $2.00.

201. *Advanced Engines.* (3) Disassembling, cleaning and visual inspection procedure. Maintenance and inspection requirements of ignition and fuel induction systems. Maintenance technique for valve and actuating mechanism. Inspection, installation and tracking of fixed pitch wood propellers. Power calculations. Engine run-up operation and preflight checks. Prerequisites: 101-2. Six lecture and laboratory periods. Laboratory fee $2.00.

202. *Advanced Aircraft.* (3) Classification of repairs and alterations. Practical application of aircraft welding. Repair methods for tubular steel, fabricated sheet metal and wood structures. Requirements of aircraft dopes, protective coatings and refinishing materials. Spral painting. Fabrication of transparent plastic materials. Prerequisites: 101 and 103. Six lecture and laboratory periods. Laboratory fee $2.00.

203. *Engine Overhaul.* (3) Engine removal and handling safety precautions. Dimensional inspection of engine parts, magnetic particle inspection of steel parts, fluorescent penetrant and x-ray inspection of non-ferrous metal parts. Cylinder and crankcase assembly overhaul; accessory section overhaul. Subassembly, final assembly and final inspection. Installation of engine in aircraft, starting procedures; run-up and preflight check. Prerequisite: 201. Six lecture and laboratory periods. Laboratory fee $2.00.

301. *Airframe overhaul.* (3) Aircraft disassembly, repairs, alterations, recovering and refinishing. Aircraft system inspection, repair, and modification. Civil Air Regulations concerning aircraft repair, alteration and modification. Compliance of airworthiness directives. Making and reading drawings of repairs, alterations and modifications. Finding center of gravity location by weighing aircraft and by comparation methods. Inspection and overhaul of aircraft electrical systems, control surfaces, and control mechanisms, methods of splicing control cables, wood spars, and cap strips. Airplane assembly and final inspection for flight test. Prerequisite: 202. Six lecture and laboratory periods. Laboratory fee $2.00.

302. *Aircraft Engine Accessory Overhaul.* (3) Inspection and overhaul of float type carburetors, magnetos, battery ignition distributors. Starting motors, generators, voltage-current regulators, vacuum pumps and fuel, oil, and hydraulic pumps. Service adjustment requirements of pressure injection type carburetors. Servicing lead acid type aircraft batteries and auxiliary power units. Operation of machine tools and test equipment required in the overhauling of aircraft engine accessories. Installation and final inspection of accessories. Civil Air Regulations concerning accessory airworthiness. Prerequisite: 101. Six lecture and laboratory periods. Laboratory fee $2.00.

303. *Aircraft Propeller Fundamentals.* (3) Inspection servicing and making minor repairs of fixed pitch metal propellers, two position propellers, McCauley controllable and constant speed propellers, Hartzelle and Beech controllable pitch propellers, Aero products Aeromatic propellers, Hamilton standard hydromatic propellers and Curtis electric propellers. Civil Air Regulations concerning repairs and overhaul of aircraft propellers. Overhaul and maintenance of propellers governors and control devices. Bench work and shop practice; use of hand tools, test equipment, and propeller balance stand; and dynamic and static balance technique. Prerequisite: 101. Six lecture and laboratory periods. Laboratory fee $2.00.

401. *Airframe Maintenance.* (3) Repair and maintenance of fabric covered composite, tubular steel and sheet metal structures. Servicing and replacement of tires, wheels and brakes. Repairs and adjustments of aircraft electrical system and control units. Maintenance of landing gear mechanism, hydraulic system and essential units. Trouble shooting on live aircraft malfunction conditions. Repair and maintenance of control columns and control mechanism. Conducting 100-hour inspections and complying airworthiness directives. Civil Air Regulations concerning airframe repairs. Prerequisite: 301. Six lecture and laboratory periods. Laboratory fee $2.00.

402. *Power Plant Maintenance.* (3) General engine maintenance, malfunction problems on live engines. Repair and maintenance of carburetors, ignition systems, spark plugs, magnetos and battery ignition distributors, valve and valve operating mechanisms, cylinder assemblies, baffles; cowling and cooling systems. Engine mount structure and dynamic suspension maintenance and repairs. Adjusting fuel, oil and vacuum pressure regulators. Oil pump and lubrication system repairs. Field servicing aircraft propellers. Prerequisite: 203. Six lecture and laboratory periods. Laboratory fee $2.00.

403. *Aircraft Radio.* (3) Aircraft radio design, operation, installation and requirements. Repairs, adjustments and alignments of low frequency range receivers, crystal controlled receivers, crystal controlled transmitters, transceivers, and manual direction finding receivers. Antenna design and impendance matching. Repairs, adjustments, alignments and calibration of radio compass, omnirange, localizer and glide slope receivers. Transmitter frequency control methods and Federal Communication Commission regulations pertaining to repairs and operation of two-way radio. Electronic auto pilot design and operations; installation, repair, ground and flight calibration. Civil Aeronautics Technical Standard order requirements and Civil Air Regulations concerning radio and electronic installations. Prerequisite: Radio 111. Six lecture and laboratory periods. Laboratory fee $2.00.

COURSES IN AUTO MECHANICS

Undergraduate

101. *Assembling and Disassembling Engines.* (3) Familiarization of tools and equipment, care and operation of tools and equipment. Study of bolts, nuts, screws and threads. Engine design and principles, disassembly, cleaning and inspecting engine parts, mechanical principles, assembly of engines. Six lecture and laboratory periods. Laboratory fee $2.00.

102. *Engine Overhaul.* (3) Fitting and installing piston rings, inspecting and grinding valves, adjusting valve stem, clearance and adjusting spark plugs; inspecting, cleaning and adjusting ignition points. Inspecting and testing secondary wiring. Fitting and installing bearings. Inspection and testing crank shafts, valve timing, ignition timing, motor analysis. Prerequisite: 101. Six lecture and laboratory periods. Laboratory fee $2.00.

103. *Front End System and Brakes.* (3) Study and function of the front end systems; a complete study of the hydraulic and mechanical system. Six lecture and laboratory periods. Laboratory fee $2.00.

201. *Chassis Maintenance and Gas Welding.* (6) Maintenance processes, disassembly and construction; assembly and repairs of clutches, transmissions, over-drive, fluid drive and hydra-matic transmissions. Repairs and maintenance of universal joints and drive shafts. Principles and practices of gas welding as

applied to auto mechanics. Twelve lecture and laboratory periods. Laboratory fee $2.00.

202. *Engine Accessories, Carburetion and Lubrication.* (6) Study of functions and repair of starters, generators, ignition devices and engine accessories. Study of combustion and fuels. Study of function, repair and maintenance of lubrication system. Twelve lecture and laboratory periods. Laboratory fee $2.00.

203. *Auto Repairs and Servicing.* (6) Study of the function and operation of the automobile; minor and major trouble shooting, repair and maintenance. Twelve lecture and laboratory periods. Laboratory fee $2.00.

COURSES IN ELECTRICAL APPLIANCE SERVICING AND AIR CONDITIONING

Undergraduate

101. *Principles of Heating Appliances.* (3) Designed to acquaint the student with the fundamentals of electricity and the servicing of heating resistance appliances. Six lecture and laboratory periods. Laboratory fee $2.00.

102. *Servicing Motor Driven Appliances.* (3) Designed to acquaint the student with the theory and servicing of motor driven electrical appliances. Six lecture and laboratory periods. Laboratory fee $2.00.

103. *Domestic Refrigeration Servicing.* (3) Designed to acquaint the student with the theory of refrigeration and the use of tools in soldering and flaring, also compressor rebuilding. Six lecture and laboratory periods. Laboratory fee $2.00.

201. *Domestic Refrigeration Servicing.* (6) A study of the methods of transferring, removing and charging a system with refrigerants and converting from one system to another. Prerequisite: 103. Twelve lecture and laboratory periods. Laboratory fee $2.00.

202. *Compressor Rebuilding.* (6) A study of the methods of listing and rebuilding of reciprocating and rotary compressors, also refrigerant controls. Prerequisite: 201. Twelve lecture and laboratory periods. Laboratory fee $2.00.

203. *Commercial Refrigeration.* (6) The assembly, disassembly of commercial refrigeration equipment, also testing and inspection procedures. Prerequisite: 202. Twelve lecture and laboratory periods. Laboratory fee $2.00.

211. *Selection of Air Conditioning Equipment.* (6) A study of cooling and heating load calculations and the properties of air and the methods of treating it for human comfort. Prerequisite: 103. Twelve lecture and laboratory periods. Laboratory fee $2.00.

212. *Installation of Air Conditioning Equipment.* (6) A study of coded and non-coded installations. Location of units, cooling towers, and air conditioning controls. Prerequisite: 211. Twelve lecture and laboratory periods. Laboratory fee $2.00.

213. *Air Conditioning Servicing.* (6) A study of the methods of servicing air conditioning equipment and controls. Prerequisite: 212. Twelve lectures and laboratory periods. Laboratory fee $2.00.

COURSES IN ELECTRICITY

Undergraduate

101. *Elements of Electricity.* (3) The elementary principles of direct and alternating current generation, distribution and utilization in light, power and communication. Information concerning electrical laws and practices in an immediately usable form. Six lecture and laboratory periods. Laboratory fee $2.00.

102. *Residential Wiring.* (3) Practice in house wiring; calculating and determining the size of service and circuits; wiring symbols; methods and procedures of wiring; installation of electrical equipment and devices. Prerequisite: 101. Six lecture and laboratory periods. Laboratory fee $2.00.

103. *Generator and Motor Rewinding and Repairing.* (3) Practice in trouble-shooting, repairing and rewinding and alternating current machinery. Prequisites: 101. Six lectures and laboratory periods. Laboratory fee $2.00.

201. *Generator and Motor Rewinding and Repairing.* (6) This course is a continuation of Electricity 103. Twelve lecture and laboratory periods. Laboratory fee $2.00.

202. *Industrial Wiring.* (6) Designing and installing wiring systems for industrial and commercial buildings. Prerequisite: 101. Twelve lecture and laboratory periods. Laboratory fee $2.00.

203. *Lighting, Estimating, National Electrical Code.* (6) Elementary lighting theory, fixture selection and maintenance, theory and operation of fluorescent lights. Estimating materials. Rules and regulations as prescribed by the current National Electric Code. Prerequisite: 102. Twelve lecture and laboratory periods. Laboratory fee $2.00.

COURSES IN FOUNDRY

Undergraduate

101. *General Molding.* (3) A detailed study of the various types and methods of molding, such as: green sand molding, metal, centrifugal, novelty and building molds. Six lecture and laboratory periods. Laboratory fee $2.00.

102. *Cupola Theory and Practice.* (3) Methods and principles of cupola operation. A study of the various charges, combustion and alloying. Prerequisite: 101. Six lecture and laboratory periods. Laboratory fee $2.00.

103. *Non-Ferrous Castings.* (3) Theory of non-ferrous castings—aluminum base, copper base, and magnesium base alloys manufacturing processes and physical properties. Practice in molding and inspection; and in melting and casting various non-ferrous alloys. Prerequisites: 101. Six lecture and laboratory periods. Laboratory fee $2.00.

201-2-3. *General Foundry.* (18) These courses include the history of the cast metal industry in America, care and use of foundry tools and equipment, foundry cost and methods in classifications, sand control as a factor in quality control, influence of casting design on foundry practice; melting, molding and core making problems, foundry personnel and supervision, foundry occupational hazards and prevention, metallurgy of cast iron, application of cast metals as engineering materials, and elements of pattern design and construction. Prerequisites: 101. Twelve lecture and laboratory periods. Laboratory fee $2.00.

COURSES IN MACHINE SHOP

Undergraduate

101. *Fundamentals of Machine Shop.* (3) Fundamentals of shop mathematics, tool identification, proper methods and uses, tool classification, rules and scales. Six lecture and laboratory periods. Laboratory fee $2.00.

102. *Lathe Turning.* (3) Tree lathe nomenclature, chucking micrometer reading, simple turning, roughing, polishing. Lathe set up gigs and fixtures. Six lecture and laboratory periods. Laboratory fee $2.00.

103. *Lathe Gearing.* (3) Lathe maintenance, collets, turning between centers, shoulder turning, taper turning, threading, kirling and lathe drilling. Six lecture and laboratory periods. Laboratory fee $2.00.

201. *Drilling and Drill Bits.* (6) Safety nomenclature, drilling set up. Layout, counter sinking, counter boring, drill bits, speeds and feeds, drill bit grinding, care and operation. Twelve lecture and laboratory periods. Laboratory fee $2.00.

202. *Milling Machines.* (6) Nomenclature, maintenance set up, gigs and fixtures, gang milling, slotting, slab milling, cutter grinding, determining cutters for the job. Twelve lecture and laboratory periods. Laboratory fee $2.00.

203. *Shaper and Planer.* (6) Shaper tool making, gearing, determining stroke speed and feeds, parts nomenclature, dove-tail cutting, cutting keyways, reading shop drawings, job estimating, materials. Twelve lecture and laboratory periods. Laboratory fee $2.00.

COURSES IN MASONRY

Undergraduate

101. *Fundamentals of Bricklaying.* (3) The study of materials, care and use of tools, mortar making and spreading; laying bricks between vertical points, building piers. Six lecture and laboratory periods. Laboratory fee $2.00.

102. *Brick Construtcion.* (3) The construction of walls, steps and flues. Excavating. Six lecture and laboratory periods. Laboratory fee $2.00.

103. *Foundations, Construction.* (3) The study and construction of simple, spread and stepped footings; foundation walls and underpinning. Prerequisite: 101. Six lecture and laboratory periods. Laboratory fee $2.00.

201. *Advanced Brick Construction.* (6) The study of construction of chimneys, mantels, special wall designs, arches and bonds. Prerequisite: 101. Twelve lecture and laboratory periods. Laboratory fee $2.00.

202. *Fundamentals of Plastering.* (6) The study of common materials; care and use of tools. Mixtures and application. Prerequisite: 101. Twelve lecture and laboratory periods. Laboratory fee $2.00.

203. *Fundamental Concrete Work, Cement Finishing.* (6) The study of materials, care and use of tools. Application of concrete mixtures, form building. Construction of foundation walls, walks and floors. Prerequisite: 101. Twelve lecture and laboratory periods. Laboratory fee $2.00.

COURSES IN PLUMBING

Undergraduate

101. *Fundamentals of Plumbing.* (3) Plumbing defined; duties and responsibilities; classification of tools and materials; selection of tools and materials; development of simple tool handling techniques. Six lecture and laboratory periods. Laboratory fee $2.00.

102. *Pipe Connecting.* (3) Pipe forming, threading, joining cast iron joints, leading, sweating joints and fitting. Six lecture and laboratory periods. Laboratory fee $2.00.

103. *Plumbing Layout and Rough-In Work.* (3) Drainage assembly, ventilation, main vents, continuous vents, roughing-in water service. Application of water and air test, water treatment and purification. Prerequisite: 102. Six lecture and laboratory periods. Laboratory fee $2.00.

201. *Plumbing Fixture Installation.* (6) Determining the cost of labor and materials for installations of common plumbing fixtures. Assembly and study of fixtures and pumps. Prerequisite: 103. Twelve lecture and laboratory periods. Laboratory fee $2.00.

202. *Plumbing Maintenance.* (6) Maintenance and repair of water supply, drainage systems, water heaters and plumbing fixtures. Prerequisite: 201. Twelve lecture and laboratory periods. Laboratory fee $2.00.

203. *Plumbing Codes and Estimation.* (6) Estimating cost of labor and materials for installation of plumbing. Blueprint reading and laws governing plumbing regulations. Prerequisite: 202. Twelve lecture and laboratory periods. Laboratory fee $2.00.

COURSES IN PRINTING

Undergraduate

101. *Introductory Printing.* (3) Designed to acquaint the beginning student with the history of printing, type of classification, hand composition, proofing and proof-reading, make-up and composition and lock-up of simple job forms. Six lecture and laboratory periods. Laboratory fee $2.00.

102. *Platen Presswork.* (3) Skills are developed in the care and maintenance, register, make-ready and feeding of the platen presses. Prerequisite: 101. Six lecture and laboratory periods. Laboratory fee $2.00.

103. *Advanced Typography.* (3) Emphasis on the development of skills in the make-up, composition of book forms, newspaper, pamphlets, brochures and broadsides. Six lecture and laboratory periods. Laboratory fee $2.00.

201. *Linotype Keyboard Operation.* (6) Emphasis on correct keyboard fingering and everyday maintenance of the machine. Prerequisite: 101. Twelve lecture and laboratory periods. Laboratory fee $2.00.

202. *Cylinder Presswork.* (6) Care, maintenance, make-ready, and operational skills developed. Prerequisite: 101. Twelve lecture and laboratory periods. Laboratory fee $2.00.

203. *Cutting, Folding, Stitching, Peforating, Cost Findings and Estimating.* (6) Standard sizes, weights and proper uses of cover, card, book and bond papers are studied; the development of skills in the operation of the power paper cutter, folding machines, stitcher and perforator. Also copy fitting and estimating of the cost of production of all types of printed matter are studied. Prerequisite: 101. Twelve lecture and laboratory periods. Laboratory fee $2.00.

COURSES IN RADIO

Undergraduate

101. *Radio Fundamentals.* (3) Radio and electronics fundamentals. Foundation in radio theory and practice. Six lecture and laboratory periods. Laboratory fee $2.00.

102. *Radio Servicing.* (3) Repair, testing and alignment of radio receivers. Prerequisite: 101. Six lecture and laboratory periods. Laboratory fee $2.00.

103. *The Recording and Reproduction of Sound.* (3) Theory of sound recording on discs and tape. Prerequisite: 101. Six lecture and laboratory periods. Laboratory fee $2.00.

111. *General Radio.* (3) Radio orientation course for engineering students. Familiarizes student with electronics and radio theory. Six lecture and laboratory periods. Laboratory fee $2.00.

201. *Television Theory and Practice.* (6) Design and operation of T. V. receivers. Prerequisite: 101. Twelve lecture and laboratory periods. Laboratory fee $2.00.

202. *Television Servicing.* (6) Repair, testing and alignment of T. V. receivers. Prerequisite: 201. Twelve lecture and laboratory periods. Laboratory fee $2.00.

203. *Radio Transmitters and Communications Procedure.* (6) Transmitter design and operation; F.C.C. laws and procedures. Prerequisite: 201. Twelve lecture and laboratory periods. Laboratory fee $2.00.

COURSES IN SHEET METAL

Undergraduate

101. *Fundamentals of Sheet Metal Work.* (3) A course designed to acquaint the student with the use of measuring and layout tools common to sheet metal work; principles of orthographic projection; parallel and radial methods of development and their application of layout work; and the measurement and layout of edges, seams and notches. Six laboratory and lecture periods. Laboratory fee $2.00.

102. *Sheet Metal Hand Processes.* (3) A course that treats basic trade theory and related hand processes performed in sheet metal work with hand, bench, cutting and layout tools. Six laboratory and lecture periods. Laboratory fee $2.00.

103. *Sheet Metal Machine Processes.* (3) A basic course dealing with the theory and operation of sheet metal machines and accessories. Six laboratory and lecture periods. Laboratory fee $2.00.

201. *Sheet Metal Pattern Work and Development.* (6) A course designed to correlate pattern drafting and shop practice dealing with parallel, radial, and triangulation methods of pattern development. Prerequisites: 101-2-3. Twelve laboratory and lecture periods. Laboratory fee $2.00.

202. *Advanced Sheet Metal Work.* (6) A study involving practical and shortened methods of developing patterns for general sheet metal work with emphasis on features of construction and labor saving expedients. Prerequisites: 101-2-3. Twelve laboratory and lecture periods. Laboratory fee $2.00.

203. *Architectural Sheet Metal Work.* (6) Theory and practice in the development and construction of patterns involving the use of sheet metal as related to building construction. Prerequisites: 101-2-3. Twelve laboratory and lecture periods. Laboratory fee $2.00.

COURSES IN WELDING

101. *Fundamentals of Welding.* (3) A basic course in the theory of welding designed to acquaint the student with the use of oxy-acetylene and arc welding tools, equipment and materials. Six laboratory and lecture periods. Laboratory fee $2.00.

102-3. *Welding Mild Steel.* (6) Theory and practice in the fusion welding of mild steel including the shielded arc and oxy-acetylene process. Six laboratory and lecture peciods. Laboratory fee $2.00.

201. *Advanced Welding Procedures.* (6) Theory and practice in the fusion welding of such metals as wrought iron, chromium and chromium-nickel steels, cast iron, galvanized iron, aluminum, copper and copper alloys. Prerequisites: 101-2-3. Twelve laboratory and lecture periods. Laboratory fee $2.00.

202. *Inspection and Testing.* (6) A study of the qualifications, duties and procedures of oxy-acetylene and arc welding operators and inspectors as prescribed by the American Welding Society and Society for Testing Materials. Laboratory work involves the preparation, inspection and testing of weld specimens, Prerequisites: 101-2-3. Twelve laboratory and lecture periods. Laboratory fee $2.00.

203. *Welding Shop Operation and Management.* (6) A study involving shop layout, job estimating and cost control. Prerequisites: 101-2-3. Twelve laboratory and lecture periods. Laboratory fee $2.00.

COURSES IN WOODWORKING

Undergraduate

101. *Fundamentals of Carpentry.* (3) Modern tools and portable machinery materials and their uses. Carpentry specifications, modern house construction. Six lecture and laboratory periods. Laboratory fee $2.00.

102. *Foundation Construction.* (3) Beginning construction work. Staking and laying out foundation walls. Forms for footings. Forms for foundation walls, methods used in building forms. Prerequisite: 101. Six lecture and laboratory periods. Laboratory fee $2.00.

103. *Walls and Floor Framing.* (3) Types of wall framing, sill construction, girders and beams, joints, budging subflooring, outside walls, partition wall, framing, rough openings, second floor joists, and wall sheathing. Prerequisite: 101. Six lecture and laboratory periods. Laboratory fee $2.00.

111. *Hand Woodworking.* (3) A study of the proper use and care of common hand woodworking tools by the construction of simple projects that involve their uses. Six lecture and laboratory periods. Laboratory fee $2.00.

112. *Machine Woodworking.* (3) Emphasis is placed upon the proper maintenance and operation of such power woodworking machines as circular saws, shapers, morticers, band-saws, surfacers and jointers. Simple projects are constructed that involve the uses of these machines. Six lecture and laboratory periods. Laboratory fee $2.00.

113. *Wood Turning.* (3) Deals with the basic wood lathe techniques and processes that are involved in turning and finishing simple turned projects. Six lecture and laboratory periods. Laboratory fee $2.00.

201. *Roof Framing.* (6) Styles of roof, gable roof, hip roof, gambrel roof. Principles of roof framing. The ridge common rafter. Hip rafter, layout of overhang and tail cut, valley rafter, jack rafter, dormer roof. Prerequisite: 101. Twelve lecture and laboratory periods. Laboratory fee $2.00.

202. *Exterior Finish.* (2) Covering for roof and wall, simple open and box cornice, gable trim, placing door and window frames, water table, corner boards. Porch cornice, bay window trim and exterior wall covering. Prerequisite: 101. Twelve lecture and laboratory periods. Laboratory fee $2.00.

203. *Interior Finish and Millwork.* (6) 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: 101. Twelve lecture and laboratory periods. Laboratory fee $2.00.

Vocational Technical Training

200. *Cooperative on-the-job Work Experience.* (3-15) Performed with the cooperation of an employer in industry. It consists of varied and comprehensive supervised practical experiences utilizing the skills and related knowledge acquired by the student in his major area of specialization. To the extent feasible employers in Nashville or nearest Nashville will be used. Transportation, living and other expenses incidental to this course are paid for by the student.

201. *Mechanics of Materials.* (3) Designed to meet the needs of the Vocational Technical student whose primary concern is the development of basic technical skills. The fundamental principles of mechanics will be given concurrently with their application in the calculation of stresses in simple structures. Mathematics above the level of trigonometry will not be used in the presentation of theory and practice involved.

DEPARTMENT OF AIR SCIENCE

MAJOR CLAUDE DIXON, Head

DEPARTMENT OF AIR SCIENCE

AIR FORCE RESERVE OFFICERS TRAINING CORPS

Purpose of the Air Force Reserve Officers Training Corps

The AFROTC program is a major source of officers for the Air Force. The purpose and specific objectives of the program are:

a. To develop in the cadet by precept, example and participation the attributes of character, personality, and leadership which are essential to every officer of the Air Force;

b. To develop in the cadet an interest in the Air Force and an understanding of its missions, organization, problems, and techniques;

c. To provide the cadet with a course of military education which, with his academic curriculum, will qualify him to discharge the duties and responsibilities required of him as an officer of the Air Force;

d. To develop in the cadet the desire to make a career as an officer in a component of the Air Force;

e. To motivate the cadet to obtain an aeronautical rating in the Air Force upon graduation.

Mission of Air Force Reserve Officers Training Corps

The mission of the AFROTC is to select and prepare cadets, through a permanent program of instruction at this university, to serve as officers in the Regular and Reserve components of the Air Force, and to assist in discharging, where necessary, any institutional obligations to offer military training.

Statutory Requirements

Eligibility for formal enrollment is limited by law to students at institutions where AFROTC units are established who are:

a. Citizens of the United States.

b. Not less than 14 years of age.

c. Physically qualified for military service, or will be so on arrival at military age.

Character Requirements

a. Good moral character is a prerequisite for enrollment and continuance in the AFROTC. A student who has been convicted by a court-martial or by a civil court for any offense other than a minor traffic violation will not be certified for Selective Service deferment as a basic student nor will he be enrolled initially or continued in the Advanced Course unless such offense is waived by competent authority.

b. Persons eliminated from a service academy or from any officer training program of the Army, Navy, or Air Force for military inaptitude, indifference, or undesirable traits of character will not be formally enrolled or permitted to wear the AFROTC uniform.

c. Persons eliminated for disciplinary reasons from a service academy or from one of the officer training programs of the Army, Navy, or Air Force will neither be certified for Selective Service deferment as basic students nor formally enrolled in the Advanced Course, unless a waiver is granted by competent authority.

Loyalty Requirements

A student who does not sign the following certificate which will be a part of his record, will not be formally enrolled in the basic course: "I do solemnly swear (or affirm) that I will support and defend the Constitution of the United

States against all enemies, foreign or domestic; that I will bear true faith and allegiance to the same; and that I take this obligation freely, without any mental reservation or purpose of evasion; so help me God."

Age Requirements

A student will not be enrolled initially or be allowed to re-enroll in the AFROTC after a period of nonparticipation in AFROTC training, if his age is such that he will be unable to complete all requirements for appointment as a Reserve of the Air Force prior to reaching his 28th birthday.

Institutional Requirement (Enrollment in Basic Course)

In keeping with the provisions of the Morrill (Land Grant) Act, Tennessee A&I State University requires as a prerequisite for graduation that all physically qualified male students enroll in the Air Force ROTC until they complete the two-year basic course, provided they meet all other requirements as outlined above. The determination of who may be excused from the institutional military training requirement on the basis of previous military training or service, or for other reasons, is the prerogative of the institutional authorities.

Enrollment in Advanced Course

Four categories are open to advanced course enrollees as listed below. Qualified students may be enrolled in the appropriate category in such number as deemed necessary to fulfill, but not to exceed, quotas set by Headquarters United State Air Force and sub-alloted by the Commandant, Air Force ROTC, for the graduating class in which they will be appointed.

a. Category I—Cadets will be considered eligible for selection into the advanced course during each academic year who:

(1) Achieve desirable pilot and officer stanine scores from the Air Force Officer Qualification Test (AFOQT).
(2) Are medically qualified in accordance with current Air Force Directives for Flying Training Class I.
(3) Possess desirable officer qualities.
(4) Possess a cumulative quality point average at least equivalent to that required by the University for awarding a degree.
(5) Agree to serve on active duty for a minimum of 5 years, unless sooner relieved by the government.
(6) Will not attain their 27th birthday prior to the time of entrance into pilot training.
(7) Are effectively motivated and desirous of applying for pilot training.

b. Category IA—Cadets will be considered eligible for selection into the advanced course during each academic year who:

(1) Achieve a desirable observer and officer stanine score from the Air Force Officer Qualification Test (AFOQT).
(2) Are medically qualified in accordance with current Air Force Directives for Flying Training Class I or IA.
(3) Possess desirable officer qualities.
(4) Possess a cumulative quality point average at least equivalent to that required by the University for awarding a degree.
(5) Agree to serve on active duty for a minimum of 3 years, unless sooner relieved by the government.
(6) Will not attain their 27th birthday prior to the time of entrance into pilot training.
(7) Are effectively motivated and desirous of applying for observer technical training.

c. Category II—Cadets will be considered eligible for selection into the advanced course during each academic year who:

(1) Achieve desirable officer stanine score from the Air Force Officer Qualification Test (AFOQT).
(2) Possess desirable officer qualities.
(3) Are medically qualified for commissioning in accordance with current Air Force directives.
(4) Possess a cumulative quality point average at least equivalent to that required by the University for awarding a degree.
(5) Agree to serve on active duty for a minimum of 3 years, unless sooner relieved by the government.
(6) Will be academically qualified by one of the following:
  (a) Pursuing a baccalaureate degree in:
    Electrical Engineering
    Aeronautical Engineering
    Civil Engineering
    Chemical Engineering
    Industrial Engineering
    Petroleum Engineering
    Mechanical Engineering, or
    Meteorology
  (b) Completing an Academic Major in:
    Mathematics or Mathematics Statistics
    Physics
    Nuclear Physics
    Nuclear Chemistry, or
    Nuclear Engineering

d. Category III—Cadets will be considered eligible for selection into the advanced course during each academic year who:

(1) Have identified themselves as possessing outstanding officer potential as evidenced by the officer stanine score attained from the Air Force Officer Qualification Test (AFOQT). These cadets must be of superior quality academically, demonstrate an exemplary code of ethics and conduct, be medically qualified for commissioning and be highly motivated toward a career in the Air Force, or

e. Category IV—Veterans who have completed selective service requirements may be considered eligible for entrance into the advanced course during each Academic Year provided they:

(1) Possess desirable officer qualities as evidenced by the officer stanine score attained from the Air Force Officer Qualification Test (AFOQT).
(2) Possess a cumulative quality point average at least equivalent to that required by the University for awarding a degree.
(3) Are medically qualified for commissioning in accordance with current Air Force directives.

Credit for Previous Military Training

a. An AFROTC cadet who transfers to another institution at which an AFROTC unit is also maintained will be given credit for that part of the AFROTC course which he successfully completed at the losing institution, as evidenced by the AFROTC cadet official record.

b. On the basis of previous honorable active service in the Air Force, Army, Navy, Marine Corps, or Coast Guard, a cadet may request a waiver of the basic course, or any portion thereof, as a requirement for entrance into the advanced course. The Professor of Air Science may then waive so much of the basic course as he considers equivalent to the active service training, *provided that he does not waive any portion which the cadet can complete prior to entrance into the advanced course.* To satisfy entrance requirements for the advanced course, veterans entering an institution at freshman or sophomore level who

desire a commission through AFROTC will be required to take in phase with nonveteran contemporaries the portion of the basic program which remains.

c. The Professor of Air Science may waive on a year-for-year basis so much of the AFROTC program as he considers equivalent to previous training at the United States Air Force Academy, United States Military Academy, United States Naval Academy, United States Coast Guard Academy, or in the Senior Division of the Army ROTC or Naval ROTC, for students eligible and accepted for formal enrollment.

d. Advanced standing will not be granted for training received prior to the student's 14th birthday; nor for training received as a member of a Reserve component of any of the Armed Forces of the United States when not in the active military service; nor for training received at an institution at which no commissioned officer of the active military forces is detailed by orders of the appropriate department as Professor of Military Science and Tactics, Professor of Naval Science, or Professor of Air Science; nor for training received as a member of the Junior Division Army ROTC.

Deferment Policy

The Air Force ROTC deferment procedure is designed solely to enable selected cadets of the Air Force ROTC to qualify for appointment as commissioned officers of a component of the Air Force through uninterrupted completion of academic and military courses. The Air Force will not select for deferment a cadet who cannot ultimately qualify for a commission through enrollment and training afforded by the Air Force ROTC or who evidences lack of desire to become an officer of the Air Force.

a. To qualify for continued deferment, cadets must satisfy all Air Force ROTC standards, including the following:

(1) They must remain in good standing in military courses (2.00 average).

(2) They must remain in good standing in academic courses (2.00 average).

(3) Their attendance must be continuous, except for the following periods of authorized absence:

Regularly scheduled vacation periods;
Periods of sick leave authorized by the Professor of Air Science;
Periods of leave from the military course of instruction that are authorized by the Commandant, Air Force ROTC;
Periods of regularly scheduled on-the-job training under a cooperative plan;
Periods after completion of the Air Force ROTC program and before completing the academic course, when authorized by the Commandant, Air Force ROTC.

(4) They must graduate within twelve months after completing Air Science IV (Including AFROTC summer training).

Obligations of Deferred Cadets

To be deferred from induction, those selected for enrollment continuance in the Air Force ROTC program must sign a Deferment Agreement, which states in part: I . . . hereby agree to complete the basic course, if enrolled therein, to enroll in and complete the advanced course at the proper time, if accepted therefor; upon completion of termination of the course of instruction therein, to accept a commission, if tendered; to serve on active duty in the Air Force for a period of not less than 2 years after receipt of such commission, subject to call by the Secretary of the Air Force; and to remain a member of a Regular or Reserve component of the Air Force until the sixth (6th) anniversary of the receipt of my commission; or, if the Air Force does not require my service on active duty for 2 years in fulfillment of my obligation, to serve on active duty for training with the Air Force for a period of 6 months after receipt of my commission and thereafter to remain a member of an appropriate Reserve unit until the eighth (8th) anniversary of the receipt of my commission.

a. Registrants who are continued in a deferred status under Section 6, UMT&S Act (50 USC App 456 (b)) remain liable for training and service in the Armed Forces until their 35th birthday.

b. The deferment of an individual will be cancelled if he ceases to be a formally enrolled AFROTC cadet, or if he fails to remain in good standing in the academic courses and military courses (2.00).

Discharge From Basic Course

With the concurrence of the university authorities, the Professor of Air Science may discharge a basic cadet from the AFROTC. Such discharge relieves the university of its obligation to require the cadet concerned to complete the basic course as a prerequisite for graduation.

Discharge From Advanced Course

a. The Professor of Air Science may discharge a cadet from the advanced course. Each such discharge must receive the concurrence of the head of the university or his designated representative.

b. A cadet will be discharged from the advanced course for the convenience of the Government. A refund of commutation of subsistence paid the cadet will not be required.

c. A cadet who, for any reason, is unable to continue regular enrollment in the institution, will be discharged from the advanced course. Such cadet may be re-enrolled in the advanced course upon his return to an institution having an AFROTC unit.

d. A cadet who, under competitive criteria, falls below acceptable retention standards will be discharged from the advanced course. Such cadet may be re-enrolled only upon approval of the Commandant, Air Force ROTC.

e. The Professor of Air Science may discharge a cadet because of inaptitude, indifference to training, incompatibility, willfully evading the terms of his advanced course agreement, for disciplinary reasons, or for reasons involving undesirable traits of character. A cadet so discharged will not be re-enrolled in the advanced course.

Discharge With Prejudice

A cadet whose conduct is or has been such as to bring dishonor on the corps and upon himself may be discharged "with prejudice" subject to approval of the head of the university and the Commandant, AFROTC. A cadet discharged "with prejudice" is not eligible for enrollment in an Air Force officer procurement program or for appointment in any component of the Air Force.

Summary of AFROTC Curriculum

The AFROTC course of study is divided into the basic course covering the first two years, the advanced course covering the Junior and Senior years, and Summer Training. The course of study consists of instruction totaling 480 hours; allocated as follows: Freshman and Sophomore years, 90 hours each; Junior and Senior years, 150 hours each; and Summer Training (normally attended between the Junior and Senior years) four weeks.

The basic course, Air Age Citizenship Education, is an introduction to the nature of aviation and its influence on modern man, and is designed, in part to interest the cadet in continuing in AFROTC, and ultimately, in making the Air Force his career.

The advanced course builds on this background and provides instruction designed to further develop the cadet's officer potential. This is accomplished through attention to his personal skills (e.g., his ability to communicate, to think clearly, and to deal with people), and through expansion of his knowledge and understanding of global concepts and Air Force operational principles.

Throughout the AFROTC course of study, the cadet is provided with general education complementary to the academic program of the university. While this material is specifically intended to serve the student as an Air Force officer, much of it will be useful to him in civilian occupations.

In addition to the formal course of study, the curriculum includes: Experiences designed to stimulate and develop a growing interest in the Air Force flight training program; e.g., orientation flights and visits to Air Force bases.

Opportunities for the cadet to apply principles of leadership, management, and staff work in actual working situations.

Other experiences (social activities, intramural competition, interdetachment competition, and guidance sessions) designed to assist in the development of officer qualities.

Detailed Course Outline

AIR SCIENCE I

The Airplane and the Air Age

(Two hours class, two hours laboratory per week)

A. S. 151—The Airplane and the Air Age (30) hours)

- A. Introduction to AFROTC ..... 4 hours
- B. Introduction to Aviation ..... 16 hours
- C. Leadership Laboratory ..... 10 hours

A. S. 152—The Airplane and the Air Age (30 hours)

- A. Fundamentals of Global Geography ..... 10 hours
- B. International Tensions and Security Organizations ..... 10 hours
- C. Leadership Laboratory ..... 10 hours

A. S. 153—The Airplane and the Air Age (30 hours)

- A. International Tensions and Security Organizations ..... 5 hours
- B. The Military Instrument of National Security ..... 15 hours
- C. Leadership Laboratory ..... 10 hours

AIR SCIENCE II

Elements and Potentials of Air Power

(Two hours class, two hours laboratory per week)

A. S. 251—Elements and Potentials of Air Power (30 hours)

- A. Career in the United States Air Force ..... 6 hours
- B. Moral and Spiritual Foundations for Leadership ..... 1 hour
- C. Introduction to Aerial Warfare ..... 3 hours
- D. Targets ..... 6 hours
- E. Weapons ..... 4 hours
- F. Leadership Laboratory ..... 10 hours

A. S. 252—Elements and Potentials of Air Power (30 hours)

- A. Weapons ..... 10 hours
- B. Aircraft ..... 10 hours
- C. Leadership Laboratory ..... 10 hours

A. S. 253—Elements and Potentials of Air Power (30 hours)

- A. Bases ..... 6 hours
- B. Operations ..... 14 hours
- C. Leadership Laboratory ..... 10 hours

AIR SCIENCE III

The Air Force Officer in the Air Age

(Four hours class, 2 hours laboratory per week)

A. S. 351—The Air Force Officer in the Air Age (50 hours)

- A. Introduction to Advanced AFROTC ..... 2 hours
- B. The Air Force Commander and his Staff ..... 8 hours
- C. Creative Problem Solving ..... 20 hours
- D. Instructing in the Air Force ..... 10 hours
- E. Leadership Laboratory ..... 10 hours

A. S. 352—The Air Force Officer in the Air Age (50 hours)

- A. Communicating in the Air Force ..... 25 hours
- B. Military Justice System ..... 15 hours
- C. Leadership Laboratory ..... 10 hours

A. S. 353—The Air Force Officer in the Air Age (50 hours)

- A. Weather ..... 15 hours
- B. Navigation ..... 15 hours
- C. Air Force Base Functions ..... 5 hours
- D. Preparation for Summer Training Unit ..... 5 hours
- E. Leadership Laboratory ..... 10 hours

AIR SCIENCE IV

Leadership and Air Power Concepts

(Four hours class, 2 hours laboratory per week)

A. S. 451—Leadership and Air Power Concepts (50 hours)

- A. Leadership and Management Seminar ..... 40 hours
- B. Leadership Laboratory ..... 10 hours

A. S. 452—Leadership and Air Power Concepts (50 hours)

- A. Career Guidance ..... 4 hours
- B. Moral Responsibility of Air Force Officers ..... 1 hour
- C. Military Aspects of World Political Geography ..... 20 hours
- D. Military Aviation and the Evolution of Warfare ..... 15 hours
- E. Leadership Laboratory ..... 10 hours

A. S. 453—Leadership and Air Power Concepts (50 hours)

- A. Military Aspects of World Political Geography ..... 25 hours
- B. Briefing for Commissioned Service ..... 10 hours
- C. Professor of Air Science Time ..... 5 hours
- D. Leadership Laboratory ..... 10 hours

University Credit

Tennessee A. & I. State University grants the following credit for Air Science courses:

- Air Science I (A.S. 151, 152, 153) ..... 3 quarter hours per year
- Air Science II (A.S. 251, 252, 253) ..... 3 quarter hours per year
- Air Science III (A.S. 351, 352, 353) ..... 9 quarter hours per year
- Air Science IV (A.S. 451, 452, 453) ..... 9 quarter hours per year

NOTE: No credit is granted by the University for attending Summer Training.

Air Force ROTC Emoluments

All students in the AFROTC are furnished texts and uniforms by Tennessee A. & I. State University. These students are required to deposit ten dollars with the Bursar of the University as surety against loss or damage of uniforms or equipment.

At the end of the Spring Quarter, or at such time as the student officially withdraws from the University, the Ten Dollar ($10) deposit is returned to the student provided he turns in all textual materials and equipment in a serviceable condition, except for "fair wear and tear."

In addition to being furnished texts, uniforms and other equipment, students enrolled in Advanced AFROTC are paid subsistence allowance at a daily rate prescribed for each fiscal year by the Secretary of the Air Force. The period of entitlement for advanced cadets will be between the first day of the full quarter and the date of graduation, approximately twenty one months later, minus the number of days in the authorized summer training unit pay period. The period of summer training is approximately twenty-eight days.

NOTE: Beginning with the school year 1959-60, all AFROTC cadets will be required to furnish their own low quarter, plain toed, black military shoes for wear with their uniforms.

Sponsored Activities

The Department of Air Science sponsors the following activities:

a. The AFROTC Rifle Team. Cadets are selected to represent Tennessee A. & I. State University AFROTC in small bore rifle competition with other colleges and universities. Members of this team receive a letter award. Previous experiences in firearms is not required.

b. 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.

c. The Arnold Air Society. This is a national AFROTC SOCIETY for outstanding cadets enrolled in the Advanced Course.

d. The AFROTC Society. This society is a social organization open to all enrolled cadets organized to promote the general welfare of the cadet, and to provide social functions and activities peculiar to the cadet corps. It publishes "The Rocket", a cadet newspaper. Dues are $3.00 per cadet each year.

e. The AFROTC Angels Flight. This is an organization for the co-eds of the university who possess great interest in the activities of the AFROTC Program.

f. The AFROTC Glee Club. This is an organized choral group of approximately 35 cadets who sing at AFROTC programs on and off campus. They are trained by the University choir director.

DESCRIPTION OF COURSES

Basic Course (Air Age Citizenship Education)

Air Science I: (151, 152, 153) *The Airplane and the Air Age*

Details of the AFROTC program; moral and statutory obligations for military service; introduction to aviation; fundamentals of global geography; factors of world power; the nation's defense organization; and basic military training.

Cadet Outcomes: When the cadet has completed Air Science I, he should:

1. Be acquainted with the purposes, rules and policies, curricular content, and related activities of the AFROTC program.
2. Understand why he may be required to serve in the Armed Forces.
3. Have a general knowledge of the historical development of aviation and appreciate the importance of both military and commercial aviation in the modern world.
4. Be aware of career opportunities in the field of aviation (both military and commercial).
5. Have a general knowledge of the nomenclature, classification, and construction of aircraft and of the basic principles of flight.
6. Have an understanding of world geographic relationships in the Air Age.
7. Be generally familiar with common types of maps and map projections, their characteristics, and their limitations in representing the earth's surface.

8. Understand the geographical foundations of world political and military power.
9. Be aware of the major sources of world tensions and the nature of world security problems and be acquainted with international attempts to alleviate these tensions.
10. Be better able to evaluate statements in the press and radio about current world problems.
11. Be acquainted with the capabilities of military aviation.
12. Have achieved competence in the basic fundamentals of military drill, wear the uniform properly and understand and accept his responsibilities for maintaining proper military courtesy and discipline.
13. Be able to participate effectively in military drills and ceremonies.

Air Science II: (251, 252, 253) *Elements and Potentials of Air Power*

Careers in the USAF, moral and spiritual foundations for leadership; targets; weapons, aircraft; bases, operations; and leadership laboratory.

Cadet Outcomes: When the cadet has completed Air Science II, he should:

1. Be acquainted with the USAF Officer Career Program and understand the general advantages and opportunities of a career as a USAF OFFICER.
2. Have an understanding of the character requirements and moral obligations of an Air Force Officer and recognize that an ethical concept of life is a determining factor in developing the highest type of leadership.
3. Understand the USAF combat mission.
4. Better understand the characteristics and capabilities of air power as an instrument of war and the role of air forces in land, sea and air campaigns.
5. Understand the principles of target selection and be acquainted with the principal weapons, aircraft, operational factors, and organizational units which the USAF employs in accomplishing its functions.
6. Acquire a higher level of proficiency in the basic fundamentals of drill and ceremonies.
7. Be able to assume the role of the instructor and leader of the individual and element.
8. Have a feeling of identification with the USAF and a desire to serve as an officer in it.

Advanced Course (Air Force Officer Development)

Air Science III: (351, 352, 353) *The Air Force Officer in the Air Age*

Command and staff concepts; leadership laboratory; creative problem solving; communication channels and skills; principles and techniques of learning and teaching; military law, courts and boards; weather; air navigation; functions of the Air Force Base; and preparation for summer training.

Cadet Outcomes: When the cadet has completed Air Science III, he should:

1. Understand the command and staff structure of the Air Force and how it functions in general on an Air Force base.
2. Be better able to apply ingenuity and logical thinking to the solution of the personal and professional problems of a junior officer in the Air Force.
3. Be acquainted with the Air Force communications channels and media.
4. Understand the nature of communication and its function in Air Force management and operations.
5. Be able to read and listen with understanding and objectivity, to speak clearly and effectively, and to write military reports and correspondence using acceptable, intelligible English in appropriate military form.
6. Have some competence in fundamental instructional techniques.

7. Appreciate the purposes of military justice and be acquainted with the basic principles, rules and procedures of military courts and boards.
8. Have a basic understanding of weather and how it affects the Air Force.
9. Have a working acquaintance with the terminology, the basic tools, and the procedures of air navigation.
10. Be prepared to derive maximum benefits from the coming Summer Training program.
11. Be able to function in situations which require the understanding of and application of leadership techniques.
12. Be proficient in conducting leadership laboratory activities of Air Science I and II cadets.

Summer Training Unit—The Air Force in Operation

(Four weeks between the Junior and Senior Years)

Junior officer training with emphasis on military discipline, aircrew and aircraft indoctrination, a career in the USAF, organization and functions of an Air Force base, physical training and weapons familiarization.

Cadet Outcomes: When the cadet has completed AFROTC summer training, he should:

1. Have acquired those leadership qualities and the esprit de corps which derive from working with others under conditions of military life.
2. Have an increased interest in flying training and be able to practice routine procedures associated with non-aircrew flying.
3. Understand the moral responsibility and obligations of an Air Force officer.
4. Be acquainted with the functions performed by the various organizations and key officers of the Air Force base.
5. Have acquired increased proficiency in leading and participating in military drills, parades, and ceremonies.
6. Be able to participate in a well-rounded athletic program.
7. Be able to care for and use his personal weapons properly.
8. Be more nearly qualified to be a junior officer in the Air Force.

Air Science IV: (451, 452, 453) *Leadership and Air Power Concepts*

Leadership and management; military aspects of world political geography; foundations of national power; military aviation and the evolution of warfare; career guidance; and briefing for commissioned service.

Cadet Outcomes: When the cadet has completed Air Science IV, he should:

1. Understand the concepts and principles of command and be able to apply them as an officer in the USAF.
2. Be able to apply the principles of leadership based upon an understanding of human needs.
3. Understand the relationship of geographical factors to national strength and international power patterns.
4. Understand the significance of this nation's key position as a world power.
5. Understand the relationship of military strength and foreign policy.
6. Appreciate the present and potential significance of military aviation as an instrument of warfare.
7. Be acquainted with the opportunities open to him upon graduation for duty and training with the Air Force, and understand the procedures for making application for this duty and training.
8. Be prepared to make his adjustment to active duty as an officer of the USAF.
9. Have an understanding that man is a being endowed with conscience and reason and is therefore responsible and accountable for his behavior.

Flight Instruction Program

Through the Ayeni Flying Service, the University, under contract with the Air Force, offers all Air Science IV Category I cadets flying instruction, amounting to 36½ hours of dual and solo time. Academic instruction in safety, meterology, navigation and regulations is given by the Air Science Staff. The objective is to qualify all potential Air Force pilots for a private flying license, thereby determining the cadets' aptitude for flying.

Notes